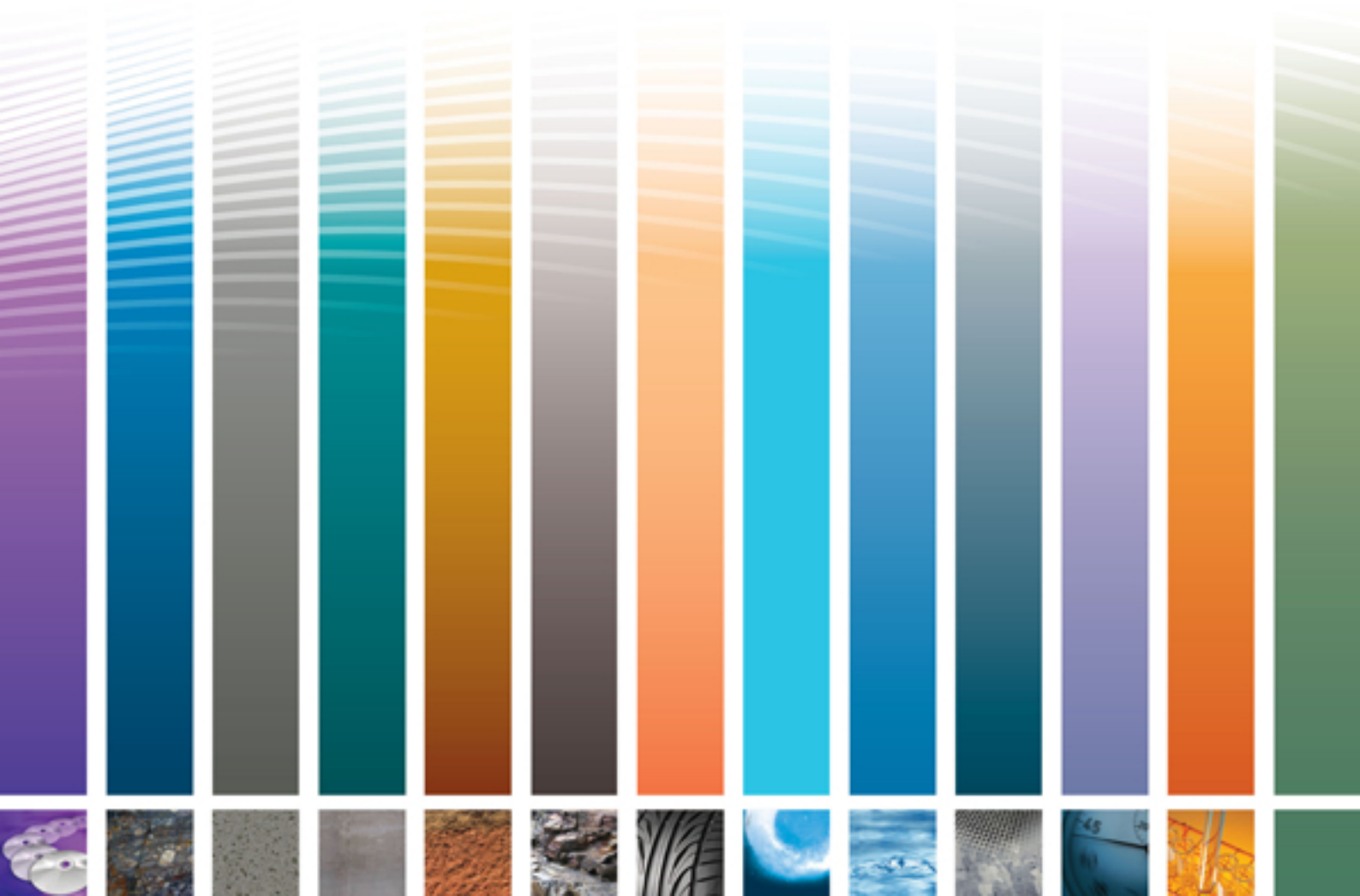
7th Edition

Controlab

The market leader in equipement for civil and mechanical engineering laboratories

TEST ON MATERIALS
LABORATORY EQUIPEMENT



This year, CONTROLAB is celebrating its 33rd anniversary as the leading French manufacturer and distributor of laboratory equipment and testing machines for civil engineering.

After PERRIER, LABOTEST, INTERCO and EUROMATEST were integrated during the 2000s, and the development of a large number of innovative products, CONTROLAB is now the leading supplier of equipment for civil engineering laboratories in France, in North Africa and in sub-Saharan Africa, and, increasingly, in the east of Europe and the Middle-East.

CONTROLAB has among its main customers :
Control laboratories (private or public).
Building and public works firms and manufacturers of construction materials.
Technical and higher education and research laboratories.
Engineering and construction companies ... both in France and abroad.

CONTROLAB has for a long time been the benchmark in the field of aggregate, concrete and cement laboratories.

With this new catalogue, CONTROLAB rises to the same rank in the field of soils, pavements and coated materials with an increased technical and commercial support team in these specific fields, and with the fullest product offering particularly thanks to recent developments by our teams of R&D Engineers.
In this way, our engineering design office enabled CONTROLAB to devise and market new equipment, software and innovative processes, often through partnerships set up with prestigious customers.

In this new edition, we have particularly worked on very full range of products, complying with all local standards in force, which makes it possible to propose a wide choice of equipment the performances and costs of which may be adapted both to research centres and to small field entities, in accordance with all our customers' budget constraints and actual requirements.

CONTROLAB also has new skills which enable it to propose to firms, industrialists, laboratories as well as to technical and higher education, the most high-performance equipment and related services to solve the new problems with which they are confronted. Its Metrology laboratory is constantly monitored guaranteeing its connection to the national calibration chains. Recently, CONTROLAB became associated with TESTWELL which proposes COFRAC verification/calibration services according to the benchmark NF EN ISO 17025 (programme 122-1). Finally, CONTROLAB's ISO 9001 (version 2008) certification was recently renewed, with quality still being the basis of CONTROLAB's success.

Building on its new resources
CONTROLAB today puts even more high-performance teams of Technicians, Engineers and Technical Sales staff at its customers' service to implement world-wide a comprehensive service of research and technical consulting, installation, training, preventive maintenance, an after-sales service and metrological control.

Do not hesitate to go there as well as to our Web site **www.controlab.fr**, in order, for instance, to find out about the latest new products available, or again to ask for quotations on line.

The CONTROLAB teams are at your entire disposal to provide any information, advice, technical support, specific research or a quotation.

In a difficult economic context, we are proud to have you join in our development by having you share all these new elements which somewhat strengthen our partnership.

Xavier LEPRÊTRE
CEO

François VERGON
President

How to quickly find the desired product in this catalogue ? >>>

Five brands at your service !

PERRIER · Euromatest · Sinco · controlab · Société internationale de contrôle · INTERCO · LABOTEST

Tests on Materials

7th Edition

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1 By thematic classification

Modelled on how your tests were prepared and treated *(see summary above)*.

2 By a standard

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If you have the standard number, you will find the numbers of the pages concerned in the standards index.

3 By a reference

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If you have the product reference but not the same : look in the index of references.

4 By product name

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If you have the product name but not the reference : refer to the product index.

From the Web by visiting our site : **www.controlab.net**

Under the impetus of its General Management,

CONTROLAB has been engaged in a Quality approach for nearly a decade now. Its actions were crowned with success when it obtained the ISO 9002 certification in 1999, and then the ISO 9001 version 2008 certification in 2010.

CONTROLAB has always tried to place the satisfaction of its customers and the quality of its products and services at the very heart of its strategy and its operational actions.

Over the years, this major commitment has reinforced its image as a designer and manufacturer of high quality products and services. This has permitted CONTROLAB to position itself as leader on the French market and has made it one of the major actors on the civil engineering and mechanical engineering laboratory equipment sector in more than forty different countries.

Through this Quality and customer satisfaction approach, the CONTROLAB General Management has thus expressed its will to :

- Implement and develop a clear, effective and transversal Quality organisation,
- Define a realistic and ambitious Quality policy,
- Establish the Quality objectives to be reached by processes,
- Perform periodic Quality management reviews,
- Allocate the means and resources to set up and implement this policy.

Among the range of means implemented to establish its Quality policy, CONTROLAB has notably implemented :

- A "Process" approach, involving all the different CONTROLAB departments and to which strict written procedures are attached,
- Think tank groups with its employees in order to progress further in this direction,
- Monthly reports to the General Management along with adapted plans of action,
- Monthly key business indicators and statistics with performance indicators per process and monitoring indicators per department,
- A continuous improvement approach of the Quality processes and procedures ("PDCA"),
- A fine and systematic management of customer remarks and suggestions.

BUREAU VERITAS Certification

Certification

CONTROLAB
21 rue de Clichy - 93584 SAINT OUEN
FRANCE

Bureau Veritas Certification certifie que le système de management de la qualité de l'entreprise susmentionnée a été évalué et jugé conforme aux exigences de la norme :

Standard

NF EN ISO 9001 : 2008

Domaine d'activité

DEVELOPPEMENT D'EQUIPEMENTS D'ESSAIS SOUS LES MARQUES CONTROLAB, PERRIER, LABOTEST ET SOCIETE INTERNATIONALE DE CONTROLE. COMMERCIALISATION, INSTALLATION, SERVICE APRES VENTE ET MAINTENANCE DE MATERIELS DE LABORATOIRE DESTINES AU GENIE CIVIL ET AU GENIE MECANIQUE.

DEVELOPMENT OF TESTING EQUIPMENT UNDER THE CONTROLAB, PERRIER, LABOTEST AND INTERNATIONAL SOCIETY OF CONTROLLING TRADE MARKS. SALES, INSTALATION, AFTER SALES SERVICE AND MAINTENANCE OF LABORATORY EQUIPMENT FOR CIVIL ENGINEERING AND MECHANICAL ENGINEERING.

Date de certification originale : 16 avril 2004

Sous réserve du fonctionnement continu et satisfaisant du système de management de la qualité de l'entreprise, ce certificat est valable jusqu'au : 15 avril 2013

Pour vérifier la validité du certificat appeler au + 33(0) 1 40 11 12 46

Tout éclaircissement sur cette certification peut être obtenu auprès de l'entreprise certifiée.

Date : 02 novembre 2010
Numéro d'affaire : 2093572

Etienne CASAL
Directeur Général

cofrac

> Our desire is to meet the requirements and needs of our customers (private and public inspection laboratories, building and public works firms and materials companies, educational institution laboratories, research laboratories, engineering and construction firms, etc.) so as to merit the confidence that they are ever more numerous to give us each day, and this in each of our activity sectors, both in France and throughout the world.

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

Web Site

Welcome to the new CONTROLAB internet web site !

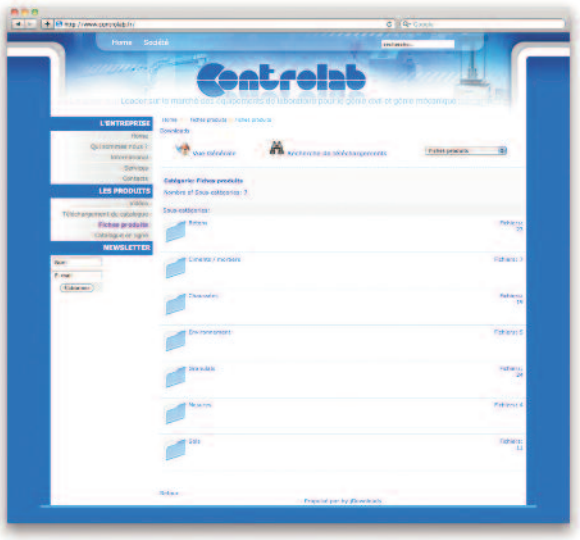
Thanks to a new design, new architecture and new functionalities, www.controlab.fr invites you to discover the whole new world of CONTROLAB !

Consult the new electronic CONTROLAB catalogue :

You'll find in it all the references of our paper-format catalogue with complete product technical data sheets including: specifications, photos, synthesis tables, etc. as well as links to the PDF-format technical data sheets of our leading products.

A search engine is at your disposal so you can easily find the product you are looking for.

CONTROLAB offers the possibility of subscribing to its information bulletin so you can be aware of CONTROLAB news, its new products, its special offers and the events organised by the Group.par le Groupe.



Ask for your CONTROLAB quotation on line :

You can also make a quotation on line
to which our technical salespersons will be happy to reply.

On www.controlab.fr you can find :

- an on-line catalogue complete with quotation request and its search engine,
- a presentation of the CONTROLAB Group : activities, contacts, references, services, etc.,
- a Publications section in which you can consult and download the latest technical data sheets for our products, catalogues and CONTROLAB News publications,
- a newsletter to keep you up to date with all the latest news at CONTROLAB.
- video presentation of products.

Material Resources

CONTROLAB occupies 2 000 m2 of buildings located in the city of Saint-Ouen (Seine-Saint-Denis), at about a hundred meters from the Paris "Peripherique" ring road and offering direct access to Charles de Gaulle and Orly international airports. This perfect location permits quick deliveries (within 24 hours) throughout all of France.

CONTROLAB's buildings are divided according to their activities :

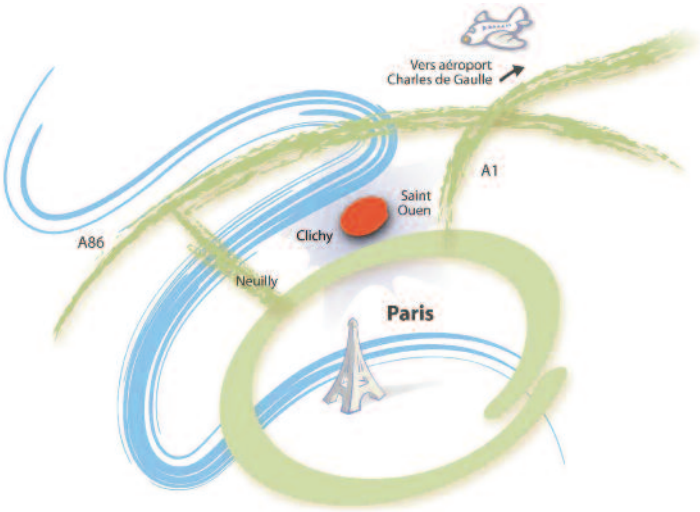
1. Development, production, engineering design department,
2. sales, administrative,
3. repair workshop, metrology laboratory,
4. receiving, logistics, storage.

1250 m² of storage

CONTROLAB's 1 250 m2 capacity warehouse permits storing approximately €2 million of immediately available equipment (3 000 references) to rapidly respond to all routine requests.

CONTROLAB has developed a data processing system established in network in such a manner that each person is able to access all the information necessary to execute his/her work while at the same time collaborating with the other CONTROLAB departments.

CONTROLAB also has two exhibition and demonstration halls equipped with the most recent equipment and the equipment offering the best performances.



Human resources

CONTROLAB is organised into departments whose activities are independent and which benefit from a large amount of autonomy.

Quality Department :

ISO 9001 version 2008, CONTROLAB does everything in its power to guarantee Quality and customer satisfaction, and this thanks to the "process approach" and the continual improvement of these processes.

Engineering Design Department :

Designs and develops new products, in particular CONTROLAB equipment and equipment stemming from PERRIER-LABOTEST and INTERCO-EUROMATEST and didactic materials, upgrades existing products as a function of the evolution of standards, ensures technological scanning, etc.

Presentation of the Group

Storage – Inspection – Receiving Department :
In compliance with ISO 9001 version 2008, ensures Quality Control at equipment reception/acceptance before stocking according to inspection data sheets (4 persons).

Dispatching Department :
Ensures the preparation, packing and dispatching of orders for both France and worldwide.

Metrology Department :
In collaboration with the Quality and Receiving Departments, metrologically verifies the equipment if necessary.

Marketing Department :
Ensures web site monitoring, the search for new products, optimises customer data sheets, launches external communication actions, synthesises sales information.

France Equipment Sales Department :
Ensures the marketing of Civil Engineering laboratory equipment in France and French overseas departments and territories.

Export Equipment Sales Department :
Ensures the marketing of Civil Engineering laboratory equipment in more than forty different countries.

Mechanical Engineering Sales Department :
Ensures the marketing of metal equipment in France and worldwide.

Maintenance / After-Sales Service Department :
Ensures the commissioning, start-up, preventive maintenance and after- sales service, both on site or in workshop, of all CONTROLAB, PERRIER- LABOTEST and INTERCO-EUROMATEST equipment (with more than 120 preventive maintenance contracts currently in effect, of which more than 50% are abroad).

Procurement Department :
Ensures purchasing of supplies, materials and equipment.

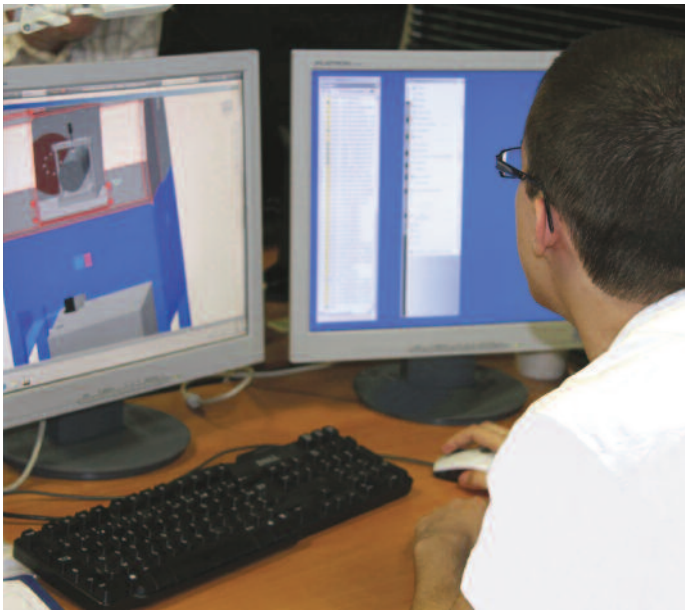
Financial Pole, Accounting, Human Resources Department: :
Ensures value for human and financial resources of the company.

General Management :
Ensures the definition of company organisation, development orientation and strategy.

Engineering Design

With partnerships instituted with a panel of multiple activity sector customers (carriers, concrete companies, truck drivers, cement companies, material test laboratories, engineering firms, teachers, etc.), the Engineering Design Department responds in the best way possible to all of your needs via the following missions :

- **Designing and developing** new equipment while taking both currently effective standards and your specific requirements into consideration,
- **Improving existing equipment**, in terms of use as well as modernisation and adaptation to new constraints (environmental, security and safety, normative, etc.),
- **Optimising the cost price** of our machines by value analysis while at the same time guaranteeing their quality and their conformity with specifications, and this in close collaboration with our teams, specialised sub-contractors and customers,
- **Performing normative monitoring and ensuring** that our products are in compliance with regulations and standards in effect,
- **Ensuring a multi-source technological watch** (specialised reviews, trade fairs and exhibitions, internet sites, etc.),
- **Monitoring and inspecting** the production processes and the Quality of our sub-contractors.



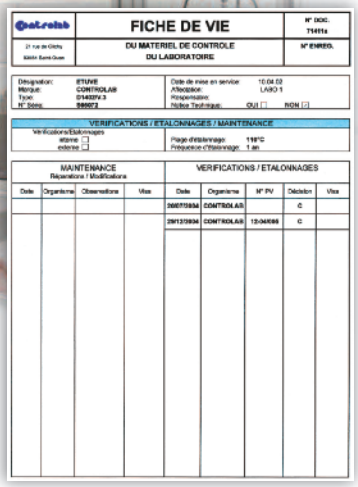
Metrological resources

Controlab issues verification statements with list of points,
as well as COFRAC attached calibration certificates.

The air-conditioned Metrology Laboratory possesses equipment that is perfectly adapted to its activity :

test bench for screens, surface table, calibration oven,
dynamometers with capacities included between 5 kN and 3 000 kN, etc.

Made up of measurement apparatus, this laboratory is the object
of constant surveillance. Periodic monitoring and maintenance guarantee
its correct condition and its attachment to the French national calibration chains.

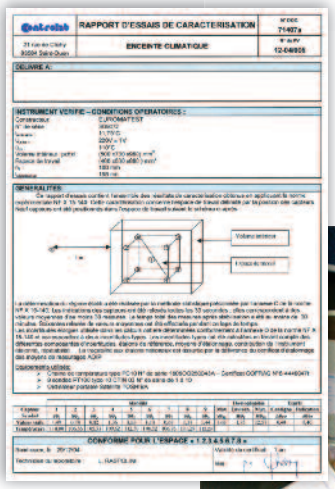

FICHE DE VIE

DU MATERIEL DE CONTROLE
DU LABORATOIRE

VERIFICATIONS / ETALONNAGES / MAINTENANCE

MAINTENANCE

VERIFICATIONS / ETALONNAGES


RAPPORT D'ESSAIS DE CARACTERISATION

ENCEINTE CLIMATIQUE

CE Marking

CONTROLAB, your partner for CE Marking, manages :

- Maintenance and cleaning of equipment.
- Metrological control by means of connected COFRAC calibration standards.
- Verification of compliance with CE marking standards.
- Readjustment when the equipment permits.
- Administrative management: service report, life cycle sheets, COFRAC calibration certificates, report of verification.
- Identification of equipment.

Equipment	Calibration span	Standard	Place of control	Ref.COFRAC Calibration Certificate	Ref. Verification report
Wire cloth sieve	0,040 < opening < 3,15 mm	NF ISO 3310-1	LABO		**MET501**
Perforated cloth sieve	4,00 < opening < 125 mm	NF ISO 3310-2	LABO		**MET501**
Slotted grid	2,5 < opening < 40 mm	NF EN 933-3	SITE		**MET502**
Ruler	0 < length < 500 mm		SITE		**MET503**
Scale	capacity under 60 kg		SITE		**MET504**
Shaking machine SE		NF EN 933-8	SITE		**MET505**
Graduated cylinder SE		NF EN 933-8	LABO		**MET506**
Testing piston SE		NF EN 933-8	LABO/SITE		**MET507**
Washing tube		NF EN 933-8	LABO/SITE		**MET522**
Methylene blue test stirrer		NF EN 933-9	LABO/SITE		**MET508**
Automatic blue dispenser			LABO/SITE		**MET509**
Buret 50 ml			LABO/SITE		**MET523**
Climatic condition reproducer	1 value of Temp. in 9 Pts / 3 sec	NF X15-140	LABO/SITE	**MET212**	**MET213**
Chronometer	3 Pts		LABO/SITE		**MET510**
Tachometer	with correction curve		LABO	**MET511**	
Tachometer	Statement of compliance		LABO/SITE		**MET512**
Caliper square	0 < < 300 mm		LABO	**MET001**	**MET004**
Sand angulometer	diameter 12 mm	NF EN 933-6	LABO/SITE		**MET513**
Automatic compactor		NF EN	LABO/SITE		**MET515**
CBR Mould			LABO/SITE		**MET524**
PROCTOR Mould			LABO/SITE		**MET525**
Normal tamper			LABO/SITE		**MET526**
Modified tamper			LABO/SITE		**MET527**
Strike-off screed			LABO/SITE		**MET528**
Los Angeles machine		NF EN 1097-2	LABO/SITE		**MET516**
Set of abrasive charges			LABO/SITE		**MET529**
Micro deval machine		NF EN 1097-1/A1	LABO/SITE		**MET517**
Set of balls			LABO/SITE		**MET530**
Balls for friability test			LABO/SITE		**MET531**
Jar (standard/ballast)			LABO/SITE		**MET532**
Sand absorption cone		NF EN 1097-5/-6	LABO/SITE		**MET518**
Digital thermometer	3 Pts		LABO	**MET202**	**MET206**
Glass pycnometer	500 < < 2000 ml		SITE		**MET519**
Volumetric flask	0 < < 2 litres		LABO		**MET520**
Density vessel	1 < < 30 litres	NF EN 1097-3	LABO		**MET521**

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Services - Metrology

	Equipment	Specific features	Calibration span	Ref.COFRAC calibration certificate	Ref. Report of verification
DIMENSION	Caliper square	Vernier caliper/dial caliper	0-300 mm 0-500 mm 0-1000 mm	**MET001** **MET002** **MET003**	**MET004**
	Indicator	Dial gauge	0-10 mm 0-30 mm 0-50 mm 0-100 mm	**MET005** **MET006** **MET007** **MET008**	**MET009**
		Digital	0-10 mm 0-30 mm 0-50 mm	**MET010** **MET011** **MET012**	**MET014**
	Micrometer	With buttons outside	0-100 mm 0-100 mm 0-200 mm 0-300 mm	**MET013** **MET015** **MET016** **MET017**	
		With buttons inside	0-125 mm	**MET018**	
	Steel gauge block	Unit (class M1)	1 < < 100	**MET019**	
		Box of 47 blocks (class M1)	1 à 100 mm	**MET020**	
	Gauge			**MET021**	
	Ruler		0-300 mm - 5 Pts 0-500 mm - 5 Pts 0-1000 mm - 10 Pts	**MET022**	**MET023** **MET024** **MET025**
	Double plain plug gauge	Unit	2.5 < < 40 mm	**MET025**	
FORCE	Test machine	1 channel in compression 10 Pts	5 - 3000 kN	**MET101**	**MET103**
		1 extra channel compression 10 Pts	5 - 3000 kN	**MET102**	**MET104**
		Dynamometric ring 10 Pts	0.5 - 400 kN	**MET108**	**MET105**
		Pressure gauge plate test 10 Pts	0 - 200 kN		**MET106**
		Force gauge	5 - 50 kg		**MET107**
		Calibration cell	5 - 3000 kN		
TEMPERATURE	Thermometer	Digital	3 Particular pts	**MET202**	**MET206**
		Digital	5 Particular pts	**MET204**	**MET208**
		Glass	3 Pts		**MET209**
		Infrared	2 Pts (60 et 120°C)		**MET210**
	Temp. station	Centrale + 9 PT100 sensors	1 Pts	**MET211**	
	Chamber/cabinet	60 < < 1000 litres	9 Pts	**MET212**	**MET213**
	Thermohygrometer	Digital	3 Pts T et H	**MET215**	
MASS	Weight	Unit	E1	**MET301**	
		Unit	E2	**MET302**	
		Unit	F1	**MET303**	
		Unit	M1	**MET304**	
MISCEL	Wire cloth sieve		0.040< <3.15 mm	**MET301**	**MET501**
	Perforated cloth sieve		4.00< <125 mm	**MET302**	**MET501**
	Aerometer		0.75 l/ 1litre	**MET303**	**MET401**
	Aerometer		5 litres	**MET304**	**MET402**
	Aerometer		8 litres		**MET403**
	SF6 kit				**MET404**
	Sclerometer		Type N/NR		**MET405**
	Sclerometer		Type L/LR		**MET406**
	Anvil		Type N		**MET408**
	Sound meter		1 Pt (94 dB)		**MET409**
	CBR test		1,27 mm/min		**MET410**
	Reinforcement detector				**MET411**
	5 litre mixer		NF EN 196-1		**MET412**
	TAC		NF EN 196-1		**MET413**
	Mould 4 x 4 X 16		NF EN 196-1		**MET414**
	Le Chatelier Mould		NF EN 196-3		**MET415**
	Mortar workability apparatus		NF EN 413-2		**MET416**
	Langavant calorimeter		NF P 15-436		**MET417**
	Setting meter				**MET419**
	Balls and rings				**MET420**
	Penetrometer				**MET421**
	Penetrometer needle				**MET422**
	Abrams cone				**MET423**

* Additional charge for shipping costs for returns of equipment and travel costs for on-site service.
* See us for any other calibration certificate or verification report.

Maintenance/After-Sales Service

Choosing CONTROLAB signifies that you will be able to benefit from a high level of service Quality in the long-term thanks to the competences deployed by the Maintenance and After-Sales Service Department in France and in forty different countries throughout the world.

Through our "functioning safety of your apparatus" culture and our missions in the workshop and on site, we have the will to ensure the aptitude of your investments in terms of equipment to fully assume their functions at all times.

Our interventions take place on Civil Engineering and Mechanical Engineering laboratory equipment.

Proactive, reactive and operational,

the CONTROLAB Maintenance and After-Sales Service Department has resulted from the fusion of the technical departments of :

- **CONTROLAB**
- **PERRIER**
- **LABOTEST**
- **EUROMATEST**
- **INTERCO**

Our competences are used in automatism and in the mechanical, hydraulic, electronic and information technology (software programmes, etc.) fields.

The Maintenance and After-Sales Service Department is based at the CONTROLAB headquarters which is located in the city of Saint-Ouen (Seine-Saint-Denis).

Maintenance/After-Sales Service

Both in France and worldwide, the Maintenance and After-Sales Service Department ensures :

Assistance and service missions :
- commissioning and start-up,
- guarantee follow-up,
- personnel training,
- laboratory pre-certification, etc.

Preventive maintenance missions :
- long-term maintenance contracts,
- inspections, etc.

Specific missions :
- evolution of your equipment,
- special production,
- technical advice, etc.

Repairing missions :
- in-workshop repairs,
- dispatching of spare parts,
- in situ interventions,
- hotline, etc.

To carry these missions through to successful completion, the Maintenance and After-Sales Service Department has, among other resources :

- a fleet of vehicles,
- a workshop fitted with mechanical equipment (lathe, milling machine, drilling machine, grinding machine, etc.),
- an extensive stock of spare parts,
- metrological equipment (force, pressure, temperature reference standards, etc.) attached to national standards by laboratories COFRAC.
- a sub-contractor network,
- IT programming means, etc.

It is also backed up by the Engineering Design Department and the Metrology Department to be able to answer all you requests.

To contact the After-Sales Service Department :

Dial one phone number alone: that of the After-Sales Service switchboard.
Phone : +33 (0)1 49 48 94 67 Fax : +33 (0)1 49 48 94 63 Em@il : sav@controlab.fr

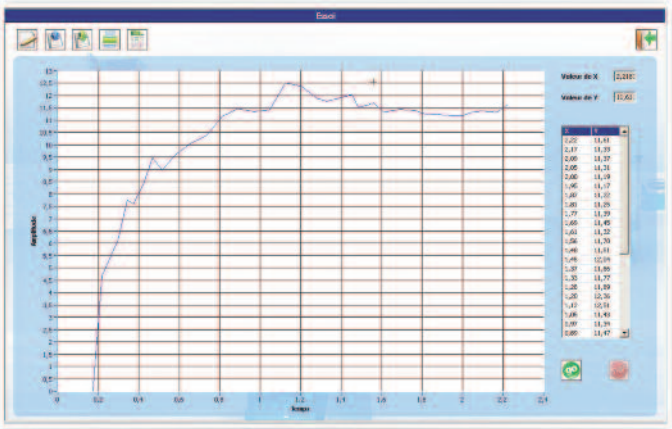
Professionals are on the other end of the line to help you !

Assistance in piloting and operating

All our software is provided for run on Windows© XP / 7.
An IT partner to up to your requirements.

We develop piloting and analysis applications for you that meet test standards and their evolutions.

Our professional staff is at your disposal to advise you and guide you in choosing your software.



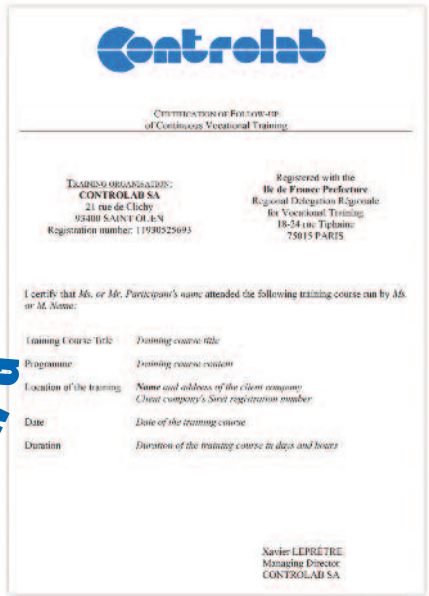
"As a complement, we offer on demand training sessions. Information, personalized advice, etc."

In a constantly evolving environment, your teams need to be continually trained, informed and advised.

Throughout the year, we can organise training courses intended for both well-informed and beginning users so that they will be able to widen their filed of skills.
The content of these training sessions can be personalised.

We are approved for in-service training.

APPROVED CONTINUING TRAINING


Controlab

Certification of Follow-up of Continuous Vocational Training

Training organisation:
CONTROLAB SA
21 rue de Clichy
93480 SAINT OUEN
Registration number: 11930525693

Registered with the
Ile de France Prefecture
Regional Delegation Régionale
for Vocational Training
18-34 rue Tiphaine
75015 PARIS

I certify that Ms. or Mr. Participant's name attended the following training course run by Ms. or M. Name:

Training Course Title	Training course title
Programme	Training course content
Location of the training	Name and address of the client company Client company's Siret registration number
Date	Date of the training course
Duration	Duration of the training course in days and hours

Xavier LEPRÊTRE
Managing Director
CONTROLAB SA

Software Presentation

Cemtech

NEW

A software programme that allows you to communicate via modem with several temperature recorders. It is used for measuring the hydration heat of cements by semi-adiabatic calorimetry (Langavant method) according to standard EN 196-9.

This software enables you to :

- Retrieve data, 10,000 per channel via the modem.
- Display curves
- Make calculations according to the standard
- Draft test reports
- Archive data
- Export data to a spreadsheet (ex: Excel®).

Specifications :

- Designed to operate with the modem and its recorders, up to 4 measuring channels, including 1 reference channel.
- Can be installed on a laptop PC.
- Runs on Windows® 7 / XP.

See us about receviing the demo CD

Software sold only with the Langavant calorimeter Controlab ref: D1225C2 and D1225C4

The product associated with the software can be found on page 58

DidacLab software

NEW

Specially designed to perform the data acquisition of your educational test bench, DidacLab enables student to follow the development of physical phenomena during testing. Depending on the test chosen, the software produces curves and lets you export data to tables such as Excel®.

Software for acquiring data on the following tests :

- Adherence or bonding: EN 12636.
- Compression on cement: EN 196-1.
- Flexure on cement: EN 196-1.
- Puncture (CBR test): EN 13286-47.
- 3- or 4-point flexure: EN 12269-1.
- Shear on wood or on structure.
- Traction on steel, aluminium, copper, brass, plastic or wood.
- Tearing of screws, nails or pegs.
- Flexure on tailed-in beam.
- Flexure on beam equipped with strain gauges.

Software sold only with the educational bench. ref: SDB3600

The product associated with the software can be found on page 212

Software Presentation

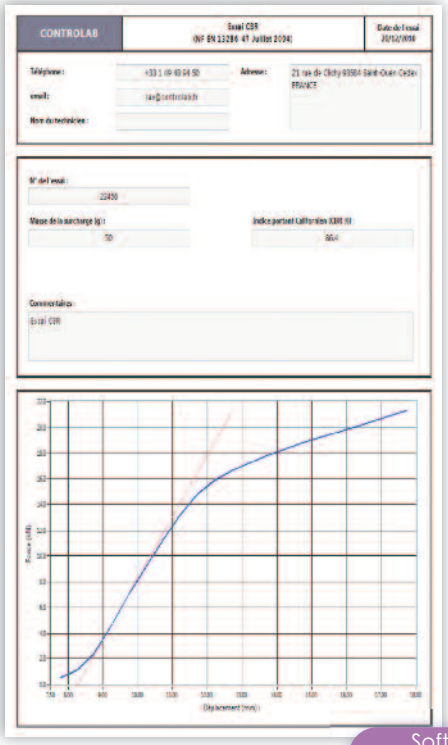
Soils and Road Software

NEW

Very ergonomic and specially developed for each type of test, these software packages serve for control, data acquisition, curve plotting, backup of measurements and exportation to a spreadsheet file (ex: Excel®)

Software packages specially designed for the following tests:

- Tension at constant speed or load factor.
- Compression at constant load or speed factor.
- Simple flexure, flexure on reinforced concrete or natural stone.
- Splitting.
- CBR: NF EN 13286-47.
- Marshall: NF EN 12697-34.
- Hot and cold Duriez : NF EN 12697-12, NF P98-251-1, NF P98-251-4.
- Indirect tension module (Brazilian): B 98-232-3.
- Young Module.



Software sold only with universal-type test machines
ref: C12002-60 and C12004

The product associated with the software can be found on page 180

Logiciel Softomix

NEW

Designed for research laboratories or specific preparations, this software allows you to:

- Define 5 programmes for your automatic mixer.
- Set mixing speeds, addition of sand, addition of water and the alarm at any time.

Software can be used only with the Controlab automatic mixer . Ref: L0032/A2

The product associated with the software can be found on page 60.

Softwares OedoLab Connect and OedoLab Reports

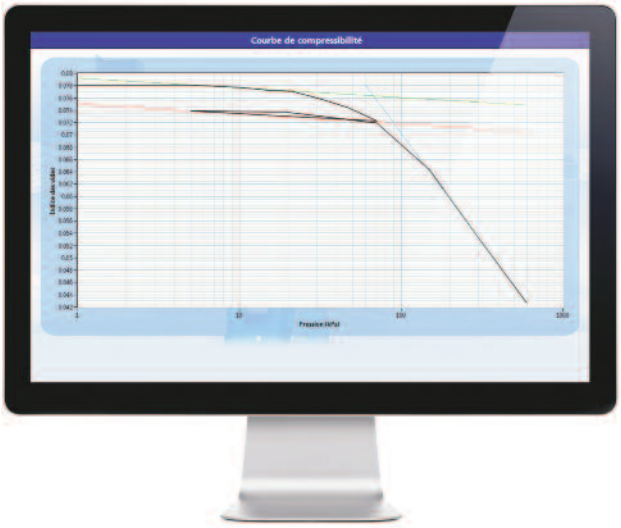
NEW

In connection with one or more oedometers and in compliance with standard XP P94-090-1.

These software packages facilitate :

- Retrieval of data via the acquisition centre.
- Manual test data entry.
- Calculations and curve plotting.
- Editing of test reports according to standards.
- Data archiving.
- Exportationof this data to a spreadsheet (ex: Excel®).

These software programmes are designed to be integrated into your existing apparatuses and new facilities alike. Contact us.



OedoLab Connect is sold only with the oedometer. ref: T0302/01

The product associated with the software can be found on page 136.

Software Presentation

ShearLab Connect and ShearLab Reports Software

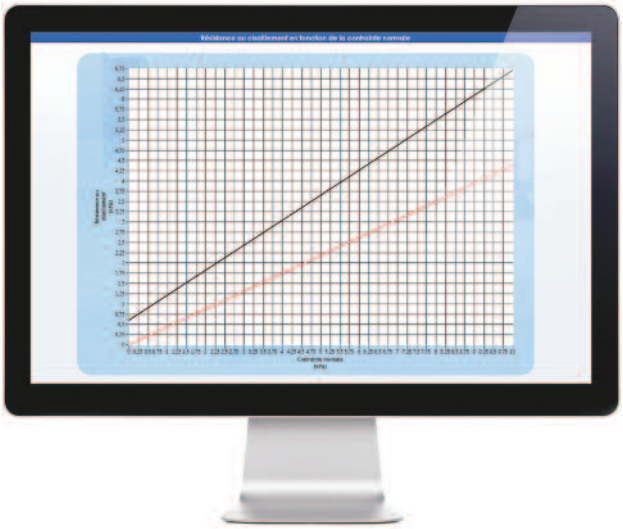
NEW

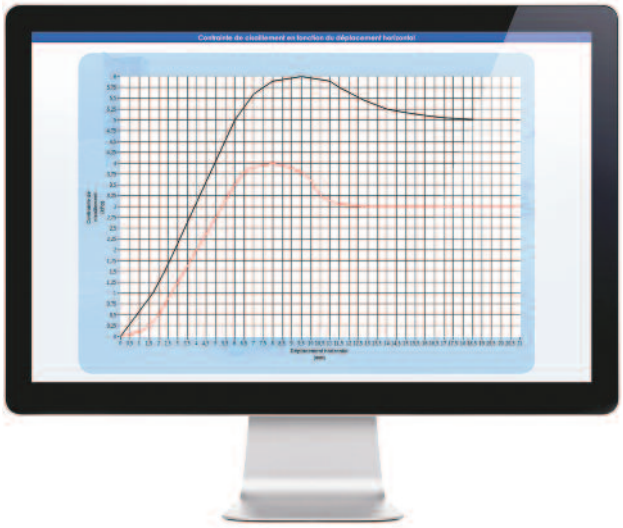
In connection with one or more shearing machines
and in compliance with standards NF P94-071-1 and -2.

These software packages facilitate:

- Retrieval of data via the acquisition centre.
- Manual test data entry.
- Calculations and curve plotting.
- Editing of test reports according to standards.
- Data archiving.
- Exportation of this data to a spreadsheet file (ex: Excel®).

These software programmes are designed to be integrated into your existing apparatuses and new facilities alike. Contact us.





ShearLab Light

Software that enables you to retrieve data from shearing apparatus S0280S and send it to a PC.

- The data can then be saved in text (.txt) or Excel® (.xls) format.
- The Excel format makes it simple to use test results.

Shearlab Connect and Light are sold only with the shearing machine. ref: S0280S

The product associated with the software is found on page 138.

Triaxlab Connect Software

NEW

In connection with your triaxial apparatur and in compliance with standards NF P94-070 et NF P94-074.

Very ergonomic et specially developed for conducting your tests, TriaxLab Connect assists you throughout the different phases (saturation, consolidation and shearing) of each test.

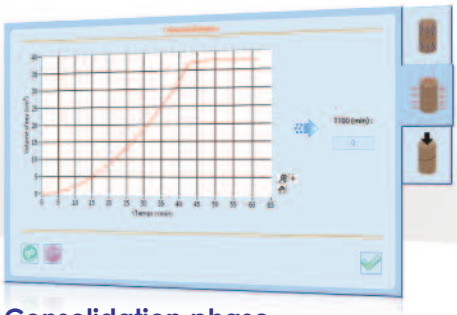
TriaxLab Connect saves the different phases of your tests simultaneously on each cell.

Software sold only with the integrated triaxial test bench (TriaxLab).

The product associated with the software can be found on page 145

Saturation phase

For each level of saturation, TriaxLab Connect retrieves the back-pressure value (Ucp) and calculates the Skempton factor (B).



Consolidation phase

During the consolidation phase of your consolidated-undrained tests with interstitial pressure measurement and your consolidated-drained tests, the curve of the volume of water evacuated as a function of time is displayed.
At the end of this phase, the software calculates the end time of consolidation (T100).

Shear phase

A table with all the values measured allows you to follow the evolution of the shear phase.

For each phase, TriaxLab Connect carries out data acquisition and saves the information about the test in a file in a standard format.
This file can be used both by Controlab's Triaxlab Reports software and by Excel®.

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Software Presentation

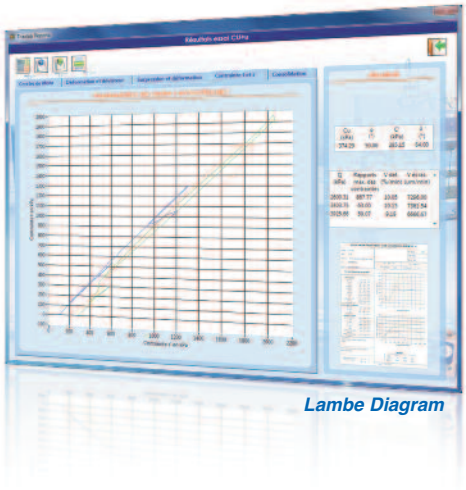
Triaxlab Report Software

NEW

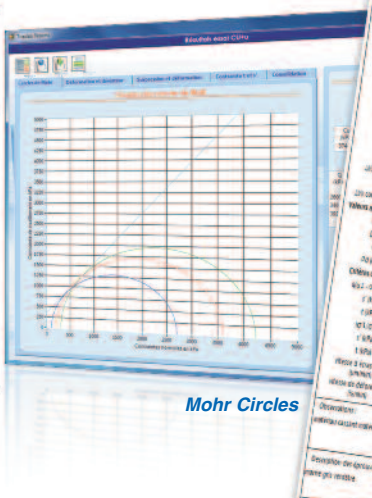
In accordance with standards NF P94-070 and NF P94-074

Specially designed to exploit the results of your triaxial tests, TriaxLab Reports enables the tests to be centralised within the same project for all soil specimens.

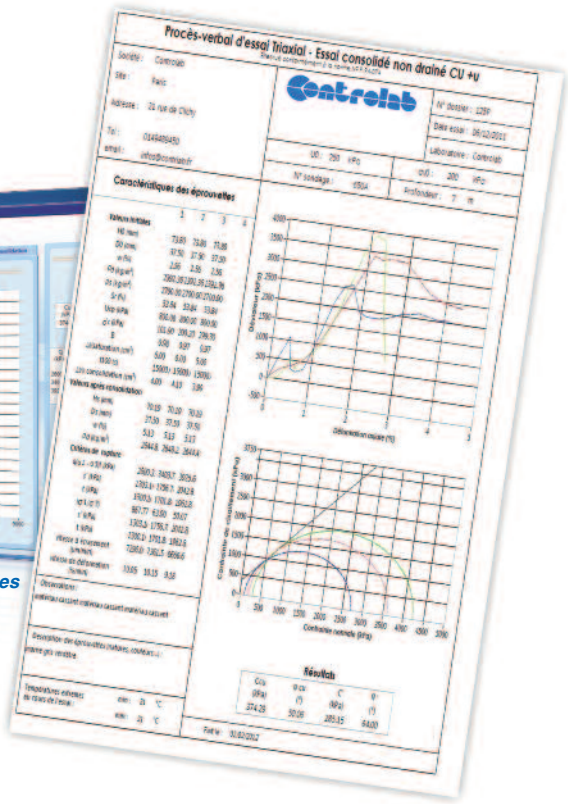
TriaxLab Reports proposes a dual function :
- Either to retrieve the tests files generated by Triaxlab Connect.
- Or to enter your test data manually.



Lambe Diagram



Mohr Circles



CU+u test report

Tests taken into account by the software packages:

Tests	Saturation	Consolidation	Shearing
UU	Undrained	-	Undrained
CU + U	Undrained	Draine	Undrained
CD	Undrained	Draine	Draine

The software makes calculations in accordance with the standard and enables a customised report to be drawn up for each test (UU, CU+u, CD).

In accordance with the report drawn up, TriaxLab Reports will provide you with:
- The deviator curves according to the deformation.
- The Mohr circles for each test as well as the overall tangent.
- The instititial pressure curves according to the deformation.
- The Lambe representation for each test.
- The change in the volume of water expelled during the consolidation phase for each test.

Taurus Software

NEW

Controlling, Recording and analysis of measurement data for plate apparatus according :

ISO 8302, ASTM C177, DIN 52612, DIN EN 1946-2.

Controlling of guarded hot plate procedure according :

ISO 8301, ASTM C518, DIN 52616, DIN EN 1946-3, EN 12664, EN 12667, EN 12939.

Heat flow meter Procedure to run under WindowsÆ XPP / Vista / 7.

- Communication control between the PC and measurement of the device.
- Graphic and/or numeric display of all measured values and intermediate results during the measurement.
- Interface for data export in TXT-format (EXCEL©; Word©).

Software only for use with thermal conductivity measuring instrument.
ref: TA0500

Find the product associated with the software page 234

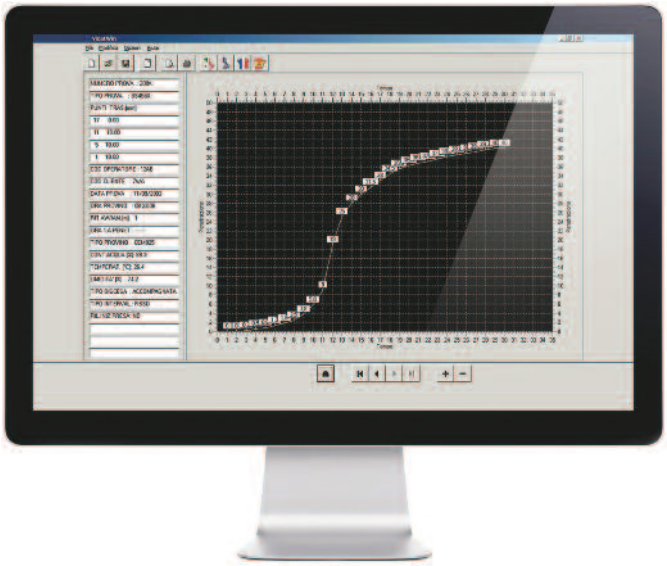
Software Presentation

Vicat Win and Vicat Net

The Vicat Win and Vicat Net software are tools for managing data (table/chart).

The Vicat Win software enables you:
• To download, process and print the test curves and the data directly from the PC.

The Vicat Net enables you:
• To guide, download, process and print the test curves and the data directly from the PC.



Software sold only with the single-station automatic setting meter: ref: L0722

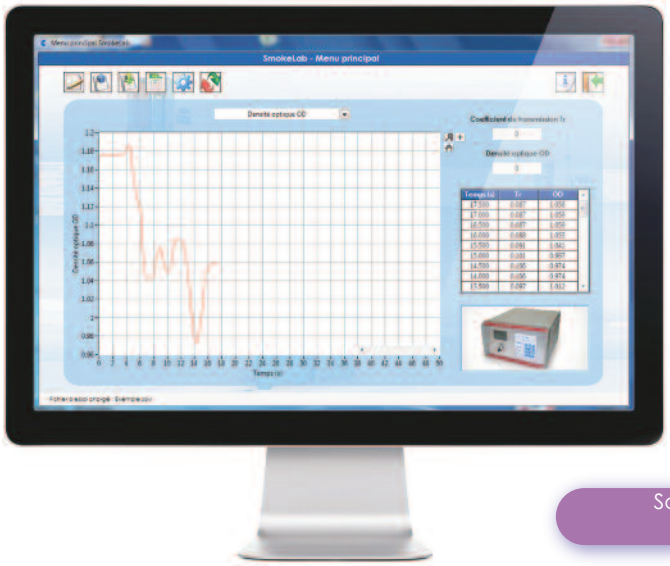
The product associated with the software can be found on page 63

SmokeLab Software

NEW

This easy-to-use software supplied with your smoke analyser enables:

• The change in the transmission coefficient and the optical density to be displayed directly.
• The data to be archived and exported to a spreadsheet program (e.g. Excel®).
• Easier use of the results thanks to the spreadsheet.



Software sold only with the smoke analyser ref: TRDA 302

LaboWin Aggregates

The software programme for control and monitoring of your aggregates.
Simple, quick, user-friendly and in compliance with the standards XP P18-540.

Contact us to receive the demonstration CD

Monitoring of all the tests on aggregates:

Particle-size analysis •
Cleanliness of sands, SE, BV •
Density •
Los Angeles, MDE, CPA •

An archiving and a traceability

Easy to use by woksite and by product, thanks to the file and sampling management pilot.

Assistance in Quality Control

By editing of a Quality graph.

Editing of personalised documents with your logo:

- Product technical sheets,
- Test reports,
- Synthesis sheets by sampling or exportation of data to Word® or Excel®.

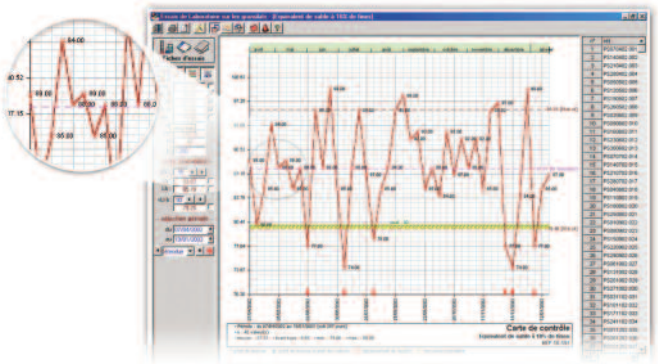
Creation of Product Technical Data Sheet

According to EN 13242

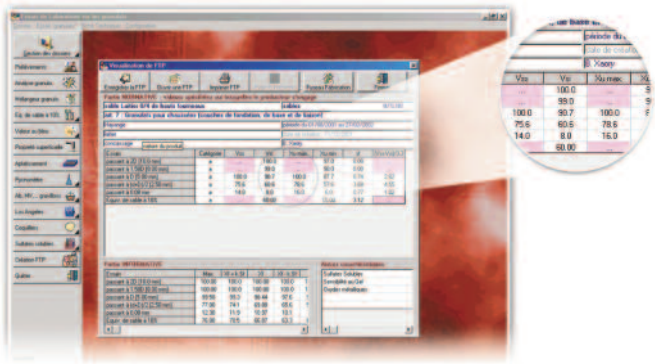
In a very simple manner, in four steps.

Mixer option

For the creation of new products.



Control graph.
Monitoring of aggregate production.



Product technical sheet in compliance with XP-P18-540.

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Synthesis of tests and presentation of results

LaboWin Cébéton

The software for formulation, inspection and monitoring of your concretes
Simple, quick, user-friendly and in compliance with the standards in effect.

Contact us to receive the demonstration CD

An archiving and a traceability :

Simple, by quarry and by product, thanks to the file and sampling management handler.

Formulation of concretes module :

Using the Dreux-Gorisse formulas, this module lets you evaluate your formulations as a function of different criteria: minimum resistance strength, fascicule 65A of the CTCTG, EN 206, etc. You can compare different formulations,transform them in database for monitoring production and edit the fabrication sheets (quantity of products for 1 m3, production cost,etc.).

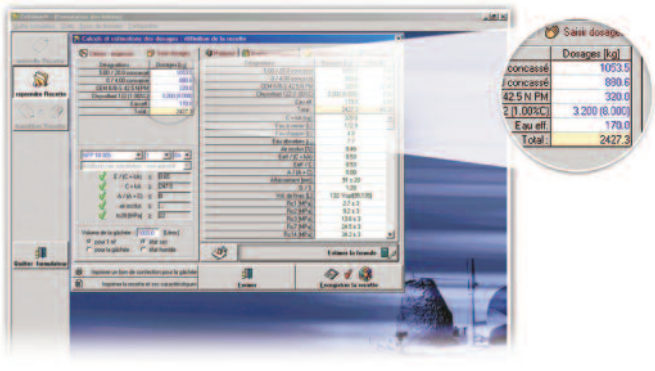
Fabrication or work site monitoring module :

- Monitoring of all the tests that can be performed on fresh and hardened concrete (slump, compressive strength, sclerometric test, etc.).
- Editing of the inspection map allowing you to monitor your fabrications: definition of threshold, visualisation of all of a production.

Editing of personalised documents with your logo.

- Product technical data sheets,
- Test reports,
- Inspection maps.

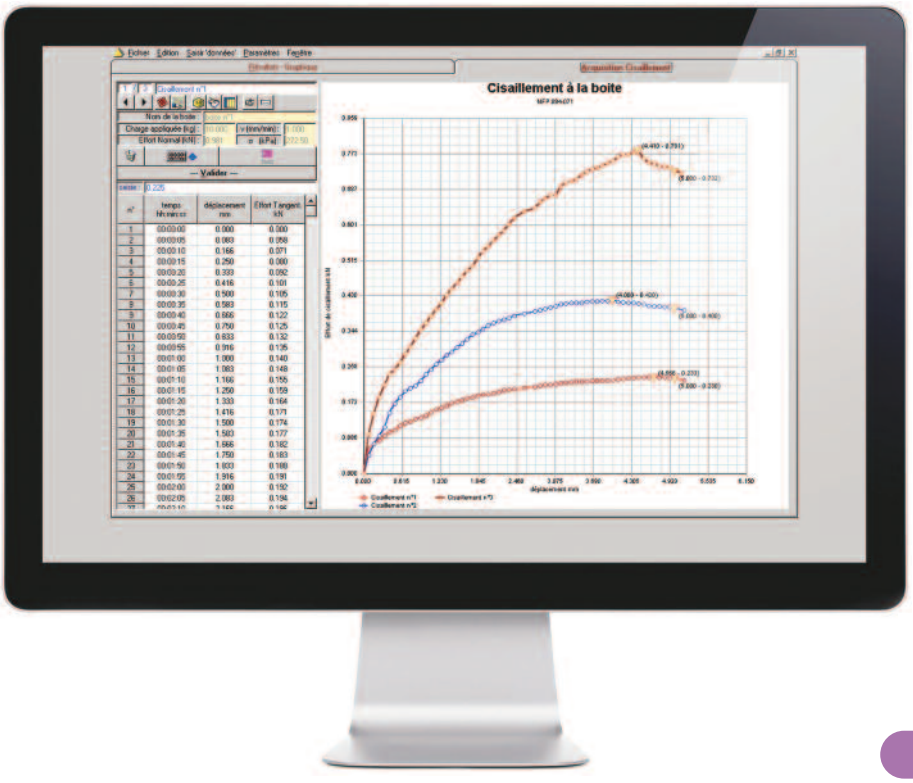
Graph of the different components.



Recap table of your recipe.

LaboWin Soils

The control and monitoring software for your soils
Simple, quick, and user-friendly.



Contact us to receive the demonstration CD

Proctor/CBR

According to NF P94-078, NF P94-093 / EN 13286-2

P0050/LB04

Representation of the Optimum Proctor,
calculation of the CBR index,
complete isoCBR study.

Atterberg limit

According to NF P94-051 et NF P94-052-1

P0050/LB05

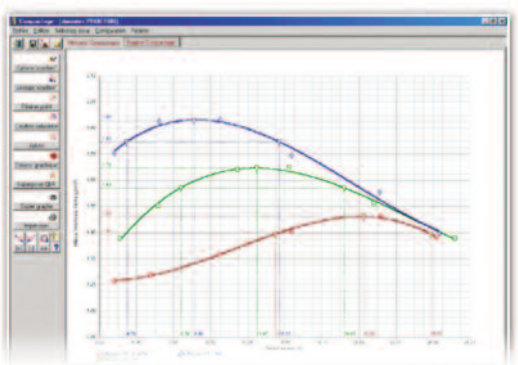
Representation of the WES nonogram,
automatic calculation of the liquid limit (WL),
plastic limit (IP) and consistency index (Ic),
editing of the plasticity chart and determination
of the name of the studied soil.

Shearing at the box

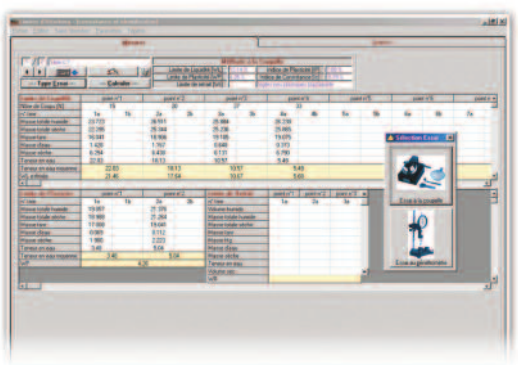
According to NF P94-071

P0050/LB06

- For the automatic acquisition of data of this type of test. (See oedometer page 136)
- parametering of the test as a function of the type of boxes, of tests (consolidated, drained, etc.), of frame, etc.
- monitoring of the evolution of the consolidation and determination of the rate of shear,
- graphic representation of t = f(s),
- calculation of the cohesion (C) and of the angle of internal friction (j),
- tracing of the Mohr Circles and the Coulomb lines.



Optimum Proctor



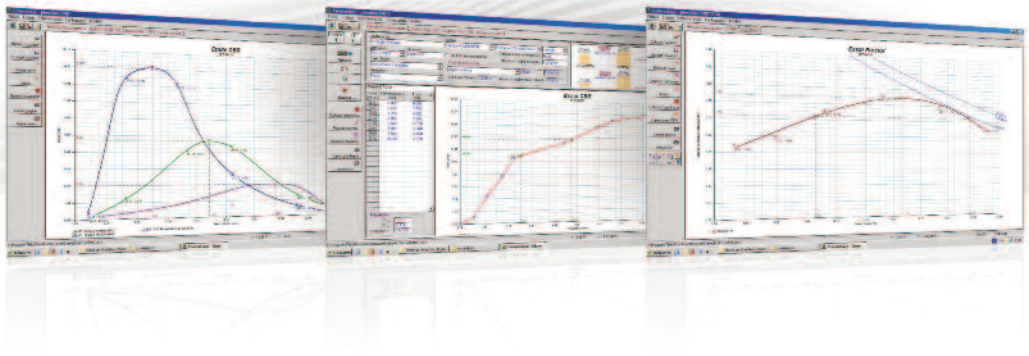
Atterberg limit

Synthesis of tests and presentation of results

Proctor and CBR testing software

According to NF P94-078, NF P94-093, NF P98-231-1

The monitoring and inspection software for your earthwork.



Simple archiving and traceability of your different Proctor/CBR studies thanks to the file and sampling management handler.

CBR index :

- Automatic data entry of the values of the force as a function of sinking, either from the T0105.1S test machine or manually,
- tracing of the curve and correction of the foot of the curve, either automatically or manually,
- calculation of the CBR index.

Contact us to receive the demonstration CD

Optimum Proctor :

- Manual data entry of the different densities as a function of the water content and of the compacting energy,
- automatic tracing and smoothing of the Proctor curve,
- calculation of the optimum Proctor and of the bounds of tolerance.

Complete soil studies Proctor/CBR/isoCBR :

- Printing of reports.
- Personalised with your logo via the software or exportation of the data to Word® or Excel®.

Software for use with the test machine. *réf: T0105.1S*

Find the product associated with the software page 135.

PrisoLab Software

NEW

To automatically determine the time taken for mortars and cements to set.
1 to 6 test sites enable simultaneous or separate tests to be carried out.
Automatic guidance in accordance with the test standard chosen
(NF 196-3, NF P15-431, ASTM C191-65 and C308-34).

Two functioning modes:

- Automatic mode with four pre-programmed standards and management of penetration parameters, depending on the standard chosen.
- Free test mode: up to 86 penetrations.

Functions that may be parametered:

- Mixing time.
- Late start-up.
- Penetration rate.
- Time between two penetrations can be parametered according to a threshold.
- Height at which setting starts.

Characteristics:

- Six display windows with curves in real time.
- Automatic back-up of the test file.
- Test reports drawn up.
- Cement data base.

Software sold only with the multi-station automatic setting meter. *réf: L0720/A*

The product associated with the software can be found on page 64

Aggregates

Table of Contents

Possibility of having your products checked by our laboratory with a view to certification for CE marking

Taking a sample on the site

Thick plastic bags

Designed for the conservation of materials, soils and concrete test specimens.

Ref.	Dim. cm	Thickness µm	Batch
D1551T	25 x 35	110	100 U
D1550T	60 x 40	120	100 U
D1552T	50 x 80①	150	100 U
D1553T	28 x 60②	150	100 U
D1554T	25 x 50	150	100 U

① *With sample identification zone.*

② *Particularly adapted for conservation of 16 cm Ø -32 cm H test specimen*


D1551T

Twister

D1560

To rapidly and solidly close bags.
By a simple traction of the hand it's possible to twist the steel tie around the bag.
- Length : 32 cm.
- Weight : 485 g.


D1560

Samplers

Designed to take a representative sample from a batch.

Sampling Thief

According to EN 932-1

E0021

Composed of a rigid, thick aluminium tube whose front end is cut in a bevel.
- Length : 1 200 mm - Ø 32 mm.
- Weight : 485 g.

Sampling tube

E0020

Suitable for fine aggregates, powder or cement. Made up of two concentric tubes that turn one with respect to the other and permitting the sample to enter into the tube without being able to leave it again.
- Length: 1 450 mm.
- Opening of the slits: 12 mm.


E0020 / E0021

Steel ties

D1561

- Length : 20 cm.

Pack of 1 000 ties.


D1561

Round hand scoop

Réf.	Capa. cc	Dim. (LxW) mm
D1601	325	240 x 80
D1604	500	285 x 100
D1602	1000	335 x 120
D1605	1500	340 x 140
D1603	2600	420 x 160


D1603 - D1602 - D1601

Flat aluminium scoop

Réf.	Capa. cc	Dim. (LxW) mm
D1610	165	210 x 70
D1611	450	310 x 110
D1613	750	340 x 130
D1612	1550	400 x 130

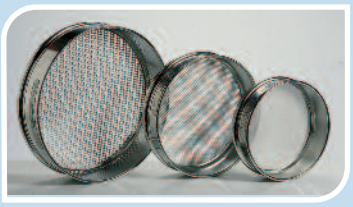

D1612 - D1611 - D1610

Stainless steel hand

See page 238

Sieves

See page 37



Preparation prior to analysis

Aluminium tray with handles, thickness 1 mm.

Ref.	Dim. (LxWxH) mm	Volume litres
D1320	315 x 230 x 60	2,8
D1321	375 x 265 x 60	6


D1320 / D1321

Thick aluminium nestable tray thickness 1,6 mm

- Volume 23 l.
- Mobile handles and label holder.
- Int. dim.: L 600 x W 400 x H 100 mm.
- Ext. dim.: L 640 x W 440 x H 101 mm.
- Weight: 1.7 kg.

Ref.	Volume
D1321/LCPC	23 litres


D1321/LCPC

Moulds in flexible aluminium

NEW

D1317

- Rectangular shape.
- Dimensions : 204 x 92 mm.


D1317

Thick, non-deformable stainless steel tray with handles thickness 0,45 mm

Ref.	Dim. (LxWxH) mm	Volume litres
D1321/25	250 x 180 x 50	2
D1321/30	300 x 225 x 55	3
D1321/35	350 x 250 x 60	4,5
D1321/40	400 x 280 x 65	6,5


D1321/25/30/35/40

Very thick (3,5 mm), aluminium tray with fixed handles

Ref.	Dim. (LxWxH) mm	Volume litres
D1321/01	300 x 240 x 70	4,5
D1321/04	355 x 285 x 70	6,6
D1321/07	405 x 325 x 80	9,2
D1321/09	455 x 370 x 80	12,3


D1321/01/04/07

Ovens

See page 250 to 252

Balances

See page 253 to 255

For the preparation of samples of aggregates it is preferable to use

D0627.294


D0627.294

Other stainless steel trays, see general equipment pages

Preparation prior to analysis

Jar crusher

A0091

For particles smaller than 2 mm.
Designed for crushing all sorts of hard materials such as clinker, stone, etc. into fine powder.

- Silicon carbide jar and set of hard porcelain balls.
- Rotation speed approx. 400 rpm.
- Dimensions: 350 x 710 x 410 mm.
- Weight: 50 Kg.
- Supply: 230V 50Hz.

3 models.

Réf.	Capacity
A0091	300 cc
A0091/1	1 000 cc
A0091/2	1 500 cc

A0091

Jaw crusher

According to UNE 83120

A0092

Particularly adapted for crushing aggregates, ores or other materials.
Delivered with protection system.

- Jaw opening 100 x 60 mm.
- Capacity 100 to 400 kg/h.
- Output granulometry adjustable from 2 to 15 mm.
- Power: 700 W.
- Elec. supply: 230 V 50Hz
- Dimensions: 450 x 1000 x 620 mm.
- Weight: 115 kg.

Accessory
Set of jaws

spare manganese jaws.

A0092/1


A0092

Laboratory jaw crusher

BB0100/MG

For aggregate, concrete, clinker and other materials.
Continuous adjustment of the crushing slit.
Optima and reproducible crushing.

Applications :

- Preparation of granular section for Los Angeles MDE.
- Analysis of concrete.
- Chemical analysis on ore.


BB0100/MG


BB0300/MG

Jaws of different materials according to of applications

(on request) :

- Manganese (standard).
- Tungsten carbide (option).
- Special steel (option).

BB0100/MG/1	Manganese
BB0100/IN/1	Stainless steel
BB0100/1	Carbide

Réf.	BB0100/MG	BB0200/MG	BB0300/MG
Hopper dimensions	60 x 60 mm	100 x 100 mm	150 x 150 mm
Max aggregates	< 50 mm	< 90 mm	< 150 mm
Output granulo.	0 à 40 mm	0 à 40 mm	5 – 40 mm
Yield	200 kg/h	300 kg/h	600 kg/h
Power	750 W	1500 W	3000 W
Elec. supply	380 V	380 V	380 V
L x H x W mm	320 x 960 x 800	450 x 1160 x 900	670 x 1450 x 1600
Weight	137 Kg	300 Kg	700 Kg

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Preparation prior to analysis

Vibrating crushing disk

RS0100

For ultra fine and rapid crushing, without loss of mass and without external pollution of diverse materials: cements, concrete, ore, clinker, scoria, etc.
Extremely short crushing time.
Reproducible results.
Crushing timer with second exactitude.
Dry and wet crushing conditions.
- Input granulometry: 10 mm.
- Fineness after grinding: 40 µm.
- Choice of two speeds: 700 and 1 400 rpm..
- Dimension: L x H x W: 820 x 1070 x 685 mm.
- Weight: 287 kg.

Crushing packings not supplied, available depending on materials to be crushed.
(See table opposite).

Vibrating grinding principle

RS0100

Crushing packings

Different materials according to the type of materials to be crushed.

Type of packings	Vol. ml	Ref.
steel	50	RS0100.01
special	100	RS0100.011
	250	RS0100.012
Agate	50	RS0100.02
	100	RS0100.021
carbide	50	RS0100.03
Tungsten	100	RS0100.031
Oxide	50	RS0100.04
Zirconium	100	RS0100.041

Sample splitter with adjustable collecting pans

According to EN 932-1 et -2 / ASTM C702 / AASHTO T248 / NF P18-553 / BS 812:102,1924:1

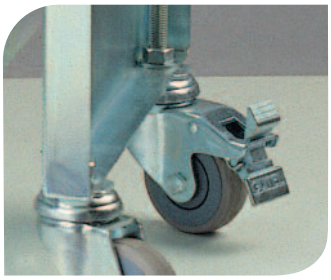
- Hopper volume: 30 litres.
- Adjustable opening from 12.7 to 101.6 mm in 12.7 mm steps.
- Dimensions of a tray: (L x W x H) 610 x 220 x 180 mm.
- Total dimensions: 737 x 483 X 991 mm.
- Weight: 50 kg.

Delivered with a set of two 22-litre trays.

2 models :
standard or assembled with brakes.

Ref.	Modele
A0068	on wheels
A0068/4	Standard

A0068



Model assembled on wheels with brakes to facilitate displacement in the laboratory.

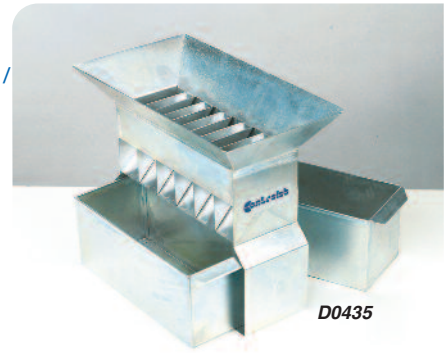
Accessory
Additional tray

A0068/1

Sample splitter with fixed collecting pans

According to EN 932-1 et -2 / ASTM C702 / AASHTO T248 / NF P18-553 / BS 812:102,1924:1

Made of stainless steel or painted steel.
Designed for sorting dry materials to obtain a representative sampling taken on a large quantity of materials.
- Delivered with 2 trays.



D0435

Ref.	Diff. mm	Nber of passages	Material	Hopper dim. LxW (cm)
D0432	6,3	12	stainless steel	9 x 5
D0434.1	12,7	12	stainless steel	17 x 4,5
D0434.2	19	12	painted	35 x 25
D0435	25,4	12	painted	32 x 12
D0436.1	50,8	8	painted	42 x 13
D0437	63,5	8	painted	52 x 16

Ref. Tray sup.	Tray volume litres	Tray dim. L x W x H (cm)
D0431/1	0,25	10 x 5 x 5
D0432/1	0,27	11 x 5 x 5
D0434/1	0,45	18 x 5 x 5
D0435/2	6,4	33 x 14 x 14
D0436/2	8,4	43 x 14 x 14
D0437/1	13,5	53 x 18 x 14
D0434/2	5,6	26 x 15 x 14

Measurement of the water content

Calcium carbide moisture meters

For rapid measurement of water content of aggregates, soils or other pulverulent materials.
• Measurement range: from 0% to 20%.

Speedy model

T0020.1

With analog manometer with direct readout of water content.
Delivered in a plastic case.
• Sample weight: 26 g.

T0020.1

Common moisture meter consumables :

Bottle of reagent

T0021.1	450 g

(calcium carbide).
Box: 450 g.

Box of bulbs

T0023/R011	20 U
T0023/R01	100 U

Standard model

T0023.1

"Economical" with analog manometer and direct readout of water content.
• Sample weight: 20, 50 or 100 g.

Electronic model

T0023.2

With digital display of water content (0.1% precision) and temperature.
• Sample weight: 10, 20, 50 or 100 g.

Electronic model with printer

T0023.3

Idem electronic model.
Delivered with printer for editing a report.

T0023.1

T0023.2 et 3


Moisture meters delivered with transport case

Supplied with :

• 20 bulbs of calcium carbide.
• Spring balance
• Steel balls.
• Transport case and accessories

Electronic moisture meter

Micro-lance type

T0020.2

Without sampling, directly on-site, the apparatus needs only to be planted into the material to be tested, the measurement of the moisture content in % is directly displayed on the liquid crystal screen of the case. A 5-point calibration is associated with the high frequency sensor, managed by a microprocessor for better precision. Work site or laboratory instrument for aggregates of from 0 to 10 mm only.


Cruciform-head sensor


T0020.2
Digital display control box

"Frying stove" method

According to NF P94-049-2 and EN 1097-6

Used to determine the water content weight of a material sample.


V0173.2

Stove

V0173.2

340 mm with handle.


V0173.11

Worksite burner

V0173.11

Using propane or butane gas, large heating surface with 3 stopcock manifold.
• Power: 9 200 W.
• Weight: 8.5 kg.


V0173.1

Worksite burner

V0173.1

Using propane or butane gas, dismountable set with tripod.
• Burner: Ø 90 mm.
• Power: 8 200 W.
• Weight: 3.8 kg.

Find our ovens and microwaves in our general equipment pages.

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Densities

Apparent

Bulk density measures
According to EN 1097-3

C0165CE à C0168CE

C0167/1

Ref.	Capacity (L)	Material	Handle	Size of aggregates
C0165CE	1	Stainless steel	No	< 4mm
C0166CE	5	Stainless steel	No	< 16mm
C0167CE	10	Stainless steel	Yes	< 31,5mm
C0168CE	20	Stainless steel	Yes	< 31,5mm
According to EN 12350-6 C0167/1	10	Painted steel	Yes	< 31,5mm

Plastic

Ref.	Cap.	Dmc
C0166/2*	1	4
C0166/0	2	4

Absolute

Air pycnometer
According to ASTM D5550-6

D0450

Rapid and reliable method to determinate the absolute density, the water content and the porosity of aggregates.
The apparatus includes:
1 one-litre tank, 1 pressure chamber with incorporated pump, 1 calibrated precision manometer.
Delivered with a calibration curve and a user's manual.
- Dimensions : 280 x 200 x 420 mm.
- Weight: 8.5 kg.

D0450

Accessories
Standard calibration block

D0450/1

Frame for hydrostatic weighing

V0084

Used with hydrostatic weighing balances.
The weighing of the sample in the air and then in water is facilitated by the crank that permits raising the water tank.
- Dim.: 510 x 510 x 1150 mm.
- Weight: 50 kg.

Perforated plate basket
According to EN 1097-6

D0440/1

Perforations of 3 mm.
Dim. : Ø 200 mm - H 180 mm.
Weight: 580 g.

Cradle

D0440/2

Cradle for holding 15x15 cubes or cylindrical 16x32 test specimens to be used with the hydrostatic weighing rack **V0084**.

V0084 + D0440/1

Sand pycnometer

S0147

Pycnometer for measurement of the density of sands and fine aggregates.
1 000 ml glass bottle and aluminium cap.

S0147

Sand absorption cone with pestle
According to EN 1097-5, EN 1097-6

D0440

For determination of the densities, the absorption coefficient and the water content of sands.
- Weight: 350 g.

D0440

2 litres cylindrical conserver

C0166.1	2 litre conserver
C0166.11	Glass sheet

Made of glass with ground edge for absolute density of aggregates.
Glass sheet for conservation.

C0166.1 - C0166.11

Find our balances pages 253 in 255

Actual

Glass pycnometer

According to EN 1097-6 et -7 / EN 12390-7 / BS 812:2,1881:14
ASTM C127,C128,D854 / AASHTO T84 / DIN 12039
NLT 154

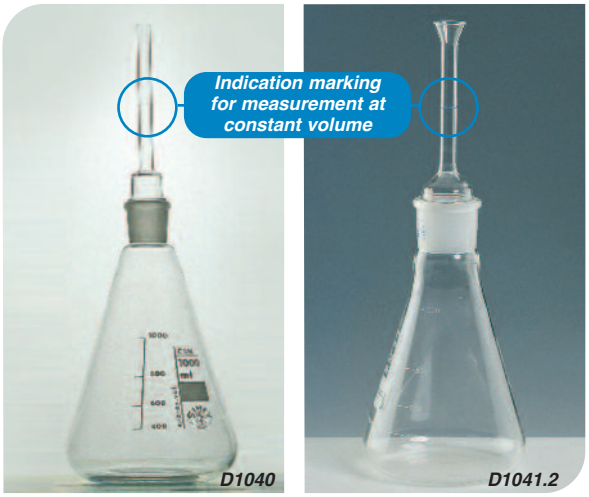
Used to determine the absolute density of an aggregate.
Composed of an Erlenmeyer flask and a capillary tube with marking.

With narrow throat Ø 26 mm - H 39 mm.

Ref.	Capacity ml
D1040	500
D1041	1000
D1042	2000

With wide throat Ø 40 mm - H 45 mm.

Ref.	Capacity ml
D1041.4	500
D1041.2	1000
D1041.3	2000



Thick glass pycnometer

According to EN 1097-6 and -7 / EN 12390-7
BS 812:2,1881:14 / ASTM C127,C128,D854 / AASHTO T84
DIN 12039 / NLT 154

Used to determine the absolute density of an aggregate.

Ref.	Capacity ml
D1041.41	500
D1041.21	1000
D1041.31	2000
D1041.71	5000

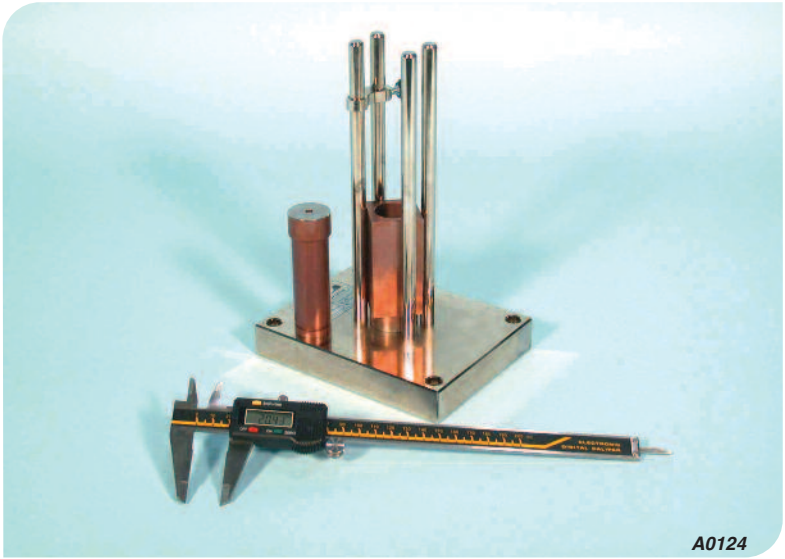
Volumes of the empty containers

RIGDEN voids ratio apparatus

According to EN 1097-4

A0124

This apparatus permits measuring the quotient of the intergranular voids volume existing between compacted dry fines, and that of the container occupied by these fines.
Composed of two guide columns, a piston and a Ø 25 mm. cylinder.
• Weight: 4 kg.



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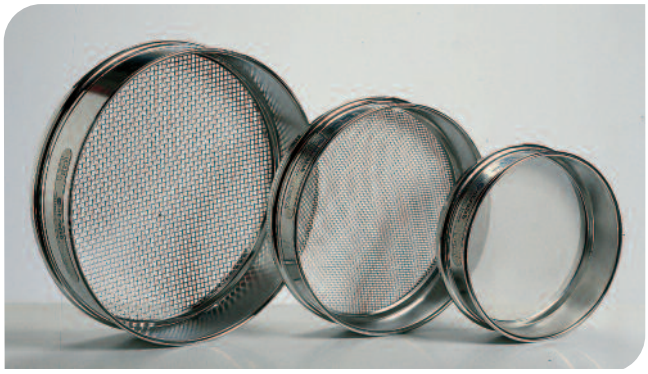
Particle size analysis



Our sieves fit into any other normalized sieve of standard fabrication.

Canvas woven granulometric analysis sieves Ø 150, 200, 250, 315, 400 and 457 x 660 mm

In order to ensure compliance with standards **EN 933-1** and **EN 933-2**, all our sieve sheets are the subjects of a verification of the opening of the mesh and of the diameter of the wire. A certification of conformity which includes the sieve number, engraved on its body, is established as well as the indication of the mean of the openings and of the mean of the diameters of the wires.
Fine meshes can be supplied with reinforced sheet of 0.5 mm. or 1 mm.

Galvanized steel perforated plate sieves

These sieves replace the woven wire with metal sieves for openings included between 4 mm and 125 mm.
They are also in compliance with standards **EN 933-1** and **EN 933-2**. Each numbered sieve is supplied with a declaration of conformity according to standard **EN 933-2**.

«The CONTROLAB advantages»

CE marking
Possibility of having your products checked by our laboratory with a view to CE certification
+
EN 933-1 and EN 933-2 standards
+
All our sieves are controlled according to the NF ISO 3310-1 standard Certificate of conformity
+
All our sieves are available in ASTM and BS standards, contact us.

O-ring

Ref.	Diameter
D0155/2.1	200
D0155/25.1	250
D0155/3.1	315

Special O-ring

B0184/R02 — Diameter 200

Solvent resistant, for sieve column mounted on automatic extractor.

References of Canvas woven granulometric analysis sieves

Example for ordering :

Sieve opening 0.400- Ø 200 - H 25 mm.: **Ref. D0260/2A.1**

Other openings available on request.

Open mm	Ref. Ø / Ref. ouv.	Ø 200 H 25 /2A.1	Ø 200 H 55 /2B.1	Ø 250 H 55 /25.1	Ø 315 H 77* /3.1	Ø 400 H 77 /4.1	457x660 H 75 /5.1
0,040	D0250						
0,050	D0251						
0,063①	D0252						
0,080①	D0253						
0,100①	D0254						
0,125①	D0255						
0,160	D0256						
0,200	D0257						
0,250	D0258						
0,315	D0259						
0,400	D0260						
0,500	D0261						
0,630	D0262						
0,800	D0263						
1	D0264						
1,25	D0265						
1,60	D0266						
2	D0267						
2,5	D0268						
3,15	D0269						

① Supplied with reinforcement sheet, on request, add the letter "**R**" to the reference.
✱ 55 mm. height on request

References of Galvanized steel perforated plate sieves
(bottom and lid see next page)

Open mm	Ref. Ø / Ref. ouv.	Ø 200 H 55 /2B.1C ✖/2B.2C	Ø 250 H 55 /25.1C ✖/25.2C	Ø 315 H 77 /3.1C ✖/3.2C	Ø 400 H 77 /4.1C ✖/4.2C	457 x 660 H 75 /5.1C ✖/5.2C
4	D0270					
4,5	D0270 ✖					
5	D0271					
5,6	D0271 ✖					
6,3	D0272					
7,1	D0272 ✖					
8	D0273					
9	D0273 ✖					
10	D0274					
11,2	D0274 ✖					
12,5	D0275					
14	D0275 ✖					
16	D0276					
18	D0276 ✖					
20	D0277					
22,4	D0277 ✖					
25	D0278					
28	D0278 ✖					
31,5	D0279					
40	D0280					
45	D0280 ✖					
50	D0281					
56	D0281 ✖					
63	D0282					
71	D0282 ✖					
80	D0283					
90	D0283 ✖					
100	D0284					
112	D0284 ✖					
125	D0285					

Particle size analysis

Accessories for sieving :

Ref.	Ø 200	Ø 250	Ø 315	Ø 400
Receiver	D0152/2B.1	D0152/25.1	D0152/3.1	D0152/4.1
Cover	D0153/2B.1	D0153/25.1	D0153/3.1	D0153/4.1

D0407/0W

Accessories for wet sieving :

Composed of a cover with flow nozzle.

Ref.	Diameter mm
D0407/0W	Ø 200
D0407/1W	Ø 250
D0407/W	Ø 315

Ultrasonic system for cleaning sieves Ø 200 mm

D0405.1

Permitting thanks to its strength rapid and very effective cleaning.
Composed of a cylindrical stainless steel tank.
- Timer: 0 - 15 minutes or continuous.
- High frequency generator 2 x 240 W.
- Power: 220 V single-phase.
- Int. dim.: Ø 240 mm - H 130 mm.
- Weight: 5 kg.

Support for sieve

D0405.1/R02 ***Ø 200 mm***

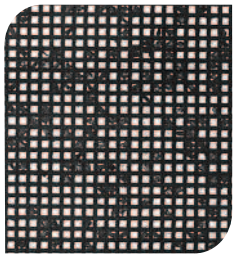
Ultrasonic system for cleaning sieves with Ø 315 mm

D0405.2

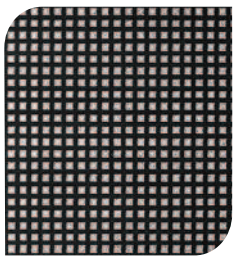
Idem D0405.1,
but with 600 W high frequency generator.
Delivered with cover.
Int. dim.: Ø 408 mm - H 200 mm.
Weight: 12 kg.

D0405.1

Delivered without support or cover



Before cleaning



After cleaning

D0405.2/R03

Accessory for D0405.2 Universal support

D0405.2/R03

With three centering rings for Ø 200, 250, 315 mm.

Specially designed brushes for cleaning sieves

V0179/2 ***Double nylon / brass***

V0179/3 ***Nylon***

Common accessory for the two ultrasonic models Detergent 1 l

D0405.1/R03

Flakiness sieves

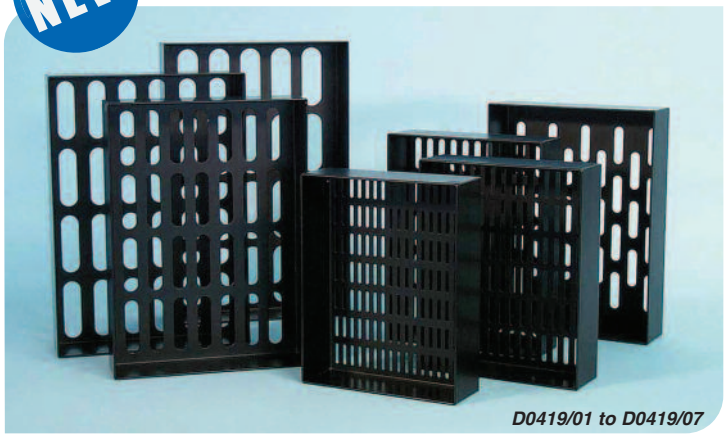
According to BS 812

Used to determine friability of aggregates.
Manufactured from heavy steel sheet.
They have dimensions as specified by Standards.
Weight: 15 Kg.

Available in the following size openings :

Ref.	Slot width mm	Slot length mm
D0419/01	4,9	30
D0419/02	7,2	40
D0419/03	10,2	50
D0419/04	14,4	60
D0419/05	19,7	80
D0419/06	26,3	90
D0419/07	33,9	100

NEW



D0419/01 to D0419/07

Particle size analysis

Electronic sieving machine

D0407.03

Movement generated by an electric engine.
Available sieves Ø 200 to 315 mm.
- Elect. supply: single-phase 230 V 50 Hz.
- Weight: 24 kg.

Spindle

D0411/R08.2

Plastic thumb wheel

D0411/R08.1

Cast iron thumb wheel (quick fixing)

D0411/R08

D0407.03

Electromagnetic vibration laboratory sieving machine for dry or wet sieving of Ø 200 to 315 mm sieves

D0407.1 **Ø 200 to 315 mm**

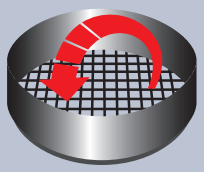
Suitable for eleven Ø 200 mm and 250 mm or 9 sieves Ø 315 mm.
Ensures particularly high performance sieving thanks to :
- A vibrating movement of the base ensuring a tridimensional displacement of the sample on all of the sieve surface.
- An intermittent sieving.
- An adjustable vibration amplitude.
- A digital counter, indispensable for repetitive analysis, indicating the set time with precision.
- Elect. supply: 220 V 50 Hz.
- Dimensions: 380 x 440 x 1 080 mm.
- Weight: 67 kg.

D0407.1

" Other version "
Electromagnetic vibration sieving machine for Ø 200 à Ø 400 mm sieves

D0407.2 **Ø 200 to 400 mm**

- Dimensions: 430 x 460 x 1150 mm.
- Weight: 80 kg.



Tridimensional displacement

Top-of-the-range sieving machine

With amplitude adjustment by control of acceleration.
- For Ø 200 mm or 315 mm sieves.
- Programmable recording function.
- Command by PC.
- Sieving movement in three dimensions.
- Entirely electronic adjustment.
- Digital display of all functions.
- Max material load of 6 kg.
- Automatically adjustable amplitude, approx. Maximum of 2 mm.
- Timer from 0 to 99 minutes or in continuous mode.
- Elect. supply: 243 V single-phase 50 Hz.

D0407H

Ref.	Ø Sieve mm	Nbr of sieves	Weight Kg
D0407H200	200	14	34
D0407H315	315	18	38

Sound proofing box

D0407/N

D0407/N

Particle size analysis

ROTAP sieving machine

For tamis Ø 200 and 250 mm sieves.

- Very high performance sieving thanks to the combination of a rotation movement (approx. 285 rpm) and a beating action (150 c/minute).
- Digital display timer to determine sieving time from 0 to 99 minutes.
- Power: 230 V - 250 W.
- Weight: approx. 80 kg.

Model B

D0407/R

For six sieves : Ø 200 mm - H 55 mm.

Model B2

D0407/R1

For six sieves : Ø 250 mm - H 77 mm.

Delivered without sieves *D0407/R*

Large capacity sieving machine for 457 x 660 mm sieves

A0061TP	***with protection***
A0061	***without protection***
A0061IN	***with sound proofing box***

For sieving large quantities of materials (stone, sand, gravel, etc.).
The apparatus can hold 30 litres of samples (that's to say 60 to 70 kg of aggregates).
Perfect for preparing granular sorting in large quantity.
The sieving machine can hold six sieves and a reception tray.

- Elect. supply: 220 V single-phase 50 Hz.
- Dimensions: 585 x 790 x 850 mm.
- Net weight: 170 kg.

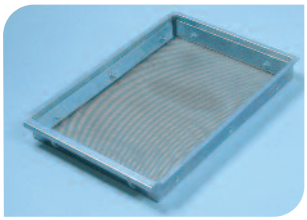
Protective grid and electric safety system.

A0061IN

Accessories 457 x 660 x 75 mm sieve

D0250/5.1 to D0284/5.1

with interchangeable sheet.



D0250/5.1 à D0284/5.1

Air flow sieving machine "Alpine"

According to EN 933-10

D0411.1

Granulometric analysis appliance by flow of air.
The good dispersion of the product to be analysed resulting from the flow of air coming from the nozzles permits measurements going up to 10 microns with micro-precision sieves.

Analysis range:

- 20 microns at 4 mm with Ø 203 mm sieves
- 10 to 30 microns with Ø 75 mm sieves

Composed of:

- Incorporated computer for processing of data.
- Micro electronic system with pause function.
- Display of depression on the screen.
- Two RS232C outputs.
- 230 V single-phase 50 Hz electrical supply.

D0411.1

Particle size analysis / Form factor

Air Jet Sieving Machine Laboratory type

According to EN 933-10

D0411.1M

The system by the current of air from the jets allows measurements up to 5 microns with microprecision sieve.

- Analysis range: 5 microns to 4 mm with 200 mm diameter sieve.

The package includes :

- The digital electronic microprocessor panel can adjust:
  - The sieving time from 0 to 99 minutes.
  - The vacuum range from 0 to 99 bar.
  - The calibration function.

The unit is supplied complete with aspirator device, plexiglass cover, filter cartridge, 5 collecting plastic bags, accessories.

NOTE: sieves must be ordered separately.

- Power supply: 230V 1ph 50/60 Hz.
- Dimensions: 450 x 600 x 400 mm.
- Weight: 25 kg approx.

D0411.1M

Bar grid sieves

According to EN 933-3 / NF P18-561 / NLT 354

D0418 **Complete set of bar grid sieves**

For determining the flattening coefficient of aggregates.

To ensure better rigidity, the bars are made of stainless steel Ø 5, 8 or 10 mm according to the spaces between them.

- Dimensions: 250 x 250 mm.
- Weight: approx.: 4 kg.

D0418/01 à 13

Ref.	Ø mm
D0418/01	2,5
D0418/02	3,15
D0418/03	4
D0418/04	5
D0418/05	6,3
D0418/06	8
D0418/07	10
D0418/08	12,5
D0418/09	16
D0418/10	20
D0418/11	25
D0418/12	31,5
D0418/13	40
A0078/R09 For micro-deval test	9,5

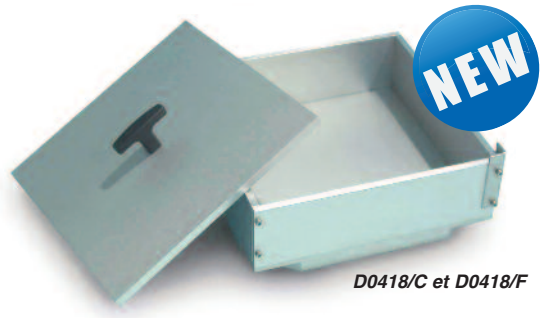
Accessories for grid sieves:

Cover

D0418/C

Receiver

D0418/F



D0418/C et D0418/F

MT0005U

Complete set Double smooth plug gauges

According to EN 933-3

MT0005U **Complete set**

Used to inspect the conformity of the opening of bar grid sieves.
14 asymmetrical plug gauges of diameters included between 2.5 mm and 40 mm.
Each plug gauge is treated, rectified, identified by a number and delivered with a COFRAC calibration certificate.
Verification of conformity is immediate:
one end of the plug gauge passes between the bars, while the other can not.

A0072

Shape gauge

According to EN 933-4,933-5,933-7 / DIN 4226 / CNR N.95 / NLT 354

A0072

For determination of the shape factor of aggregates.
Range included between 0 and 200 mm.

- Weight: 500 g.

Automated blue test

Semi-automatic machine for methylen blue test

According to EN 933-9 / NF P94-068

T0054

This appliance measures by spectrophotometry the quantity of blue injected into the solution until the clay is saturated.
After having prepared the solution, the operator starts the measurements and the test runs automatically.
A cleaning and calibration cycle, essential between each measurement, is incorporated into the appliance.

Appliance control box

For accurate tests that can be reproduced and repeated,
The operator is available during the entire test.

T0054

Characteristics :
- Direct reading of the result.
- Measuring by spectrophotometry.
- Automated process.
- Test suitable for aggregates from 0 to 4 mm.
- Automatic calibration before each test
- Enables MB, MBF and VBS tests to be carried out.
- Easy to use.
- Sample prepared manually.
- Cleaning of the circuit and calibration.
- Test started, measurement taken.
- The blue value and automatic stop displayed.
- Temperature for use: from 5 to 40°C
- Power 500 W.
- Power supply: 240 V single phase.
- Dimensions: 530 x 390 x 230 mm.
- Weight: 15 kg.

Equipment supplied :
- A measuring unit
- 1 beaker of 500 ml
- A 500 500 ml bottle for the methylen blue
- A flask of powdered floculant
- A flask for the floculant.
- Methylen blue
- A 100 litre bag
- A pipe stand.

Required equipment not supplied :
- An agitator. (REF : **T0052.1/R99** or **T0052.1/R99E**)

Test set up

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Smear tests

Apparatus for methylene blue test
According to NF P94-068 / EN 933-9

T0052.1/R99E

Agitator, version 2,
with digital tachymeter.

Accessories :

Single standard agitator

T0052.1/R01

Agitator with tachymeter only

T0052.1/R01E

Digital tachymeter

D3040.5

Simple and accurate measurement of rotational speeds.
Automatically Store the last values max/min.
- 5 digit LCD display.
- Dimensions: 160 x 72 x 37 mm.
- Weight: 300 g.

Version 1, complete
Avec agitateur standard

T0052.1

with blades, with variable speed, preadjustment at 400, 600 or 700 rpm, stand, joint and Ø 70 mm propeller.

Version 2, complete
With agitator with blades and digital tachymeter, integrated

T0052.1E

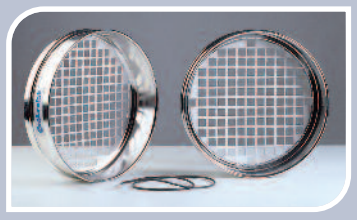
for adjustment between 15 and 2 000 rpm, stand, joint and Ø 70 mm propeller.

Agitator propeller

T0052.1/R021 **Ø 70 mm**

T0052.1/R021

Sieves
See page 37



Sieve ref Ø 150 mm	Open mm
D0252/15.1	0,063
D0267/15.1	2

Detailed content of the apparatus for methylene blue test	Ref. of each article
• Agitator with blades, with variable speed alone, with stand	T0052.1/R99
• or agitator with blades, with tachymeter alone, with stand	T0052.1/R99E
• Burette, 50 ml	T0052.1/R04
• Stand and accessories for burette	T0052.1/R08
• 3 packs of 100 filtres, Ø 90 mm	T0052.1/R05
• Glass rod, Ø 8/300 mm	T0052.1/R03
• Beaker, 2 000 ml	D1076.1
• Beaker, 3 000 ml	T0052.1/R10
• Square tank, 150 mm x 150 mm	T0052.1/R11

Weighing scales
See pages 253 to 255

D0627.019

Apparatus for preparing the methylene blue solution

According to EN 933-9

	Réf.
① Balance 200 g /0.01 g	D0627.018
② Beaker cover	D1106
③ Spatula	D1635
④ Glass beaker 1 L	D1075
⑤ Heating magnetic agitator	B0074M
⑥ Plastic wash bottle	D1537
Gauged vial 1 L	D1062
Magnet (diameter 7)	D0448/1

Agitator without heating

According to EN 933-9 / NF P94-068

D0448/B

Accessories :

Automatic 0-10 ml distributor

According to EN 933-9 / NF P94-068

T0052.2/0

- Precision: < 0.1% of read value.
- Adjustment by 0.2 ml steps.
- Delivered without bottle.

T0052.2/0

T0052.12

Dried kaolinite

According to EN 933-9 / NF P94-068

T0052.12	***500g***

- Pot 500 g.

Indispensable accessory : Yellow glass bottle for automatic distributor

Ref.	Capacity
T0052.2/1	0,5
T0052.2/2	1
T0052.2/3	2,5

T0052.2/1/2

T0052.11

Medicinal methylene blue

T0052.11	***100g***

- Pot 100 g.

Indispensable Accessory : 100 Filtres

According to EN 933-9

Ref.	Ø
T0052.1/R05.90	90
T0052.1/R05.185	185

T0052.1/R05/R051

T0052.1120

Capsule of methylene blue

According to EN 933-9

T0052.112	***6U***	***10g***
T0052.113	***6U***	***5g***

Kit of 6 doses of methylene blue for rapid putting into solution.

Cleanliness tests

Sand equivalent complete set

According to EN 933-8

T0050.1VP

Version 1 complete

With plastic bottle.

- 4 transparent test tubes.
- 4 plugs.
- 4 measurement recipients.

Delivered in compartmentalized cardboard transport box.

T0050.1VP

List accessories	Ref. of each article
• 1 plastic bottle, 5 litres	T0050.1/R071
• 1 Ø 61/50 plug for plastic bottle siphon	T0050.1/R081
• 1 transparent test tubes, with graduations from 100 to 380 mm	T0050.1/R01
• 1 plugs	T0050.1/R02
• 1 measurement recipients, capacity 200 cm3	T0050.1/R03
• 1 funnel	T0050.1/R04
• 1 end piece alone without wash tube	T0050.1/R05E
• 1 stopcock	T0050.1/R051
• Complete irrigator tube (irrigator tube + stopcock + end piece)	T0050.1/R05
• 1 siphon +2m flexible tube	T0050.1/R06
• 1 adjusted piston	T0050.1/R09
• 1 spatula	T0050.1/R10
• 1 stainless steel spoon	T0050.1/R11
• 1 mm ruler of 500 mm	T0050.1/R12
• 1 test tube brush	T0050.1/R13

Control accessories :

T0050.1/R15

Tripod support for bottle

T0050.1/R15

T0050.1/R14

Volumetric dosing apparatus

T0050.1/R14

125 cc ± 1 cc.

T0050/7.1

Cleansing solution without formaldehyde with bleach.

According to EN 933-8

T0050/7.2

Cardboard box of 15 doses of 125 ml.

Cleansing solution with formaldehyde

T0050/7.1

Cardboard box of 15 doses of 125 ml.

Sand equilivalent sample shaking machine

According to EN 933-8

T0050MP

Electrical machine to shake the sand equivalent specimens with protective cover.

- Agitation of 90 cycles in 30 s.
- Range of motion: 20 cm.
- Adjustable timer integrated.
- Automatic stop at cycle end.
- Quick grip system of the sample.
- Protective cover with plexiglass window and electrical safety system complies with safety regulations.
- Power supply: 230 V 50 Hz single phase.
- Dimensions: 700 x 350 x 420 mm.
- Weight: 30 kg.

T0050MP

Accessories of control :

Electronic table meter

D1230.7

Counter / decounter with chronometer + clock.
Two giant adjustable displays:

- 1st display: chronometer from 0 seconds to 23h 59min 59s
- 2nd display: 2 countdowns from 23h 59min 59s to 0 seconds.
- 2 specific 1 mm rings, 2 memories.
- Dimensions : 140 x 95 x 15 mm.

D1230.7

D1235.3

Manual counter

D1235.3

- Manual counter has 4 digits.
- Increment.
- Reset.
- Retaining ring thumb.
- Dimensions: 47 x 25 mm.
- Housing ABS.

Magnetic dial gauge holder

MT3416010

Suitable for any type of comparator.

- Attraction strength: 80 kg.
- Rod Ø 16 mm.

Supplied wood case.

Angularity

A0097

Delivered with two cones

Sand angulometer

According to EN 933-6

A0097

Used to measure the angularity of sands used in road layers or in concrete.

- Dimensions: 250 x 400 x 1 000 mm.
- Weight: 9 kg.

Accessories :

Spare cone

A0097/R01	**Ø 12 mm**
A0097/R02	**Ø 16 mm**

Sand reference standard

According to EN 933-6

A0097/01

For verification of flow time of cone Ø 12 mm.

Wear resistance tests

Machine for accelerated polishing of gravel

According to EN 1097-8, EN 1341, EN 1342,EN 1343 / BS 812:114 / NF P18-575 / CNR N.105

D0525

The purpose of the test is to supply a relative measurement showing the aptitude of the road gravel to become polished under the effect of traffic.
The test is composed of two phases :
- Polishing action with the machine.
- Measurement of final roughness with SRT rocking friction tester (see below).

The apparatus includes :
- One test sample holder wheel with accessories.
- Two systems for abrasives.
- Four preparation moulds.
- One receptor tray.
- Dimensions: 1800 x 820 x 600 mm.
- Weight: approx. 175 kg.


D0525

Accessories : Abrasive

Ref.	Kg
D0525/13	25
D0525/12	50

- Fine (25 kg)
- Coarse (50 kg)

Preparation mould

D0525/8

Skid resistance tester

According to EN 1097-8, EN 1338, EN 1339, EN 1341, EN 1342, EN 1436 / ASTM E303 / BS 812:114 / CNR N.105,140 / NF P18-578,P18-575 / NLT 174 / ASTM E103

B0190

For the determination of the roughness of asurface and of the accelerated polishing coefficient.
It includes:
- Skid resistance tester.
- A measurement ruler.
- A thermometer -10 to 110°C.
- The transport case.
- The feet are sold separately.
- Weight: 32 kg.


B0190

Accessories : Metal base with vice

EN 1097-8

B0190/4

Set of two « roughness »

EN 13036-4

B0190/1

- Dim.: 76.20 x 25.4 x 6.3 mm.

Set of two « CPA »

EN 1097-8

B0190/2

- Dim.: 31.75 x 25.4 x 6.35 mm.

Marble plate

B0190/6

Micro Deval machine

According to EN 1097-1, EN 13450 / NF P18-572, NF P18-576 / UNE 83115 / CNR N.109

Réf.	Type
A0078	Standard
A0078TP	Avec protecteur
A0078TPS	Avec insonorisation

For determination of the quality of aggregates, delivered with protective grid and electric safety system.
- Digital indication of test time and backup saving of time passed in case of power cut.
- Elect. supply: 220 V single-phase.
- Power: 850 W.
- Dimensions: 1 000 x 450 x 920 mm.
- Weight: 130 kg.

Possibility to combine long and short cylinders.


A0078TPS

Accessories : Stainless steel balls

Ref.	Ø
A0078/R011	10 mm
A0078/R03	18 mm
A0078/R04	30 mm
A0078/R02S	Friability

Spare jar

A0078/R02	Standard
A0078/R022	For ballast

Bar grid sieve

According to EN 1097-1

A0078/R09

9.5 mm spacing gaps to control the 10 mm balls according to the standard.

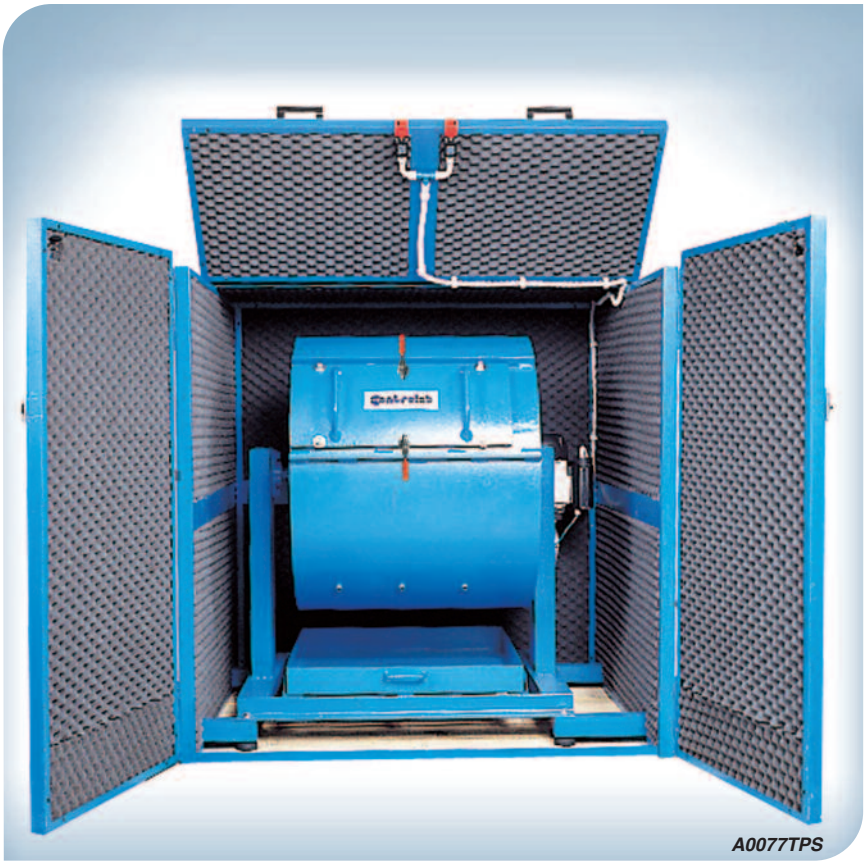
Impact resistance test

Los Angeles machine

According to EN 1097-2, EN 12697-17, EN 12697-43
ASTM C131 / NF P18-573 / UNE 83116 AASHTO T96
CNR N.34 / NLT 325

A0077TP

Los Angeles machine for measuring the aggregates' resistance to wear.
The equipment includes:
- A hollow cylinder of 711 mm diameter supported by a double rotating shaft.
- 12 round balls of 47 mm diameter in Z 30 C1 3 grade steel.
- An electric motor rotating the cyclinder at 30 to 33 rpm.
- A tray enabling the materials to be collected at the end of the test.
- A fast closing system.
- A rev counter which stops the motor at the end of the cycle.
- A protective cage and an electric safety system in accordance with EC directives.
- Power supply: 230 V 50 Hz single phase.



A0077TPS

A0077TPS model delivered with sound insulation housing and rapid closing.

Other version Los Angeles machine

A0077TPS

Idem model A0077TP, but with sound insulation enclosure.

With a rapid closing system as standard.

Accessory :

Set of 12 additional balls

A0076/1

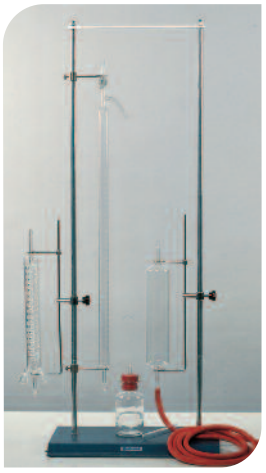
Dynamic fragmentation machine

According to BS 812 / NF P18-574

A0080

For determination of the impact resistance strength of aggregates.
- Dimensions: 445 x 300 x 880 mm.
- Weight: 60 kg.

A0080



D0570 et D0571

Dietrich-Frühling calcimeter

According to NF P94-048

D0570

Apparatus for determination of $CaCO_3$ content, particularly in limestone and marl.
Measurement of CO_2 released during the reaction between the calcium carbonate present in the sample and a hydrochloric acid solution.
- Dim.: 400 x 200 x 1 100 mm.
- Weight: 10 kg

Bernard calcimeter

According to NF P18-508

D0571

Apparatus for determination of carbonate content.
- Dim.: 400 x 200 x 1 100 mm.
- Weight: 10 kg.

Tests to determine the chemical properties of the aggregates

Determination of the water- soluble chlorides by the Volhard method

Test reference: T0055.01	*According to EN 1744-1*	
Appliances included in the test reference	Sieve 16 mm	**D0276/25.1C**
	Weighing scales 1 kg 0,1	**D0627.039**
	g Shakers	**D0409**
	2 glass filtering funnels Ø100 mm	**D1183**
	Filter suitable for the fine porosity funnel	**D1183/F**
	Filter suitable for the medium porosity funnel	**D1183/M**
	Conical flask with stopper	**D1059**
	100 ml	**D1059/02**
	250 ml conical flask with stopper	**D1157**
	Pipette 100 ml Piplab 100 ml	**D10505**
	Burette 50 ml 0.1 ml	**T0052.1/R04**
	Heating agitator	**B0074M**
	1 250-ml beaker	**D1073**
	1 1-l beaker	**D1075**
Chemical products (excl. test ref.)	1 litre AgNO3 0,100 mol/l	**D0814/1**
	1 litre NH4SCN approx. 0.1 mol/l	**D0853/1**
	1 litre HNO3 approx 6 mol/l	**D0809**
	3,5,5-trimethyl-1-hexanol of technical quality without cloride	**D0824/2**
	500-ml NH4FE(SO4)2.12H2O	**D0834/G**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Fanned oven	***See general equipment pages***
	Weighing scales10 kg 1 g	**D0627.113**
	Splitter with adjustable channels	**A0068**
Accessories depending on the choice of transfer	2 5-litre plastic bottles with stoppers for grit or light weight aggregates	**D1524**
	2 plastic bottles with stoppers for sand of 2 litre	**D1523**
	2 plastic bottles with stoppers for fillers : 300 ml phial	**D1060/1**

Tests to determine the chemical properties of the aggregates

Determination of soluble chlorides in water by potentiometric analysis

Test reference: T0055.02	***According to EN 1744-1***	
Appliances included in the test reference	Sieve 16 mm	**D0276/25.1C**
	Shakers	**D0409**
	Pipette 5 ml	**D1151**
	Pipette 50 ml	**D1154**
	Piplab 50 ml	**D10504**
	Burette 50 ml 0.1 ml	**T0052.1/R04**
	Weighing scales 1 kg 0.1 g	**D0627.039**
	Heating agitator	**B0074M**
	1 beaker 250 ml	**D1073**
	1 beaker 1 L	**D1075**
	pH meter 0.1 pH	**D1850/W1**
Chemical products (excl. test ref.)	AgNO3 0.100 mol/l of 1 L	**D0814/1**
	NaCl 0,02 mol/l of 1 L	**D0827/2**
	HNO3 approx 6 mol/l of 1 L	**D0809**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Fanned oven	***See general equipment pages***
	Weighing scales 10 kg 1 g	**D0627.113**
	Splitter with adjustable	**A0068**
	Potentiometer for determining the concentration in ion chloride with: • 1 measuring electrode either silver (chlorinated) or selective with chloride ion. • 1 reference electrode either with mercury sulfphate or double combination silver/silver chloride, with electrolyte without chlorides in the outside chamber.	**D1820**
Specific appliances (excl. test ref.)	2 5-litre plastic bottles with stoppers for grit or lightweight aggregates	**D1524**
	2 2-litre plastic bottles with stoppers for sand	**D1523**
	2 plastic bottles with stoppers for fillers : 300 ml phial	**D1060/1**

Determination of water-soluble salts by the Mohr method

Test reference: T0055.03	***According to XP P18-581***	
Appliances included in the test reference	Sieve 16 mm	**D0276/25.1C**
	Pipette 25 ml	**D1153**
	Piplab 25 ml	**D10503**
	Burette 50 ml 0,1 ml	**T0052.1/R04**
	Weighing scales 1 kg 0.1 g	**D0627.039**
	100 ml conical flask with stopper	**D1059**
Chemical products (excl. test ref.)	1-litre AgNO3 0,100 mol/l	**D0814/1**
	de 1 L K2CrO4	**D0823/3**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Fanned oven	***See general equipment pages***
	Weighing scales	**D0627.113**
	Splitter with adjustable channels	**A0068**
Specific appliances (excl. test ref.)	2 5-litre plastic bottles with stoppers for grit or lightweight aggregates	**D1524**
	2 1-litre plastic bottles with stoppers for sand and grid	**D1522**

Tests to determine the chemical properties of the aggregates

Determination of the water-soluble sulphate content

Test reference : T0055.05	*According to EN 1744-1*	
Appliances included in the test reference	Sieve 16 mm	**D0276/25.1C**
	Shaker	**D0409**
	Heating agitator	**B0074M**
	Beaker 600 ml	**D1074**
	Weighing scales 200 g	**D0627.01**
	2 glass filtering funnels Ø100 mm	**D1183**
	Filters suitable for the medium porosity funnel	**D1183/M**
	Pipette 5 ml	**D1151**
	Pipette 50 ml	**D1154**
	Piplab 50 ml	**D10504**
	Dessicator	**D1110**
	Sucking pump	**D2010**
Chemical products (excl. test ref.)	HCL	**D0808**
	BaCl2	**D0829**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Fanned oven	***See general equipment pages***
	Weighing scales	**D0627.113**
	Splitter with adjustable channels	**A0068**
	3–l muffle oven	**TT0005.311**
Specific appliances (excl. test ref.)	2 -litre plastic bottles with stoppers for grit or lightweight aggregates	**D1524**
	2 2-litre plastic bottles with stoppers for sand	**D1523**
Accessories depending on the choice of transfer	Filtering crucible in sintered silica with porosity 4, approximately. Ø35 mm and H40 mm	**TT0055/R21**
	Calcination crucible Ø35 mm and H40 mm with a constant masse at 1100°C for this calcination crucible, close-textured filters for glass funnel Ø100 mm	**TT0055/R22**

Fanned oven

Tests to determine the chemical properties of the aggregates

Determination of the total sulphur content

Test reference : T0055.06	According to EN 1744-1	
Appliances included in the test reference	Sifter 16 mm	D0276/25.1C
	Tam Sifter is 0	D0255/25.1
	2 100-ml test tubes	D1003
	Heating agitator	B0074M
	2 500-ml beakers	D1074
	Weighing scales 200 g 0,1 mg	D0627.01
	2 glass filtering funnels Ø100 mm	D1183
	Filters suitable for the medium porosity funnel	D1183/M
	Burette 50 ml 0, 1 ml	T0052.1/R04
	Pipette 5 ml	D1151
	Pipette 50 ml	D1154
	Piplab 50 ml	D10504
	Glass rod with flattened end	D1190/1
	Thermostatic bath	D1409.25
	Dessicator	D1110
	Sucking pump	D2010
Chemical products (excl. test ref.)	HCL	D0808
	H202 cc 30~	D0811/0
	500 mg methyl red	D0840/2
	500 ml ethanol	D0889/1
	Ammonia	D0803.3
	BaCl2	D0829
Specific appliances (excl. test ref.)	Crusher	A0092
	Hood	D3601 + D3601/R03
	Fanned oven	*See general equipment pages*
	Weighing scales	D0627.113
	Splitter with adjustable channels	A0068
	3-l muffle oven	TT0005.311
	pH meter 0.1 pH	D1850/W1
	Jar mill	A0091
Specific appliances (excl. test ref.)	Filtering crucible in sintered silica with porosity 4, approximately. Ø35 mm and H40 mm	TT0055/R21
	Calcination crucible Ø35 mm and H40 mm with a constant masse at 1100°C for this calcination crucible, close-textured filters for glass funnel Ø100 mm	TT0055/R22

A0068

Tests to determine the chemical properties of the aggregates

Determination of the water-soluble sulphates

Test reference : T0055.07	*According to EN 1744-1*	
Appliances included in the test reference	Sieve 16 mm	**D0276/25.1C**
	Sieve 0.125 mm	**D0255/25.1**
	2 100-ml test tubes	**D1003**
	Heating agitator	**B0074M**
	2 500-ml beakers	**D1074**
	2 1-l beakers	**D1075**
	Weighing scales 200 g 0.1 mg	**D0627.01**
	Glass filtering funnel Ø100 mm	**D1183**
	Filters suitable for the medium porosity funnel	**D1183/M**
	1-l conical flask with stopper	**D1059/03**
	Burette 50 ml 0.1 ml	**T0052.1/R04**
	Chronometer	**D1230.7**
	Pipette 5 ml	**D1151**
	Pipette 50 ml	**D1154**
	Piplab 50 ml	**D10504**
	Glass rod with flattened end	**D1190/1**
	Dessicator	**D1110**
	Sucking pump	**D2010**
Chemical products (excl. test ref.)	HCL	**D0808**
	1-l AgNO3 0,100 mol/l	**D0814/1**
	500 mg red methyl	**D0840/2**
	500 ml ethanol	**D0889/1**
	Ammonia	**D0803.3**
	BaCl2	**D0829**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Fanned oven	***See general equipment pages***
	Weighing scales 10 kg 1g	**D0627.113**
	Splitter with adjustable channels	**A0068**
	3-l muffle oven	**TT0005.311**
	pHmeter 0.1 pH	**D1850/W1**
	Jar mill	**A0091**
Accessories depending on the choice of transfer	Filtering crucible in sintered silica with porosity 4, approximately. Ø35 mm and H40 mm	**TT0055/R21**
	Calcination crucible Ø35 mm and H40 mm with a constant masse at 1100°C for this calcination crucible, close-textured filters for glass funnel Ø100 mm	**TT0055/R22**

A0091

Tests to determine the chemical properties of the aggregates

Rapid assays of the water-soluble sulphates (recycled materials) by the spectrophotometry method

Test reference : T0055.09	*According to XP P18-581*	
Appliances included in the test reference	Sieve 4 mm	**D0270/25.1C**
	Base	**D0152/25.1**
	600-ml beaker	**D1074**
	1-l beaker	**D1075**
	2-l beaker	**D1075/1**
	Heating agitator and bar	**B0074M2**
	2 chronometers	**D1230.7**
	Ordinary filters Ø200 mm	**D1800/200**
	pHmeter strips	**D1866.2/R01**
	Automatic 10-ml pipette	**D10502 / D1152**
	Watch glass	**D1106**
	Weighing scales 1 kg 0,1g	**D0627.039**
Chemical products (excl. test ref.)	Nitric acid	**D0809**
	BaCl2	**D0829**
Specific appliances (excl. test ref.)	Crusher	**A0092**
	Hood	**D3601 + D3601/R03**
	Spectrophotometry and equipment for determining the quantity of sulphates at a wavelength of (500 ± 0) nm	**D1868/M**
	Weighing scales 10 kg 1 g	**D0627.113**

Determination of the acid-soluble chloride salts

Test reference : T0055.10	*According to EN 1744-5*	
Appliances included in the test reference	2 glass filtering funnels Ø100 mm	**D1183**
	Filters with pores of about 20 µm adapted to the funnel	**D1183/F20**
	2 250-ml beakers	**D1073**
	5 glass rods	**T0052.1/R03**
	Pipette 1 ml	**D1150**
	Pipette 5 ml	**D1151**
	Pipette 10 ml	**D1152**
	2 graduated flasks	**D1062**
	100 ml conical flask with stopper	**D1059**
	250 ml conical flask with stopper	**D1059/02**
	Piplab	**D10502**
	Weighing scales 200 g 0.1 mg	**D0627.01**
	Reagent bottle	**T0052.2/2**
	Burette 50 ml 0,1 ml	**T0052.1/R04**
Chemical products (excl. test ref.)	1-l AgNO3 0,100 mol/l	**D0814/1**
	1 litre NH4SCN approx. 0.1 mol/l	**D0853/1**
	1 litre HNO3 approx 6 mol/l	**D0809**
	3,5,5-trimethyl-1-hexanol of a technical quality without chlorides	**D0824/2**
	500 ml NH4FE(SO4)2.12H2O	**D0834/G**
Specific appliances (excl. test ref.)	Hood	**D3601 + D3601/R03**

Cements / Mortars

Table of Contents

Specific surface area

Blaine air permeability apparatus

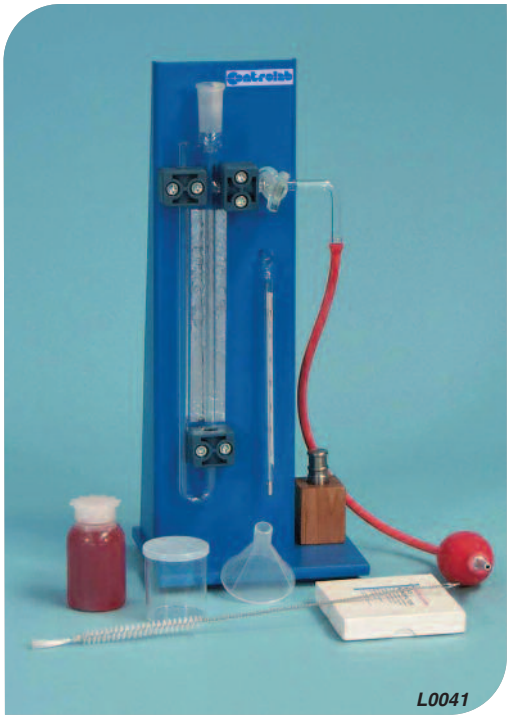
According to EN 196-6

L0041

Supplied with all accessories as well as a bottle of manometric liquid and 1 000 filter pads, without reference standard cement.

Standard type

With rubber suction bulb and measurement of time between identification marks with a chronometer. (not included)
• Weight: 8 kg.



L0041

Common accessories for the 3 types of Blaine air permeability apparatus

Manometric liquid 200 ml bottle
L0041/2

Bag of reference standard cement
L0041/4.1S

1 000 filter pads Ø 12.7 mm
L0041/3

Complete cell
L0041/R09

Perforated disk
L0041/R02

Piston only
L0041/R04

Funnel

L0041/R10	Plastic
L0041S/01	Copper

L0049

Automatic Blaine air permeability apparatus with integrated software

According to EN 196-6

L0049

Completely automatic measurement cycle with control of tightness between cell and manometer, detection minimum liquid level, drain value. The equipment calculates automatically the masse that you have to test, determines the constant K according to standard cement.

General characteristics :

- Chronometer precision: 10 ms.
- Display with pull-down menu and bargraph.
- Assistance for determination of apparatus constants.
- RS 232 output.
- Digital keyboard and function keys for parametering.
- Dimensions: 280 x 325 x 410 mm.
- Weight: 10 kg.

Digital Blaine air permeability apparatus with display of time measured

According to EN 196-6

L0041S

Digital Blaine air permeability apparatus with automated test cycle, electric suction pump, photoelectric cells for detection of levels, chronometer start-up and stop.

After the test, automatic display of the time measured.
Precision of time displayed: 0.01 second.
Apparatus delivered complete with:
- 1 funnel.
- 1 complete cell with grid.
- 1 bottle of manometric liquid.
- 1 bag of 1 000 pads of filter paper.

• Elect. supply: 230 V single-phase 50 Hz.
• Power: 20 W.
• Dimensions: 300 x 250 x 510 mm.
• Weight: 8 kg.

L0041S

Specific accessories for 3 types of "Blaine"

Blaine manual tube
L0041/R01

Pear for manual Blaine
L0041/R08

Tube for semi-auto Blaine
L0041S/R01

Tube for auto Blaine
L0049/R32

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Tests on powders

Density

Funnel with sieve and filter

According to EN 196-6

L0060.1

For measurement of the apparent density of cements.
- Delivered with funnel with sieve, straight edge and 1 litre machined plastic gauge measurer.
- Dimensions: 350 x 350 x 520 mm.
- Weight: 3 kg.

L0060.1

L0060/EN

Appareillage de densité apparente

According to EN 459-2 / DIN 1060

L0060/EN

Delivered complete with 1 litre recipient and closing valve.
- Dim.: H 500 - Ø 180 mm.
- Weight: 5 kg

Identification

Rapid identification of cements

According to XP P15-466

D1866.1

Apparatus for recognition of cements, including :
- 6 graduated test tubes, 20 ml.
- 1 test tube holder.
- 6 plugs for tubes.
- 1 wash bottle, 250 ml.
- 1 dropping glass bottle for nitric acid.
- 1 dropping glass bottle for silver nitrate.
- 2 magnetic stirring bars.

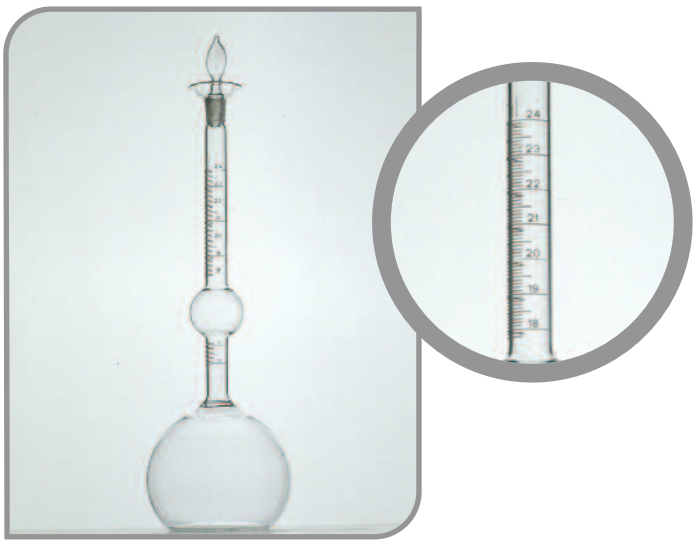
D1866.1

Accessories
Nitric acid

D0809 1l

Silver nitrate

D0814 25g



Le Chatelier Volumenometer

According to EN 196-6 / ASTM C188

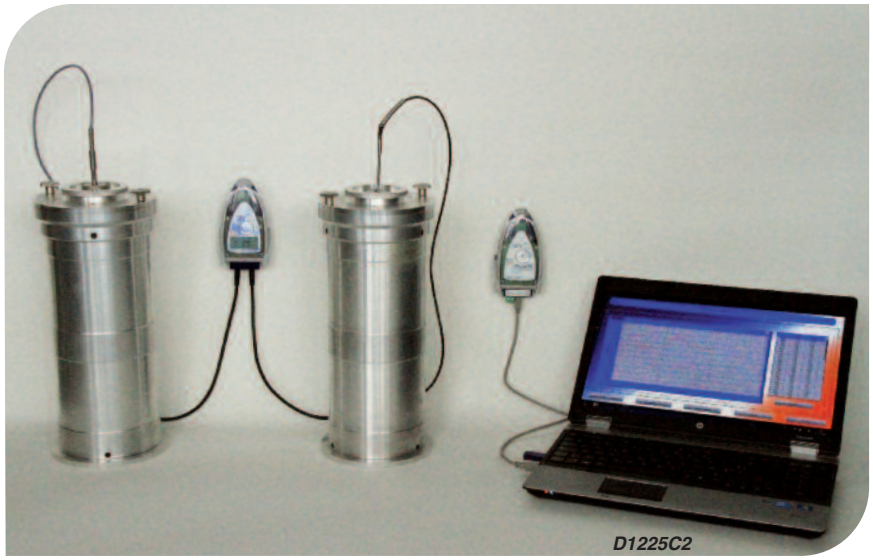
L0003

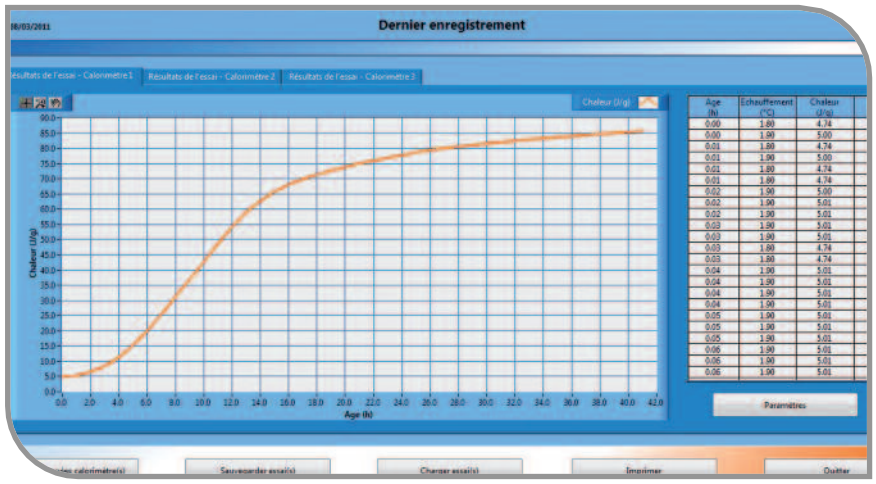
To determine the absolute density of the concretes
- Volume: 250 ml
- Capacity: 250 cm3
- Double graduation from 0 to 1 ml and from 18 to 24 ml by 0.1 ml steps.
- Flared filler opening
- Ground glass stopper

Langavant Controlab-Perrier calorimeter

According to EN 196-9

To measure the hydration heat of the cements by semi-adiabatic calometry (Langavant method). After compounding, introduction of 1.575 kg of cement or mortar in a mortar box, then placing the test specimen in a calibrated calorimeter.
The Cemtech measuring chain records the temperature generated when the cement sets and compares it with the reference temperature.
The software calculates the hydration heat and enables test report to be prepared.
The binding agents may be changed depending on their specific heat capacity.


D1225C2



Cemtech software results screen

Reference calorimetry

L0071.1/R

Calibrated measuring calorimeter

L0071.1

Batch of 50 mortar boxes

L0071.1/01

Standard calorimetric sand, box of 20 sachets

L0071.1/R02

Raising wedge for mortar box

L0071.1/02 *(provide 1 per calorimeter)*

Measuring chain with 1 reference, 1 measurement and software

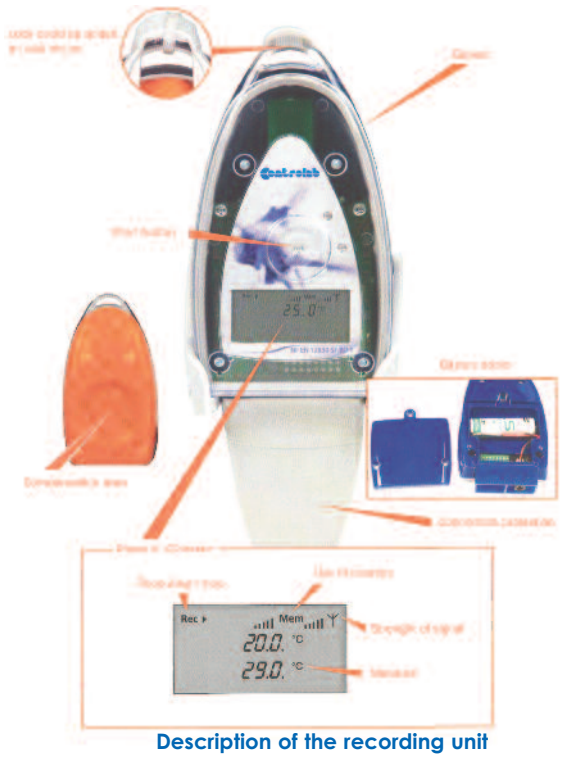
D1225C2

Measuring chain with 1 reference, 3 measurements and software

D1225C4

Sensor temperature T100 : 0-100°C

AC2538



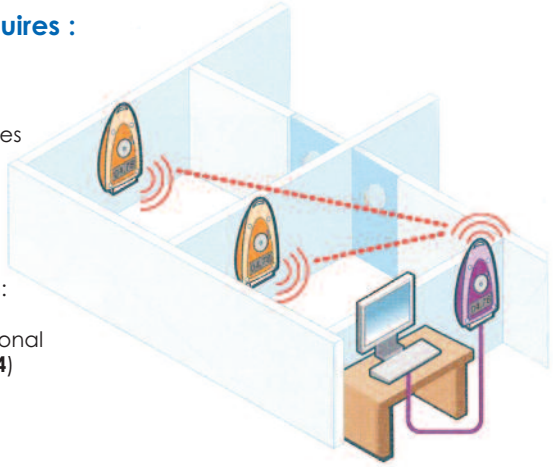
Description of the recording unit

The standard test requires :

- 1 reference calorimeter
- 1 measuring calorimeter
- 2 batches of mortar boxes
- 5 cartons of 20 sachets of sand.
- 1 standard measuring chain

Composition of the **standard measuring chain**:

- 1 Ref + 1 Measurement (**D1225C2**): With 2 additional measurements (**D1225C4**)
- USB output


Working principle

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Equipment for preparing mortars

Variable speed 5-litre mixer

According to EN 196-1

L0031.2

Variable speed mixer for preparation of mixtures of not very high viscosity.
Planetary rotation movement of the tool,
Electronic speed variator for all rotation speeds from 62 rpm to 125 rpm and in planetary movement from 140 rpm to 285 rpm.
Stainless steel blade and 5-litre recipient.
Possibility of adding products during mixing operation.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 300 W.
- Dimensions: 410 x 260 x 470 mm.
- Weight: 15 kg.

Accessories for L0031.2

Mixing blade

Stainless steel bowl

Manual industrial mixer 5 litres for cement

According to EN 196-1, EN 196-3:2005, EN 413-2, EN 459-2, EN 480-1, EN-ISO 679 NF P15-314 DIN 1164-5 / UNE 80801, UNE 83258 / ASTM C305 / AASHTO T162

L0031.5

- Two speeds can be selected : low speed rotation (62 rpm) or high speed (125 rpm).
- Start and stop button.
- Sand dispenser which fills the sand into the mixing bowl.
- User protection system: If opened it automatically stops the machine.
- Supplied complete with stainless steel blade, bajonet coupling, stainless steel bowl and dispenser.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 400 W.
- Dimensions: 340 x 460 x 500 mm.
- Weight: 44 kg.

NEW

Accessories for L0031.5 and L0031.6 :

5-litre stainless steel tank

L0031.6/R01

Mixer blade

L0031.6/R08	Rough SS
L0031.6/R09	Polished SS

Bajonet coupling

L0031.6/R05

Accessories for "Perrier" mixer old generation.

Bowl

L0032/32.20

Blade

L0032/32.10

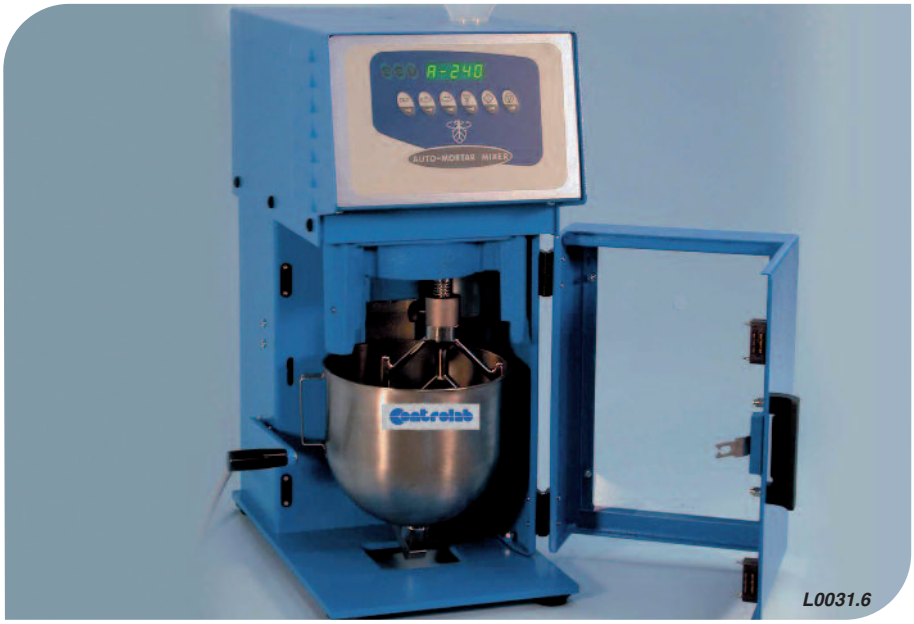
Automatic Industrial mixer 5 litres for cement

According to EN 196-1, EN 196-3:2005, EN 413-2, EN 459-2,EN 480-1 / EN-ISO 679 / NF P15-314 DIN 1164-5 / UNE 80801,83258 / ASTM C305 AASHTO T162

L0031.6

For preparation of the normalised past.
Automatic cycle according to EN 196-1
Two planetary rotation speeds: 140 rpm and 285 rpm.

- User protection system: If opened it automatically stops the machine.
- Sand dispenser which fills the sand into the mixing bowl.
- Supplied complete with stainless steel blade, bajonet coupling, stainless steel bowl and dispenser.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 400 W.
- Dimensions: 340 x 460 x 700 mm.
- Weight: 45 kg.



Perrier high performance automatic mixer for normalised mortar and cement

According to EN 196-1, EN 196-3:2005, EN 413-2, EN 459-2 / NF P15-314
EN ISO 679 / DIN 1164-5, DIN 1164-7 / ASTM C305 / AASHTO T162

L0032/A2

Three operating methods :
Automatic : Pre-programmed tests
Adjustable normalised speeds 140 rpm and 285 rpm.
Manual : On/Off. Adjustable planetary rotation speeds: from 20 to 400 rpm.
Programmable : 5 tests defined by the user.
Traceability: Test data memory: date, time, speed, etc. RS232 output.
(Through hyperterminal or Softomix software **L0032/A2.3**)
Delivered with normalised stainless steel blade and 5-litre mixing recipient, hour glass, protection cover, certificate of conformity.

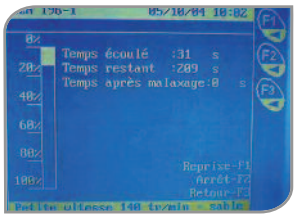
- Adjustable distance bawl/blade.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 550 W.
- Dimensions: 550 x 450 x 900 mm.
- Weight: 86 kg.

L0032/A2

OPTIONS


L0032/A2.1
Automatic water supply


L0032/A2.2
Chute for introduction during testing



Screen of the controller

Manual mixer

L0032/M2

Same as model **L0032/A2** but without chute for introduction during testing.

Automatic mixer for refractory

L0032/A2R

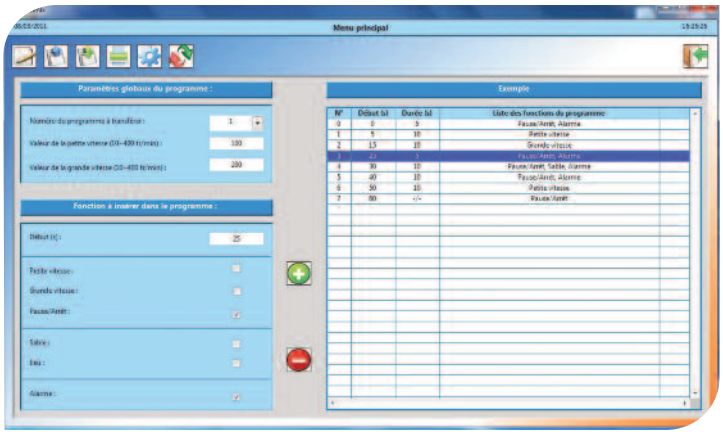
Same as **L0032/A2** but specific for products with high granulometry.
Bowl mounted on "silent blocks" for movement in the three axes of it.
Security presence of the bowl and rebound bowl changed. Adjustable clearance limit stops.

Softomix software

L0032/A2.3

Creation software user program for your Perrier automatic mixer.

- Simple and easy to use compared to the hyperterminal.
- Allows users to create users programs (requires a PC with RS232).
- Supplied with RS.



Main menu of the Softomix software

Accessories

Normalised compression sand

In compliance with EN 196-1

L0007

L0007

5-litre stainless steel tank

L0032/A/R01

Mixer blade (SS)

L0031.6/R09

Bajonet coupling

L0032/A/R05

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Equipment for preparing mortars

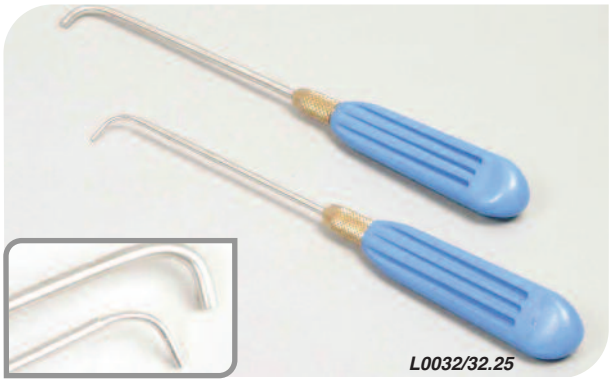
"Cement Manufacturer" control tools

Cuvoscope for mixers

L0032/32.25

Used to measure the difference between the tank and the paddle of a normalised mixer.
Set of two cuvoscopes: Ø 2 and 4 mm.

Supplied with certificate.


L0032/32.25

Determination of the hardening time

Apparatus for measuring the hardening time

According to EN 1015-9

E0083/10

Used for the determination of working time.
Delivered complete with rod brass, aluminium container, and cover.
(Diameter : 90 mm, Height 60 mm)
- Dimensions: 380 x 300 x 500 mm.
- Weight: 12 kg approx.

E0083/10

Accessory Container

E0083/10/R01

Rigid aluminium made with cover.
- Diameter : 90 mm.
- Height : 60 mm.

E0080M

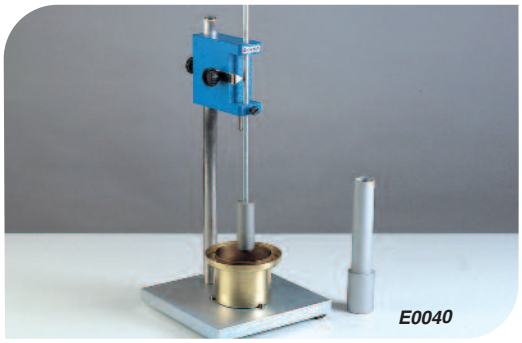
Plaster extensometer

According to BS 1191

E0080M

Utilized to measure the linear expansion of a paste of standard consistence.
The extensometer comprises an horizontal cradle 100 mm x 60 mm x 25 mm closed at one end and open to the other.
The open end is in contact with a dial gauge has 10 mm travel and 0,01 mm.
- Dimensions: 250 x 80 x 80 mm
- Weight: 3 Kg

Consistency


E0040

Consistency test plunger

According to EN 413-2, EN 459-2, EN 1015-4 / DIN 4211

E0040

Used to measure the consistency of a fresh mortar and of a construction lime.
The apparatus is composed of :
- Baseplate with a support on which the measurement recipient is placed.
- Plunger with hemispheric end with gauge graduated at 90 g ± 2 g.
- Release mechanism.
- Compacting sensor.
- Dimensions: 200 x 2000 x 700 mm.
- Weight: 8 kg.

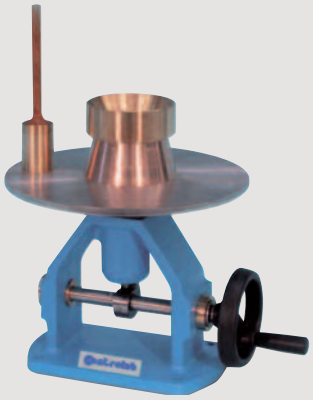
Manual or electric flow tables for tests of reactivity to alkalines, of lime and mortars

According to EN 459-2, EN 1015-3 / ASTM C230 / BS 4551-1

E0087/EN

E0087M/EN

To determine the reactivity of aggregates to alkalines.
To determine the consistency of mortars and limes.


E0087M/EN


E0087/EN

Common characteristics of the tables

The electric tables are equipped with a programmable digital counter in a separate control box. CE compliance
- Delivery: with mould and picking rod.
- Elect. supply: 230 V singlephase 50 Hz.
- Power: 150 W.
- Dimensions (as per model): from 400 x 400 x 400 to 400 x 700 x 400 mm.
- Weight (as per model): from 20 to 50 kg.

Accessories
Picking wooden rod

E0086S/R01

Standards	EN 459-2	EN 1015-3	ASTM C230 / BS 4551-1
Manual tables	**E0087M/EN**	**E0088**	**E0086S**
Electric	**E0087/EN**	**E0089**	**E0086SM**
Drop height	10 mm	10 mm ±0.2	12.7 mm
Number of blows	15	15	10
Rate	1 par sec	1 par sec	en 6 sec
Plate diameter	300 mm ±1	300 mm ±1	254mm±2.5
Plate weight	4350g ±150	3250g ±100	4100g ±50
Mould			
Reference	***E0086/R021***	***E0086/R021***	***E0086S/R02***
Dimensions (mm)	ø70 x ø100	ø70 x ø100	ø69.9 x ø101.6
	x 60	x 60	x 50.8
Picking rod			
Reference	***E0086/R01***	***E0086/R01***	***E0086S/R01***
Dimensions (mm)	ø40 x 60 x 200	ø40 x 200	12 x 25 x 150
Weight (g)	250 ±1	250 ±15	20

Ease of handling

Mortar workability meter

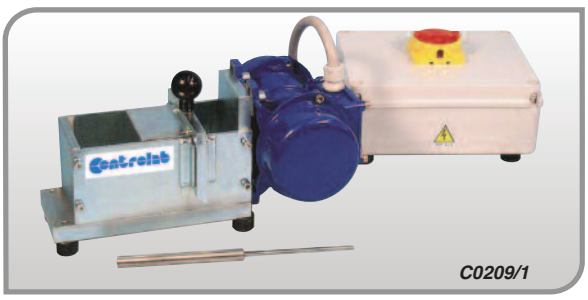
According to NF P 18-452, EN 413-2

C0209/1

To determine the dynamic workability of concrete mortars.
The apparatus is composed of a compartment divided into 2 unequal volumes by a removable partition.
The test consists of measuring the time taken by the mortar to flow from the large volume to the small volume under the action of vibration.
- Dimensions: 400 x 200 x 200 mm.
- Weight: 18 kg.

Picking rod

C0209/1/R01


C0209/1

Tests on fresh mortars

Setting time / Vicat test

Manual Vicat apparatus

According to EN 196-3:2005, EN 13279-2,EN 480-2 / ASTM C187,C191 / AASHTO T131 DIN 1196, DIN 1168 / BS 4550 / NF P15-414, P15-431 / UNE 80102

L0029/F

Delivered complete with:
- Needle Ø 1.13 mm.
- Sensor 10 mm.
- Conical mould.
- Support disk.
- Thermometer - 10 to + 50 °C.
- Dimension: 160 x 200 x 300 mm
- Weight: 3.5 kg.


L0029/F

Single-station automatic Vicat recording apparatus

According to EN 196-3:2005, EN 13279-2, EN 480-2 ASTM C187, ASTM C191 / DIN 1168, DIN 1196 BS 4550 / UNE 80102 / NF P15-414, NF P15-431 AASHTO T129, AASHTO T131

L0722

For determination of the setting time of cements, mortars and plasters.
Two functioning modes :
Automatic mode with 5 pre-programmed standards and management of the penetration parameters according to the standard chosen.
Free mode with 5 completely parameterizable tests: number of penetrations, delayed vstart-up, position, intervals between penetrations, free or accompanied drop, alarm at start of setting.

Characteristics :
- Display of test progress.
- Test memory: up to 50 tests.
- Parameters and graph of tests on printer.
- RS 232 output: to transfer the test memory.

CE compliance
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 50 W.
- Dimensions: 400 x 200 x 470 mm.
- Weight: 13 kg.

Screen of Single-station automatic Vicat recording apparatus

L00722

Accesories : Piloting

L0722/01

Vicat Win software for complete piloting of a single-station setting indicator and processing of the test curves on computer using the RS232 output. Software delivered complete with 3-meter RS232 cable.

Vicat recording apparatus network

L0722/02

Vicat Net Kit to connect up to 20 setting apparatus on one computer with the RS232 output. Delivered with connection software, cable and plug for unitary connection

Cable for additional connecting

L0722/03

Delivery :

The apparatus are delivered with:
- 1 needle Ø 1.13mm ***EN 196-3***.
- 1 conical mould ***EN 196-3***.
- 1 conical mould ***ASTM C230***.
- 1 glass plate

Accessories for manual and automatic Vicat apparatus

Product references	Designation of product	Manual Vicat	automatic Vicat
L0722/R02	Final setting needle (fixation ø 1,13 mm)	•	
L0028/R06	Final setting needle (fixation ø 2,94 mm)	•	
L0028/5*	Consistency plunger (fixation ø 5 mm)	•	
L0028/5	Consistency plunger (fixation ø 8 mm)	•	
L0721/23.26	Consistency plunger (fixation ø 10 mm)	•	
L0028/7	Thermometer -10 at + 50° C	•	
L0028/8	Additional weight of 700g (EN/NF)	•	
L0720/R080	Additional weight of 700g (EN/NF)		•
L0028/32	Initial setting needle (fixation ø 1,13 mm)	•	•
L0028/31	Initial setting needle (fixation ø 2,94 mm)	•	•
L0028/6	Support disk	•	•
L0720/R10*	Plastic recipient for test in water	•	•
L0026/B	Conical plastic mold	•	•
L0721/23.25	Conical brass mold	•	•
L0028/R03	Support needle	•	•
L0720/R09	Conical probe for plaster: ø 5 mm		•
AC2003/R01	Paper (pack of 10 rolls)		•
L0720/R03	Paper tape		•
L0722/R24	Mobile unit for plaster		•

Setting time

Multi-station automatic mortar and cement Vicat apparatus Controlab

According to EN 196-3 / NF P15-431 / ASTM C191-65, ASTM C308-34

L0720/A

For automatic determination of the setting times of mortars and concretes. From 1 to 6 test stations. To perform simultaneous or independent tests. Automatic computer piloting according to the test standard chosen.

Two functioning modes :

- **Automatic** mode with 4 pre-programmed standards and management of the penetration parameters according to the standard chosen.
- **Maxi-points** mode: up to 86 penetrations.

Parameterizable functions :

Time of the start of setting, delayed start-up, penetration rate, height of start of setting.

Characteristics :

- Management using Windows XP® / 7®.
- Six display windows with curves in real time.
- Memorisation of the test files.
- Parameters and graphs of tests on printer.
- Tank with water circulation.

Home sreen of the Vicat apparatus

Delivery :

The Vicat apparatus are delivered with:

- 1 measurement frame with protection case.
- 2 needles: 1.13 mm EN 196-3.
- 6 conical moulds EN 196-3.
- 6 Plexiglas base plates
- 1 additional weight 700 g.
- 1 computer with licence.
- 1 printer.
- 1 pilot software.

Technical characteristics

CE compliance

- Supply: 230 V single-phase 50 Hz.
- Power : 300 W.
- Dimensions : 560 x 700 x 670 mm.
- Weight : 85 kg.

Options

Cooling unit, adjustable from 18°C to 30°C

L0720/A/R280

Base plate

L0720/A/R35

Vicat needle

L0028/31

Conical mould

EN 196-3

L0026/B

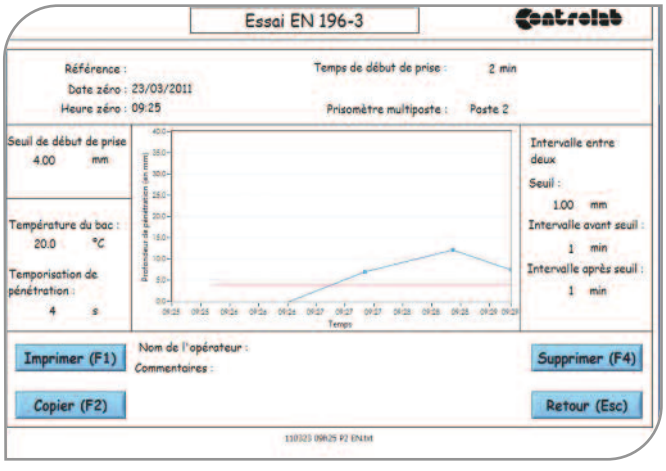
Conical mould

ASTM C230

L0026/C

Screen test of the Vicat apparatus

Screen results of the Vicat apparatus



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Tests on fresh mortars

Air content

1-litre mortar air meter

According to DIN 1164 / EN 413-2

C0170.2

To measure the air occluded in cements.
- High readout precision.
- Manometer with direct readout of the occluded air.
- Incorporated manual pump.
- Dimensions: Ø 200 mm - H 230 mm.
- Weight: 4 kg.

0.75-litre mortar air meter

According to DIN 1164 / EN 413-2

C0170.3

To measure the air occluded in cements.
Similar design as that of the 1-litre model.

C0170.2

Water retention

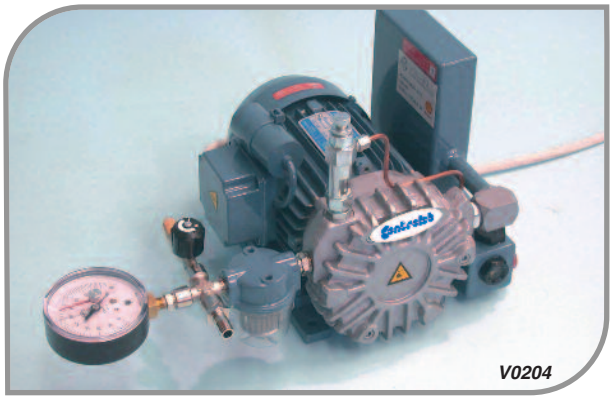
E0039

Retention water apparatus

According to ASTM C91, ASTM C110 / EN 413-2

E0039

For determination of the water retention value of cements and limes.
Delivered complete with stand, funnel, perforated metal disk, manometer, filter paper, glassware and accessories.
- Dimensions: 400 x 300 600 mm.
- Weight: 8 kg.



V0204

Pump

V0204

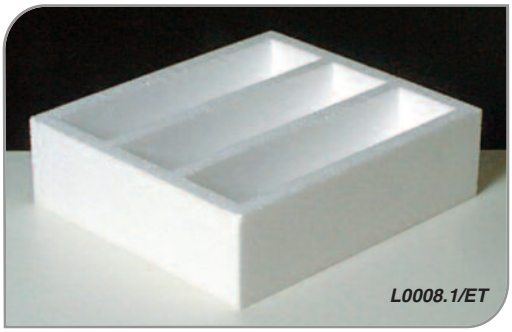
Used to obtain a vacuum of 650 mmHG.
- Air flow rate: 2 m3/h.
- Supply: 230 V 50Hz single-phase.
- Dimensions: 220 x 260 190 mm
- Weight: 12 kg.

Making test specimens

4 x 4 x 16 expanded polystyrene mould

L0008.1/ET

Designed for making 4 x 4 x 16 test specimens in liquid mortar without needing vibration or shocks.
- Weight: 20 g.
- Exterior dimensions: 160 x 180 x 50 mm.
- Delivery: by sets of 30 moulds.


L0008.1/ET

4 x 4 x 16 prismatic mould for compression flexion or shrinkage tests

According to NF P15-413 / ASTM C348 / DIN 1164, 1060

L0008.2	Compression Flexion
L0008.2/01	Shrinkage

Exists in 2 models according to codification.
Made of steel.
- Weight: 7 kg.
- Exterior dimensions: 200 x 210 x 55 mm.

Used with the 35 mm cover **E0100/1** and the set of spatulas **E0100/2S**.


L0008.2

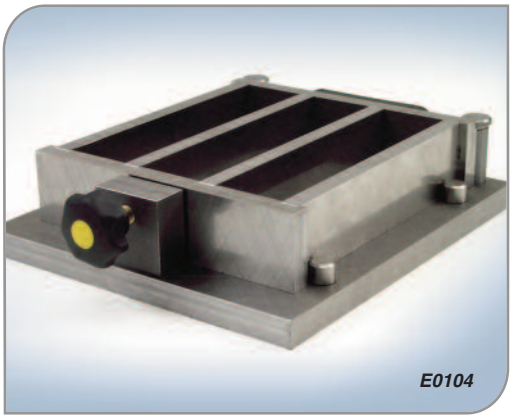
4 x 4 x 16 prismatic mould for compression flexion tests

According to EN 196-1

E0107	Compression Flexion for TAC E0134
E0104	Compression Flexion for TAC E0130
E0104/01	Shrinkage

Made of treated steel.
- Hardness : > 200 HV.
- Roughness : < N8.
- Mounting identification marks.
- Weight : **E0104** : 8,34 kg / **E0107** : 7,4 kg.
- Exterior dimensions : 240 x 200 x 65 mm.

Used with the 35 mm cover **E0100/1** and the set of spatulas **E0100/2S**.


E0104

Filling covers, spatulas and rulers

According to EN 196-1

The covers and spatulas exist in two models.

Height 30 mm

Cover 30 mm. With on-mould centring feet. Treated steel.
- Dimensions: 180 x 200 x 40 mm.
- Weight: 1,5 kg.

E0105/33.22	30 mm

Set of 2 spatulas CEN.

E0100/35	30 mm

Height 35 mm

Cover 35 mm.
With on-mould centring feet.
Cast aluminium.
- Dimensions : 185 x 205 x 45 mm.
- Weight : 1,03 kg.

E0100/1	35 mm

Set of 2 spatulas CEN.

E0100/2S	35 mm

Ruler CEN.

E0102/2

Comments :

Mounting of 4 x 4 x 16 moulds.

Moulds L0008.1 :
Are mounted on standard table E0130.

Moulds E0104 :
Are mounted on standard table E0130.

Moulds E0105 and E0107
Can be mounted on Controlab table E0134,on standard table E0130 with adaptation.

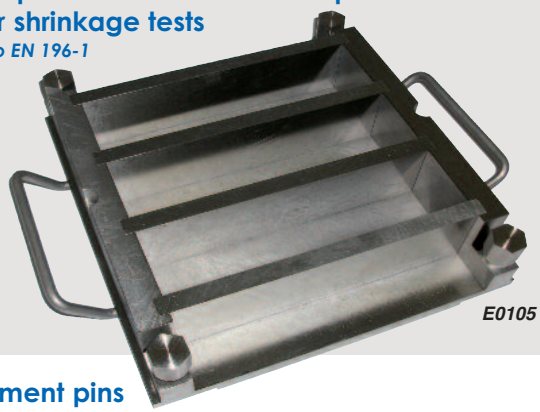
Range of moulds: L0008.1 :
Not normalised for all routine tests.

E0104 and E0107
Normalised standard range.

E0105 :
Normalised top-of-the-range.

4 x 4 x 16 prismatic mould for compression flexion or shrinkage tests

According to EN 196-1


E0105

E0105	Compression Flexion
E0105/01	Shrinkage

Meticulous production.
Exists in 2 models according to codification.
Made of rectified treated steel.
- Hardness: > 340 HV.
- Roughness included between N4 and N5.
- Mounting indication marks.
- Weight: 7 340 g.
- Exterior dimensions: 260 x 214 x 55 mm.

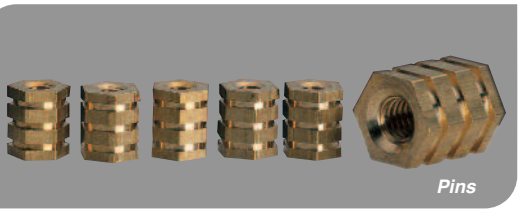
Delivered with three-dimensional Controlab certificate.
Used with the 30 mm cover **E0105/33.22** and the set of spatulas **E0100/3S**

Measurement pins

According to NF P15-433, NF P18-427

For measuring test specimen shrinkage.
To be fixed in the shrink mould before making the test specimen using screws.

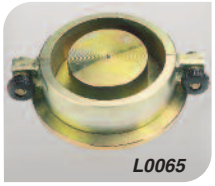
Reference	For mould	Type
L0009/1.1	4 x 4 x 16	Brass
L0009/1.1i	4 x 4 x 16	Stainless Steel
L0009/1.3	7 x 7 X 28	Brass
L0009/1.3i	10 x 10 x 40	Stainless Steel
L0009/1.02	4 x 4 x 16	Screw M4
L0009/1.022	7 x 7 x 28	Screw M5


Pins

Mould for cracking test

L0065

To determine the time of the appearance of a crack on a normalised paste specimen.
- Dimensions : 230 x 150 x 60 mm
- Weight : 8 kg


L0065

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Clamping the test specimens

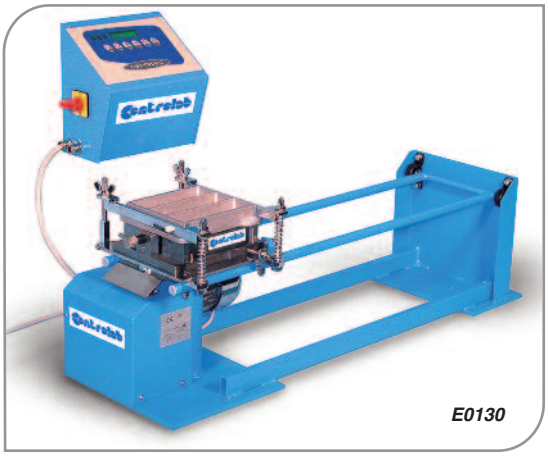
Standard jolting apparatus

According to EN 196-1 / EN ISO 679 / BS 3892 UNE 80101 / NF P15-412

E0130

For compaction 4 x 4 x 16 test specimens with moulds **L0008.1**, **E0104** and **E0105**.
Falling height: 15 mm.
Hardness of the cam : > 400 HV.
Hardness of the hammer and anvil : > 500 HV.
Automatic functioning.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 500 W.
- Dimensions: 100 x 38 x 42 cm.
- Weight: 65 kg.



E0130

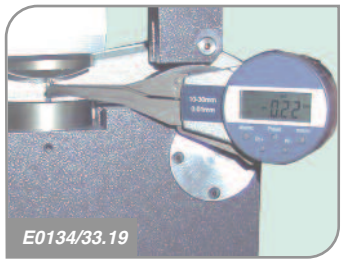
Common accessories for Jolting apparatus

Sound proofing cabinet.

E0134/33.20

Inspection apparatus

Camometer, for inspection of drop height.



E0134/33.19

Controlab Perrier jolting apparatus

According to EN 196-1 / EN ISO 679

E0134

For intensive use. For the compaction of 4 x 4 x 16 test specimens with moulds **E0105** or **E0107.**
Meticulous production with variable speed drive to adjust the number of blows.
Joysticks for quick clamping indexation. High density base plate to ensure no vibrations of resonance.

Characteristics :
Drop height: 15 mm.
Hardness of the cam: > 400 HV.
Hardness of the hammer and anvil: > 500 HV.
Weight of the mobile set: 10.7 kg ± 50g.
Manual, step by step or automatic functioning.
Controlab certificate of conformity.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 350 W.
- Dimensions: 1340 x 620 x 580 mm.
- Weight: 92 kg.

E0134

Conserving the test specimens

Water bath with cooling device

According to EN 196-1,196-8 / EN ISO 679 / ASTM C109, C511

D1409

Water bath with cooling device and heating resistance to control temperature between 10 and 90°C.

- Particulary suitable for test specimen conservation of asphalt at 18°C or bitumen samples at 25°C for penetration test.
- Electronic control type PID.
- Sensibility: ± 0.1°C.
- Stainless steel container of 40 litres capacity.
- Internal dim.: 550 x 360 x 210 mm.
- Overall dim.: 780 x 430 x 1000 mm.
- Power: 2000 W.
- Power supply: 230 V 50 Hz.
- Weight: 60 kg.

D1409

Stainless steel water bath, 200 litres capacity

According to EN 196-1,196-8 / EN ISO 679 / ASTM C109,C511

D1409.200

For test specimen conservation. Temperature range: from ambient to +60°C. with accuracy of +/- 0,4°C. at 20°C.
The bath is equipped with digital thermostat and a dual safety thermostat.
Double walled all stainless steel made, with wool insulation and water circulation electric stirrer, the bath ensures an uniform and constant temperature.

- Internal dimensions : 900 x 600 x 360 mm.
- Overall dimensions : 1050 x 680 x 430 mm.
- Power supply: 230V 50Hz.
- Weight: 55 kg approx.

D1409.200

Conserving the test specimens

Test specimen conservation 490-litre curing cabinet

According to EN 196-1

D1380.90

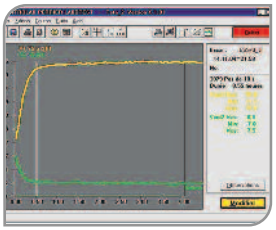
Specially studied for the conservation of moulds in the air and of 4 x 4 x 16 cm test specimens in water.
Volume: 490 litres.
Conservation of 12 moulds in the air on 2 shelves.
Conservation of 288 test specimens in water in 1 fixed tank and 1 tank with partitioned drawer.

Technical characteristics :

Temperature: 20°C ± 1°C.
Humidity: > 90% ± 2%.
Cooling unit and temperature humidity control by 2 electronic regulators.
Air blowing: by fan.
Interior dimensions: 700 x 700 x 1000 mm.
Traceability of °C and CRH parameters : by supplied Téta software programme.
Certificate Controlab.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 1 400 W.
- Dimensions: 900 x 980 x 2200 mm.
- Weight: 400 kg.

D1380.90



Téta software programme

D3060

The software and its digital controller used for analysis of cabinet functioning and archiving the °C and CRH values on a computer. Delivered complete, installed on the cabinet, without Computer with 5-meter cable RS232 for connection.

E0138

600-litre Curing cabinet

According to EN 196-1 / EN ISO 679 / ASTM C87, ASTM C109, ASTM C190, ASTM C191 / UNE 80102

E0138

For conservation of moulded or unmoulded test specimens of cement or mortar, volume 600 litres. Conservation in the air of 15 moulds on 3 shelves. Conservation in water of 72 test specimens in three trays.

Technical characteristics:

- Maintains temperature without cooling unit : by heating resistance for water supply temperature lower than 20°.
- Maintains temperature by cooling unit **E0138/1**: 20°C ± 1°C (option). Humidity: > 90 %.
- Temperature adjustment by electronic regulator.
- Water pulverisation by compressed air (200 l / minute).
- Power: 2 000 W.
- Interior dimensions: 1090 x 470 x 1200 mm.
- Elect. supply: 230 V single-phase 50 Hz.
- Dimensions: 1370 x 540 x 1490 mm.
- Weight: 100 kg.

Curing cabinet

According to EN 196-1 / ASTM C87, C109, C190, C191

E0139

Both exernal and internal walls are stainless steel made, and insulated by a 50 mm. thick glass wool.
Temperature range: from ambient to 70 °C.
Humidity range: 90% to saturation.
Power supply : 230V 50 Hz.
Power : 1000 W.
Dimensions : 900 x 700 x 800 mm.
Weight : 60 Kg.

E0139

Cold production

E0138/1

By cooling unit to be connected on curing cabinet **E0138** to maintain temperature at 20 ± 1 °C.

- Elect. supply: 240 V single-phase 50 Hz.
- Power: 750 W.
- Dimensions: 550 x 500 x 880 mm.
- Weight: 55 kg.

E0138/1

Compressed air production

R0508.3

Air consumption: 200 litres/minute. By compressed air circuit or by compressor (higher than 2 bars). Compressed air compressor 400 litres/minute - 200-litre tank, delivered with 10 meters of flexible connection hose.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 400 W.
- Dimensions : 600 x 600 x 1000 mm.
- Weight: 60 kg.

R0508.3

Tests on the hardened materials

Refractometers

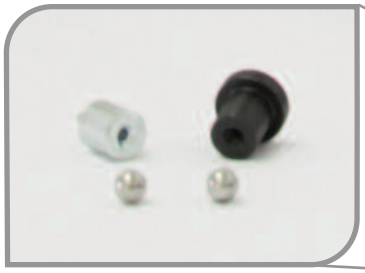
According to NF P15-433 / NF P18-427

E0078/C	Analogical

For determination of linear variations of test specimens: 4 x 4 x 16 cm and 7 x 7 x 28 cm.
2 versions: analogical or digital.
- Dial indicator, 1/1 000.
- Dimensions: 180 x 180 x 490 mm.
- Weight: 10 kg.

E0078M	Digital

- Electronic dial gauge with digital display and RS232 output for acquisition.
- Dimensions: 180 x 180 x 450 mm.
- Weight: 10 kg.



Analogical **E0078/C** *Digital* **E0078M**

Accessories

Invar calibration rod

According to NF P15-433

E0078/7 Length 160 mm

According to NF P18-427

E0078/8 Length 280 mm

E0078/9 Length 400 mm

Ball

E0078/R03

Ø6.5 mm for 4 x 4 x 16.

A0078/R013 (Set of 2)

Ø10 mm for 7 x 7 x 28.

Cable digital dial gauge / data acquisition system.

MT575113/R01

Digital dial gauge 12mm/0.0001mm

MT543122B

Acquisition software

MT543122B/R03

Expansion

Le Chatelier water bath

According to EN 196-3 / EN ISO 9597
BS 6463 / NF P15-432 / UNE 80102

L0025/EN

Used to treat up to 12 moulds.
Le Chatelier moulds (to be ordered separately). Two 900-W heating resistances permit reaching boiling point in 30 minutes ± 5 minutes.
A regulator prevents water evaporation during the test.

Inspection of needle moulds

L0025/10

Inspection tool for moulds with weight of 300 g.
- Dimensions: 180 x 70 x 150 mm.
- Weight: 2,1 kg.

Accessory L0025

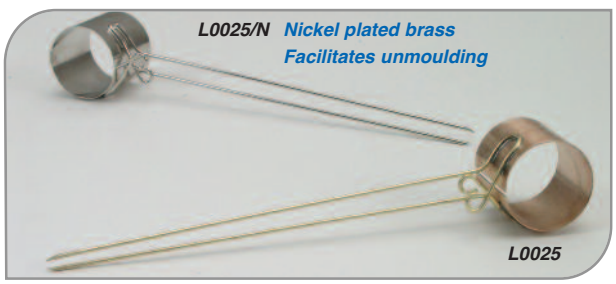
Glass sheet : 50 x 50 mm.

L0025/2

L0025/10

L0025/EN

Needle moulds **L0025**



L0025/N *Nickel plated brass*
Facilitates unmoulding

L0025

Le Chatelier needle mould

According to EN 196-3 / EN ISO 9597 / BS 6463 / NF P15-432 / UNE 80102

L0025	Rough brass
L0025/N	Nickel plated brass

To moulds the stability of cement.
Each mould is numbered by laser marking.
- Dimensions: 30 x 30 x 150 mm.

Determination of the mechanical performances

250 kN compression, flexion or splitting test machine Class 1

According to EN 196-1 / EN ISO 679 / ASTM C109, C348, C349 / NF P18-411, NF P15-451 UNE 80101 / DIN 1164 / BS 3892, 4550, 4551

E0160S	250 kN

For compression, flexion or splitting tests on normalised test specimens or on core samples:
- normalised 4 x 4 x 16 cm.
- 40 x 80 mm.
- 50 x 100 mm.

Measurement of the force by digital Cybertronic with 2 measurement scales : 0-250 kN and 0-16 kN, per pressure transducer.
Electrical unit and loading by operator.

Technical characteristics :
Compression plates: 153 mm.
Space between plates: 150 mm.
Jack stroke: 45 mm.
Protection door.
CE compliance
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 750 W.
- Dimensions: 700 x 400 x 450 mm.
- Weight: 300 kg.

Tools to be ordered separately.

E0160S

50 kN compression test machine Class 1

E0160S1	50 kN

Maximum force: 50 kN.
Measurement by force sensor.
Same technical characteristics as those opposite.

Tools to be ordered separately.

Acquisition software Press control

S0217/COMP/CIM	Compression
S0217/FLEX/CIM	Flexion

Compression

		Load measuring system	
Modèle	Max load	Cyber-Plus (Semi-automatic)	Servo-Plus (Automatic)
E0159	500kN	•	
E0159S2	250kN	•	
E0161	250kN		•

Compression / Flexion

		Load measuring system	
Modele	Max load	Cyber-Plus (Semi-automatic)	Servo-Plus (Automatic)
E0160	500/15 kN	•	
E0160S	250/15 kN	•	
E0161/1	250/15 kN		•

Option : Table

E0160/1

E0160/1

Compression device

According to EN 196-1 / EN ISO 679
ASTM C349

E0170

For half-prism 40 x 40 x 160 mm
- Dimensions : Ø 140 x 180 mm.
- Weight : 7 kg

Flexion device

According to EN 196-1 / EN ISO 679

E0171

For prism 40 x 40 x 160 mm
- Dimensions : 140 x 100 x 180 mm.
- Weight : 7 kg.

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Determination of the mechanical performances

250 kN and 25 kN double automatic Compression Flexion press - Class 1

According to EN 196-1 / EN ISO 679 / ASTM C109, ASTM C348, ASTM C349 / NF P18-411, NF P15-451 / UNE 80101 / DIN 1164 BS 3892, BS 4550, BS 4551

E0183

For tests of compression and flexion normalised test specimens or on core samples:
- normalised 4 x 4 x 16 cm.
- 40 x 80 mm.
- 50 x 100 mm.

Measurement of the forces by digital Cybertronic with 2 measurement scales:
0-250 kN and 0-25 kN, by load cells.
Loading by force controlled automatic unit.

Technical characteristics :
Flexion and compression tools 4 x 4 x 16 supplied.
Compression plates: 165 mm.
Space between plates: 189 mm.
Jack stroke: 35 mm.
Protection door.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 750 W.
- Dimensions: 1300 x 500 x 1500 mm.
- Weight: 400 kg.

E0183

Pilotage par ordinateur

E0183/01

4 x 4 x 16 cm piloting and data acquisition software using Windows® in flexion and compression according to ***EN 196-1***, delivered with computer and user's licence.
Can not be added after delivery.

Ergonomic & Compact Cement Testing Systems 200 - 300 kN / 10 - 20 kN

According to EN 196-1

Ask for info

For compression and bending test on cement.
These testing machines are the most advanced models available. They combine accurate and rapid testing with ergonomic working in sitting position.
Optional with simultaneous bending and compression testing to reduce the testing time considerably.
Supplied with a digital controller, a PC with a software testing of building materials and a printer.

Split devices

Ask for info

These devices are especially designed to break the prisms (cement, mortar, plaster) 4 x 4 x 16 cm in two halves.
- Manual Version: Manual one hand operation.
- Hydraulic Version: Automatic two-hand operation.

Measurement of heat of hydration by dissolution in acid solution

According to EN 196-8 / ASTM C186

E0062

The method consists in measuring the heat values of the dissolution of a cement mix in an acid solution for a period of 7 days. Delivered complete with Dewar flask protected in its wooden box, constant speed electric mixer, Beckman type centesimal thermometer and funnel for introducing the cement.

- Elect. supply: 230 V single-phase 50 Hz.
- Power: 150 W.
- Dimensions: 350 x 250 x 650 mm.
- Weight: 15 kg.

E0062

Spare parts

Dewar flask

E0062/R1

Beckman type centesimal thermometer

E0062/R2


E0070

Electric autoclave for expansion test of cements

According to ASTM C151, ASTM C490 / UNE 7207

E0070

Aluminium autoclave, interior dimensions Ø 154 mm x 430 mm, heated by electric resistance with pressure regulator and safety valve for cement expansion tests.

- Elect. supply: 2030 V single-phase 50 Hz.
- Power: 3500 W.
- Dimensions: 450 x 480 x 1080 mm.
- Weight: 75 kg.

Set for determination of fineness by wet sieving

According to EN 451-2 / ASTM C430

E0017

Including a stainless steel Ø 50 sieve with 0.045 mm. mesh, a Ø 17.5 mm nozzle with 17 holes Ø 0.5 mm, a Ø 80 mm manometer 0 - 160 kPa / 5 kPa and mounting connections on a water supply.

- Dimensions : 200 x 300 x 50 mm.
- Weight : 3 kg.

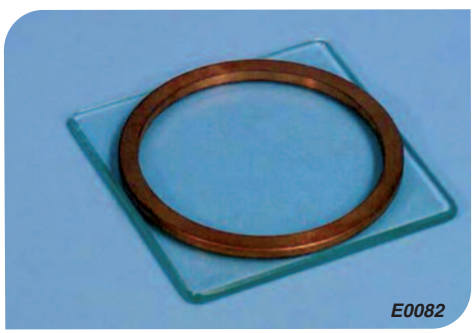
E0017

Test of stability of hydrated lime and plaster

According to EN 459-2

E0082

Mould used for stability test of hydrated lime or plaster.
Ring, interior Ø 100 mm, thickness 5 mm, with 5° interior cone frustum.
Delivered complete with glass base.
(Provide for 3 moulds per test.)


E0082

Samplers

E0020	BULK
E0021	BAG

To take samples of cements in bags or in bulk, according to mode.

Concretes

Table of Contents

Test on grout

Flow cone with interchangeable nozzles

According to XP P18-358 / NF P18-507 / EN 445

L0060.80 to 125*

With 1 inlet nozzle, choice of
8 - 9 - 10 - 11 - 12,5 mm.
* Example: 8 mm inlet : **L0060.80**

L0060.2S

With lot of 5 inlet nozzles from 8 to 12.5 mm.

V0123T

Plastic moulds with cover

Ref.	Ø int mm.	H mm.	Set
V0123T	40	100	25 U

L0060.2S

Delivered with a 1 litre ± 1cl measurement recipient, without sieve

Accessories

Supplementary inlet nozzle

L0060/R011	Ø 4,76 mm
L0060/R02	Ø 8 mm
L0060/R03	Ø 9 mm
L0060/R04	Ø 10 mm
L0060/R05	Ø 11 mm
L0060/R06	Ø 12,5 mm

Stainless steel sieve Ø 150 mm

D0269/15.1

• Opening 3.15 mm.

D0267/15.1

• Opening 2 mm.
(indicated in the standard **EN 445**)

Measurement recipient

C0166/2*

Agitator with electric propeller with stand

T0052.1/R99

L0060.4

L0060.5

Baroïd weighing device

L0060.5

For simple and precise determination of the density of drilling muds.
Perfect work site instrument thanks to its robust construction.
Delivered in plastic box.

Marsh cone or Marsh viscometer

L0060.4

For determination of the viscosity of grouts.
• Inlet nozzle Ø 4.76 mm.
Plastic construction, very resistant to temperature variations.
Delivered with 1-litre graduated bowl.

Filter press

L0060.6

For determination of the filtering properties of drilling muds and grouts.
Including :
• Graduated 25-ml cylinder.
• Box of 100 filter papers.

Accessory
Set of ten CO2 cartridges

L0060.6/R05

Elutriometer

L0060.7

For determination by sieving of the sand content of drilling muds.
Delivered with funnel, cover, sieve and graduated reception vessel

L0060.6

L0060.7

Fann viscometer

L0060.8

L0060.8

For measurement of the rheological properties of fluids.
A synchronous engine makes it possible to have a wide range of shearing rates controlled.
The continuous display of data on a calibrated scale, facilitates observation of any variation according to time.
• 6-speed laboratory model.
• Elect. supply: 220 V - 50 Hz.
• Dim.: 390 x 150 x 270 mm.
• Weight: 6.8 kg.
Delivered complete.

Making concrete in laboratory

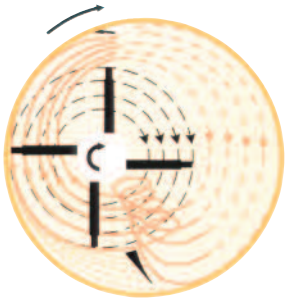
Zyklos type variable gear concrete mixer Capacity: 30 litres or 50 litres, 150 or 250 litres

For 30 and 50-litre mixers :
Engineered for consistent and very homogeneous mixing of concretes and other materials with maximum granulometry of 25 mm or 35 mm in the limit of 10% of the aggregates.

Several models available.

C0199/150 ou C0199/250

Ref.	Mixing capacity	Tank volume	Power	Empty weight
C0199/30	30 l	40 l	1,5 kW	180 kg
C0199/30E	30 l	40 l	1,5 kW	180 kg
C0199/30HE	30 l	38 l	1,5 kW	450 kg
C0199/50	50 l	56 l	1,5 kW	800 kg
C0199/150	150 l	170 l	4 kW	800 kg
C0199/250	250 l	365 l	7,5 kW	1400 kg


Planetary rotating blades

Mixing principle of these mixers

The mixing axles are arranged in an eccentric manner and the tank turns in the same direction and independently.
This produces a shearing force and a sizeable amount of energy.
The static mixing organs fixed on the arms perform a vertical mixing of the material and hence a perfect homogeneity.

Forced-actionmixer type XM 2-650

C0199/COLXM2

For all material processing requirements and for use by just a single person.
Different tooling options according to viscosities, height adjustable, easy cleaning.
Planetary gearing providing high torque at any speed.

- Scraper edge with a rubber band.
- Selectable mixing times: 90 / 180 / continuous.
- Size of mixing tank: 65 litres.
- Max. effective volume: 50 litres.
- Mobile mixing container.
- Power rating of mixing mechanism: 1 100 W.
- RPM of mixing mechanism: 2 x 150 / 1 x 770 rpm.
- Edge scraper speed: 40 rpm.
- Power supply: 230 V 50 Hz.
- Dimensions: 1075 x 730 x 845 mm.
- Weight: 105 kg.

C0199/COLXM2

Accessories

65 litres tank

C0199/COLXM2/R01

Trolley for 65 litres tank

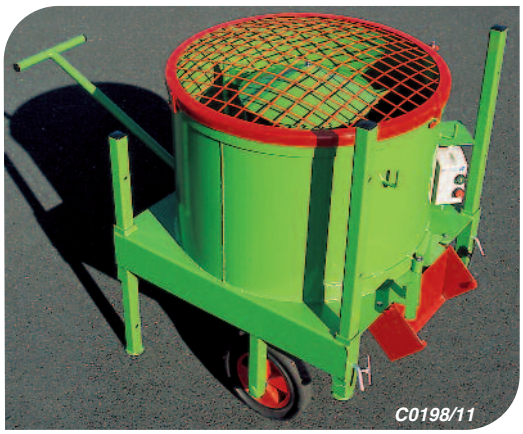
C0199/COLXM2/R02

Making concrete in laboratory

Vertical axle mixers

Particularly adapted for making special concretes and mortars, for prefabrication of components in concrete or dry and light mortars.
Robust appliance with large opening surface permitting mechanical tractable filling.
- Adjustable, interchangeable blades.
- Adjustable feet.
- Elect. supply: 380 V three-phase 50 Hz.

Ref.	Mixing capacity	Tank volume	Power	Empty weight
C0198/11	80 l	168 l	2,2 kW	185 kg
C0198/2	180 l	430 l	5 kW	410 kg
C0198/3	300 l	600 l	7,5 kW	520 kg
C0198/4	500 l	1000 l	9,2 kW	580 kg


C0198/11


C0198/2

Planetary rotation laboratory : Capacity 20 litres and 40 litres

For preparing mixes with granulometry from 15 mm to 20 mm.
Mixer providing excellent homogeneity due to its planetary rotation and its scraper arm (optional).

Exists in :
- 4 set speeds: 96, 211, 320 and 450 rpm.
- or in 3 set speeds: 96, 211 and 400 rpm. and one variable speed from 65 to 450 rpm.

Ref.	Capacity *Litre*	speed	Power *W*	Weight *kg*
B0026/D	20	fixe	1 100	190
B0026/F	40	fixe	1 500	210
B0026/DV	20	variable	1 100	190
B0026/FV	40	variable	1 500	210


B0026/F

Recommended accessory Scraper arm

B0026/D/3	20 l
B0026/F/1	40 l

For 20 litres and 40 litres mixer.


Detail of scraper arm B0026/D

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Tests on fresh concrete

Plasticity / Workability

Vebe consistometer

According to BS 1881 / ISO 1920-2 / EN 12350-3

C0183M

For determination of the workability of fresh concrete, variant of the slump test.
After passage in a cone, the concrete is subjected to vibrations. The time passed for recompacting the concrete indicates the degree of consistency.
- Elect. supply: 230 V - 50 Hz.
- Power: 250 W.
- Dimensions: 260 x 380 x 700 mm.
- Net weight: 90 kg.

C0183M

Concrete workability meter

According to NF P18-452

C0209

For determination of the workability of concretes under the action of a given vibration.
- Volume of concrete: around 30 L.
- Elect. supply: 230 V - 50 Hz.
- Power: 300 W.
- Dimensions: 820 x 420 x 410 mm.
- Weight: 80 kg.

C0209


C0188

Waltz degree of compactability measurement apparatus

According to EN 12350-4 / DIN 1048

C0188

Including a metal recipient with square base of 200 mm and height 400 mm.


C0150/S

Mini stainless steel cone

C0150/S

For rheological measurement by slump test of façade products.
- Dimensions: Ø 5 / Ø 10 cm.
- Height: 15 cm.
- Weight: approx. 500 g.

Flow table

According to ASTM C124 / AASHTO T120 / UNE 7102


C0165

Designed to measure the fluidity of concretes with large elements.
Table Ø: 762 mm.
Delivered complete with picking rod and flow mould.

Two versions :

Manual

C0164

- Weight : 100 kg.

Electric

C0165

With digital display of number of drops.
- Weight : 115 kg.


C0144.1

Concrete plasticimeter

C0144.1

For rapid determination of the plasticity of a concrete.
The obtained values are approximately the same as those of the slump cone.
- Dimensions: 370 x 120 x 111 mm.
- Weight: 2 kg.

Automatic concrete plasticimeter

C0144.2


C0144.2

Apparatus used to rapidly and reliably determine the qualities of fresh concrete (expansion water/cement ratio, resistance to pressure and temperature). Very easy to handle and simple to use, it is perfect for immediate use on work sites.

The basic equipment includes :
- The FCT 101 SL.
- The consistency probe.
- The computer connection cable.
- A box.

Tests on fresh concrete

Slump cone

According to ISO 1920-2 / EN 12350-2, EN 12382
ASTM C143 / BS 1881:102 / AASHTO T119 / NF P18-305
UNE 7103

C0150.01

Including :
- 1 base plate.
- 1 cone.
- 1 funnel.
- 1 picking rod.
- 1 hand scoop.
- 1 measurement ruler: length 300 mm.

C0150.01

D1619

Hand scoop

According to EN 12350-1

D1619

- Capacity: 5 kg of concrete.

C0150.2

System with bracket arm

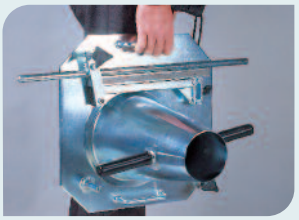
Galvanised steel slump cone with quick securing and bracket arm

According to EN 12350-2, EN 12382 / ISO 1920-2

C0150.2

Including :
- 1 support plate with 2 handles.
- 1 normalised cone with 2 handles and 2 securing lugs.
- 1 system with brochet arm.
- 1 picking rod, length 600 mm - Ø 16 mm.
- 1 funnel.
- 1 hand scoop.
- Dimensions: 480 x 410 x 340 mm.
- Weight: 13 kg.

With direct readout on the indicator of the sliding arm



Thanks to its transport handles and its rapid securing, this cone and its accessories can be carried in a single hand

Table for slump test

According to DIN 1048 / EN 12350-3, EN 12350-5

C0151

This test is particularly adapted to very fluid concretes, with high superplasticizer content.
- Dimensions: 700 x 700 mm.
- Weight: 30 kg

C0151

Delivered with cone and pestle.

Accessories

Spare cone

C0151.1

For slump table.

Spare rammer pestle

C0151.2

C0141

Workability tester

According to ASTM C1362

C0141

To determine the compactness and the workability of fresh concrete.

PVC plate for spreading test

According to PR EN 12350-8

C0148

For the measurement of the spreading.
- PVC with protective film.
- With concentric circles Ø 200-500-600-700-800 mm.
- Carrying handle.
- Dimensions: 905 x 905 mm.
- Weight: 5kg.

C0148

Kelly apparatus

According to ASTM C360

C0142

To determinate the workability of fresh concrete.
It is composed of a half-sphere with a rod graduated in inches.

System with bracket arm C0142

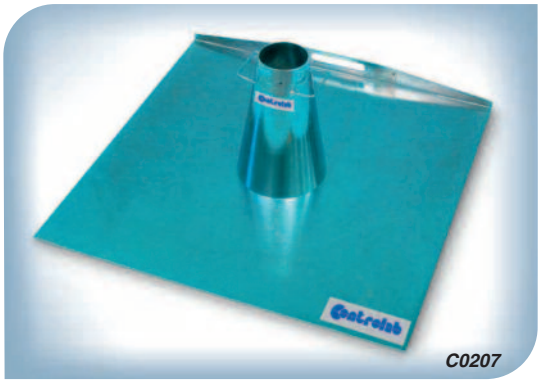
Tests on fresh concrete

Slump test system

According to EN 12350-8

C0207

Including :
- A galvanised steel cone.
- A galvanised steel base plate, 905 x 905 mm, with two engraved circles Ø 210 mm and 500 mm.


C0207

Accessories for C0207

Plate

C0207/R01

Additional mass

C0207/01

Cone

C0183M/R03

Flow time measurement

C0208.1

Including :
- A 10-litre capacity stainless steel funnel with an obturation valve in the lower part.
- A galvanised steel rectangular section bar, length: 900 mm.
- As option: a plastic box recipient.


C0208.1


C0208

Flow time measurement in L-shaped box

C0208

Including :
- The L-shaped box composed of :
  - a tank.
  - 2 bars system (3 vertical bars : Ø 12 mm, with 41 mm spacing, or 2 vertical bars with 59 mm spacing)
  - a guillotine door.
- Two identification markings at 200 mm and 400 mm are engraved on the bottom.
- A galvanised steel 300-mm ruler.

Flow time measurement in U-shaped box

According to EN 12350-12 / ASTM C1621

C0208.2

Including :
- A U-shaped stainless steel box with vertical bars with reinforcement bars, foreseen as flow obstacle. The position of the bars and their diameter can be adjusted.
- A galvanised steel ruler, 300 mm.


C0208.2

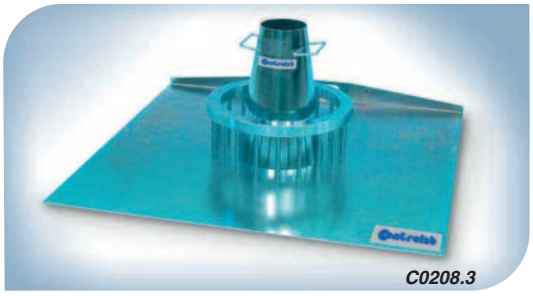
Flow time measurement in ring

According to EN 12350-12

C0208.3

Including :
- A galvanised steel ring, section: 30 x 25 mmand Ø 300 mm.

The bars fixed in the ring : Ø 10 mm and length 100 mm.
The distance between the bars is 48 mm.
- A galvanised steel cone.
- A 800 x 800 mm base plate with two engraved circles for centering the ring.


C0208.3

Accessory Ring

C0208.3/R01

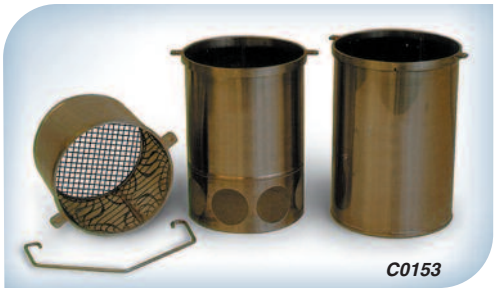
Stainless steel Joisel apparatus

C0153

For rapid determination of the proportions of the different elements composing fresh concretes.

Normal model

- Ø 14 cm - H 22 cm.



C0153

C0167/1

C0383

Pocket-size penetrometer

According to ASTM C403

C0383

Penetration surface: 32 mm^2.
The resistance is displayed in kPa and Lb/in2.

- Weight: 400 g.

Measurement container 10 litres

According to EN 12350-6

C0167/1

Used to measure the weight of one cubic meter of fresh concrete.

- Interior Ø : 220 m.
- Height : 320 mm.
- Weight : 9 kg

C0384

Concrete penetrometer

According to ASTM C403 / AASHTO T197

C0384

Capacity: 100 kgf.
Delivered with 6 points, sections :
16-32-65-160-325-650 mm^2, in transport carrying case.

- Dimensions: 450 x 160 x 70 mm.
- Weight: 5 kg.

4-channel temperature recorder - 195 + 1000 °C

D1224.8

4 external channels for type K thermocouples (not supplied).
Of particular interest for measuring and memorising the temperature of concrete and for assessing maturing.
On-site measuring is started by means of the GO key.
Measurements may be programmed at frequencies of 2 secs. to 24 hours.
The appliance is programmed and the values transferred to a PC by means of the software supplied running under Windows©.
The values are displayed on a PC in the form of tables or diagrams.

- Resolution : 0.1 °C.
- Memory capacity : 48,000 values.
- Power supply : Lithium battery with 5 years autonomy.
- Dimensions : 103 x 64 x 33 mm.
- Weight : 129 g.

For temperature measurements on fresh concrete, see range of measurements.

Supplied without probe D1224.8

Accessories for D1224.8

Connector

D1223.72

For thermocouple.
(plan on 4 units).

K type thermocouple

D1223.71 **The m**

Teflon jacket, max. length 12 m.

Sheathed K type thermocouple

D1223.71B **The m**

Teflon jacket, max. length 70 m.

Probe with handle, PVC twisted cable 1,5 m and connector

D1223.3/R01

Connector D1223.72

K thermocouple D1223.71

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Tests on fresh concrete

Entrapped air

5-litre concrete air meter

According to NF P18-353 / EN 12350-7 / ISO 1920-2
ASTM C231 type A / BS 1881:106 / UNE 7141

C0195M	5 l
C0194/4	Transport box

Delivered complete with pump, manometer, picking rod.
- Dimensions: 350 x 350 x 700 mm.
- Weight: 13 kg.


C0195M

Accessory

Calibration cylinder

C0195M.1

For air meter C0195M


C0195T

8-litre concrete air meter

According to NF P18-353 / EN 12350-7 / ISO 1920-2
ASTM C231 type A / BS 1881:106 / UNE 7141

C0195T	8 l
C0194/4*	transport box

- High level of measurement precision.
- Manometer with direct readout of entrapped air.
- Incorporated manual pump.
- Dimensions: 400 x 400 x 700 mm.
- Weight: 15 kg.

8-litre electric air meter

According to NF P18-353 / EN 12350-7 / ISO 1920-2
ASTM C231 type A / BS 1881:106 / UNE 7141

C0195TE

Similar to model C0195T, but equipped with an electric compressor to maintain constant air pressure.
- Elect. supply: 240 V single-phase 50 Hz.
- Weight: 14 kg.


C0195TE

Accessory for C0195T and C0195TE

Wooden transport box

C0194/4*

For transporting air meters and their accessories.


C0194/4*

Moulds according to standards AFNOR - ISO - EN - ASTM...

Cylindrical cardboard moulds with metal bottom and plastic lid

Ref.	Ø cm	H cm	Qty
C0119/1.6	7	14	100
C0119/1.5	11	22	60
C0119/1.40	15	30	38
C0119/1.4	16	32	30

Available with zip
(add the letter "Z" at the end of the reference)

Cardboard *C0119/1.4* *Corset* *C0119/1.3*

Metal corsets

For vibrating the cardboard moulds.

Ref.	Ø cm	H cm
C0119/1.33	11	22
C0119/1.3	16	32

Cylindrical plastic moulds with pneumatic removal

The mould has just to be turned over and compressed air is blown in the orifice, the air pressure removes is blown the test specimen and frees the mould. Easy cleaning with oiled rag. Non deforming plastic construction ensuring long product life.

C0119/1.21

C0119/1.20

Ref.	Dim cm	Type	Weight (kg)
C0119/1.28	Ø 15 H 30	Techniplast	2,4
C0119/1.21	Ø 16 H 32	Ready form	3
C0119/1.20	Ø 16 H 32	Techniplast	3

Plastic accessories for Ø 16 H 32 cm moulds

Disk

C0119/1.22 — *bag of 100*

Ready form covers

C0119/1.23 — *set of 10*

Techniplast covers

C0119/1.230 — *set of 10*

Cylindrical steel moulds

C0119/1.1

Steel

T0099/1 - C0119/1.1S

Ref.	Dim. Ø x H cm	Opening	Weight (kg)
C0117	Ø 10 - H 20	nut	8
C0117/3	Ø 11 - H 22	nut	8
C0118	Ø 15 - H 30	nut	13
C0119/1.1	Ø 16 - H 32	nut	15
C0119/1.1S	Ø 16 - H 32	rapid with lever	13
C0119/2	Ø 25 - H 50	nut	80

Accessories

Unmoul ding oil

C0139.1 — *10L*

Bevelled cutting edge ruler

according to NF P18-404

T0099/1

- Length : 450 mm.

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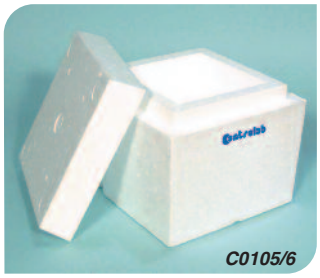
Making test specimens

Plastic cubic moulds with pneumatic removal from mould

Ref.	Dim cm	Weight (kg)	Type
C0105/1	15 x 15	1,5	Techniplast
C0232	10 x 10	1	Techniplast


C0105/1


C0232


C0105/6

Polystyrene cube mould 15 x 15 cm

C0105/6

• Set of 40.

NEW


C0105/5

Steel cubic mould, 15 x 15 cm

According to EN 12390-1 / BS 1881:108
DIN 51229

C0105/5

• Weight : 15,5 kg.

Accessories for mould C0105/1

C0105/1/R01	Mould base (set of 100)
C0105/1/R02	Filling hopper
C0105/1/R03	Cover (set of 10)
C0105/1/R04	Stopper (set of 10)
C0105/1/R05	Grasping pliers

Accessories for mould C0232

C0232/1	Mould base (set of 100)
C0232/R01	Stopper (set of 100)

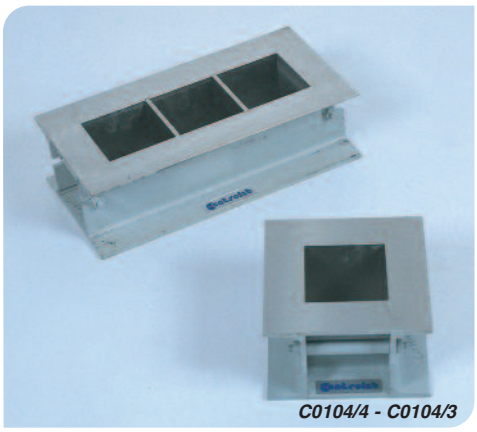
Pneumatic unmoulding accessories

C0119/1.24	Air gun
R0508	Compressor
C0139.1	Unmoulding oil, 10 l


C0119/1.24

Steel cubic moulds

Ref.	Dim. cm	Number of cells	Weight (kg)
C0104/3	10 x 10	1	6
C0104/2	10 x 10	2	11
C0104/4	10 x 10	3	20
C0104	10 x 10	4	25
C0104/S	14 x 14	1	10
C0104/5	14 x 14	3	24
C0105/7	15 x 15	1	15,5
C0105/2	15 x 15	2	20
C0105/4	15 x 15	3	35
C0105	15 x 15	4	45
C0247/2	20 x 20	1	25
C0247/3	30 x 30	1	60


C0104/4 - C0104/3

Steel prismatic moulds

Ref.	Type	Dim. cm	Number of cells	Weight (kg)
L0033 L0033.1	normal and shrinkage	2 x 2 x 16	3	5
L0008.2 L0008.2/01	normal and shrinkage	4 x 4 x 16	3	9
C0115.1 C0115.11	normal and shrinkage	7 x 7 x 28	3	20
C0115/1 C0115/1R	normal and shrinkage	10 x 10 x 40	1	20
C0115/1.1	normal	14 x 14 x 56	1	38
C0116	normal	15 x 15 x 60	1	44
C0116/3	normal	20 x 20 x 80	1	86


C0115/1 - C0115.1

Positioning

Mechanical poker vibrator Ø 25 mm High performance four-stroke gasoline engine

According to NF P18-422

C0163.1S

- Type: Honda G 100.
- Power: 2,5 CV.
- Flexible hose: 2 meters with Ø 25 mm needle.
- Weight: 17,3 kg.

C0163.1S

Mechanical poker vibrator Ø 25 mm Two-stroke gasoline engine

C0163

- Flexible hose: 2 meters with Ø 25 mm needle.
- Power: 0.75 CV.
- Weight: 9.2 kg.

C0163

Poker vibrator Ø 25 mm

C0162/D

- 1 200 vibrations per minute.
- Flexible hose length: 2 meters.
- Needle: 25 x 290.
- Amplitude: 0.65 mm.
- Dimensions: 20 x 30 x 35 cm.
- Elect. supply: 240 V 50 Hz single-phase .
- Weight: 10 kg.

C0162/D

C0162/AB/AR

Universal electric poker vibrator for needle Ø 25 or 35 mm

According to NF P18-422

C0162/AB	**needle Ø 25 mm**
C0162/AR	**needle Ø 35 mm**

- 12 000 vibrations per minute.
- Elect. supply: 240 V single-phase.
- Power: 2 300 W.
- Weight: 12 kg.

Delivered with 2-meter long hose (longer on request).

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Making test specimens

Battery supplied poker vibrator Ø 25mm

According to NF P18-422

C0162/ACA

Completely autonomous equipment supplied by one (1) 12 V battery. Used to vibrate 20 to 30 concrete test specimens Ø 16 cm H 32 cm with a single battery.

Case including :

- Electric motor: 12 000 vibrations per minute.
- Vibrating needle, approx. 1 meter long.
- Two rechargeable 12 V batteries.
- One 220 V / 12 V charger.
- Weight: 2.9 kg.

C0162/ACA

Accessory for C0162/ACA

Rechargeable batterie

C0162/ACA/R01

Pneumatic poker vibrator Ø 25 mm

According to NF P18-422

C0162.1

To be connected on an existing air circuit.

- Equipped with a vibrating pneumatic turbine.
- 2-meter long hose.
- Weight: 2 kg.

C0162.1

Vibrating table

According to EN 12390-2 / BS 1881:108

C0159

- Vibration rate: 3 000 vibrations per minute.
- Elect. supply: 220 V single-phase or 380 V three-phase.
- Delivered with tightening clamp.

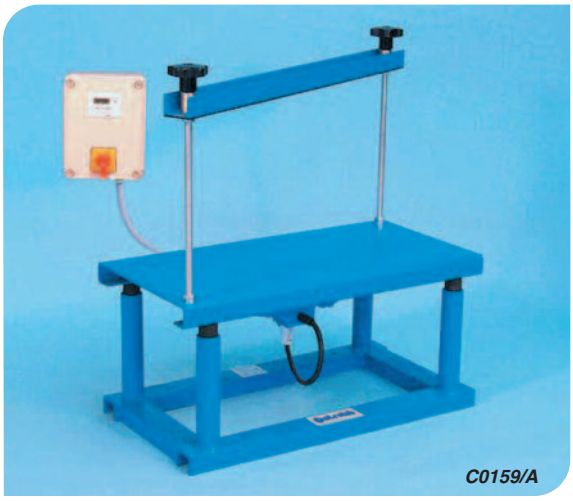
C0159

Vibrating table with control box

According to EN 12390-2 / BS 1881:108

C0159/A

- Vibration rate: 3 000 vibrations per minute.
- Elect. supply: 220 V 50Hz.
- Delivered with tightening clamp.
- Dimensions: 80 x 40 x (h) 41 cm.
- Weight: 82 kg.



C0159/A

Ref.	Vibrating table dimensions in cm	Weight kg	Clamp Ref.
C0159	60 x 40	50	C0280/1
C0159/A	80 x 40	82	C0280/2
C0160	80 x 80	115	C0280/3
C0160/A.1	110 x 50	110	C0280/4
C0160/A.2	110 x 55	150	C0280/5

Accessories

Control box

C0159/R09

With timer for adjusting vibration time from 0 to 60 hours.

Control box

C0159/R010

Idem above with adjustment of vibration rate.

Making test specimens

Universal core drilling machine with electric engine

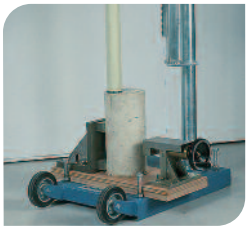
C0322.1

Simple to use and robust for extraction of concrete samples.
- Permits core drilling on 360∞.
- 2-speed electric engine: 420 rpm and 900 rpm.
- Max. core drilling machine Ø : 200 mm.
- Stabilisation foot and jack screw securing system with extension column.
- Elect. supply: 220 V single-phase.
- Power: 2 200 W.
- Dimensions: 750 x 440 x 1 300 mm.
- Weight: 75 kg.

C0322.1

Rapid clamping system for core drilling

C0322.1/R10



C0322.1/R10

Portable core drilling machine with gasoline engine

C0320.2

Particularly suitable for taking road samples.
- Max. core drilling Ø 200 mm, depth 500 mm.
- The core drilling machine head moves vertically with great precision using a rack on lapped shaft.
- Four-stroke electric motor, 5 HP Briggs and Stratton.
- Supply in water of core drilling machine head.
- Dimensions: 1 000 x 460 x 1 120 mm.
- Weight: 90 kg.

C0320.2

Accessories for C0320.2

① Diamond core bits

Length : 500 mm.

Ref.	C0340/5	C0340/6	C0340/7	C0340/8	C0340/9
Ø int. mm	50	75	100	150	200
Ø ext. mm	57	83	108	158	210

② Core bit fixation device (right threading)

Ref.	C0343/0	C0343/1	C0343/2	C0343/3	C0343/4

③ 300-mm Extension piece

C0345M

Universal electric core drilling machine

C0326.2

Economical universal core drilling machine equipped with a new generation motor :
- 2 rotation speeds: 450 rpm and 900 rpm.
- Possibility of core drilling up to 200 mm.
- Elect. supply: 240 V single-phase 50 Hz.
- Power: 1 700 W.
- Weight: 20 kg.

C0326.2

Core drilling machine up to 450 mm

C0326.31 *Fixed frame*

C0326.32 *Multi-directional frame*

Powerful universal core drilling machine equipped with a new generation motor:
- 3 rotation speeds: 300 rpm, 800 rpm and 1 400 rpm.
- Fixed frame (multi-directional as option).
- Possibility of drilling core up to 450 mm.
- Elect. supply: 240 V single-phase 50 Hz.
- Power: 2 800 W.
- Weight: 32 kg.

C0326.31

Accessories

Diamond core bits

Ref.	Diametrer
C0326/50	50
C0326/70	70
C0326/100	100
C0326/125	125
C0326/150	150
C0326/200	200

Steel Care bits extension

Ref.	Length
C0326/R100	100
C0326/R200	200
C0326/R300	300
C0326/R400	400
C0326/R500	500

Aluminium Care bits extension

Ref.	Length
C0326/RALU100	100
C0326/RALU200	200
C0326/RALU300	300
C0326/RALU400	400
C0326/RALU500	500

Making test specimens

Thermostatic curing tank

C0308

For approx. 20 test specimens (16 X 32 cm).
- Temperature regulation at 20°C with immersion control thermostat.
- Power: 2 000 W .
- Elect. supply: 220V single-phase.
- Tank dimensions: 940 x 650 x 500 mm.
- Weight: 60 kg.

C0308

In thick plastic

C0309

Suitable for approx. 30 test specimens.
- Temperature regulation at 20°C with immersion control thermostat.
- Power: 2 000 W.
- Elect. supply: 230V single-phase.
- Tank dimensions:
  int. : 1 130 x 730 x 560 mm.
  ext. : 1200 x 800 850 mm
- Weight: 70 kg.

Steel Thermostatic curing tank

According to EN 12390-2 / ASTM C31, C192, C511
AASHTO T23 / NF P18-404 / BS 1881:111
UNE 7240

C0305/1

Steel Thermostatic curing tank for conservation of test specimens at 20°C. Can hold about 30 specimens on one level and 56 on 2 levels with removable devices **C0306/1**.
Temperature regulation with immersion control thermostat.
- Dimensions: 1500 x 750 x 750 mm.
- Power supply: 230 V 50 Hz single-phase.
- Power: 2000 W.
- Weight: 120 kg.

C0305/1

Humidifier

C0188.1

Air humidifier for test specimen conservation chamber. Used to obtain a 95% relative humidity (RH) rate by water atomisation in particles of Ø 1 µ.
- Yield: 0.8 kg/hour.
- Air flow rate: 200 m3/hour.
- Max. water pressure: 1.5 bars.
- Elect. supply: 220 V single-phase 50 Hz.
- Dimensions: H 300 mm - Ø 420 mm.
- Weight: 3.8 kg.

C0188.1

C0188.6

Humidifier

C0188.6

- Air flow rate: 150 m3/hour.
- Dimensions: Ø 360 mm x 420 mm.
- Weight: 3.8 kg.

Accessoires pour bains thermostatiques

Plastic cover

C0308/01 et C0309/01

For conservation box.

Heating resistance

C0305/R01.1

With control thermostat.
Used to conserve the temperature of a tank at 20°C. Can be adapted to any existing tank.
- Power : 2000 W - 220 V single-phase.


C0305/R01.1

Analogic heating resistance

C0305/R01.12

Replacement resistance (1500w) for thermostatic bath. Total height 85 cm including 10 cm thermoregulator.
- Length: 50 cm.

Digital heating resistance

C0305/R02.2

Ensuring better temperature accuracy.
- Power supply: 230 V 50/60 Hz 2000 W.

C0305/R02.2

Test specimen lifting system

C0121/9

Accessories for humidifier

Water expansion valve

C0188.3

With manometer for suppling running water.

Electronic regulator

C0188.1/R03

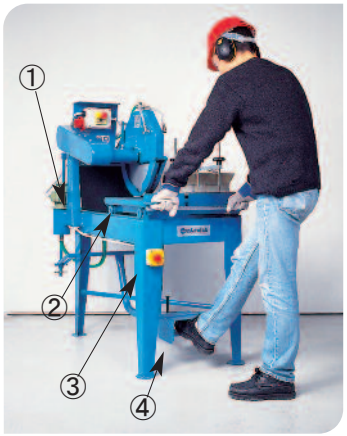
With moisture sensor and base, used to regulate hygrometry.

Surfacing of test specimens

Concrete saws

These machines have been designed to cut, in a precise manner, all types materials, in particular concrete and rock up to Ø 180 mm without turning (with diamond blades of different diameters). Fitted with a spraying system with pump unit.

- Supplied without blades or clamping system.
- Elect. supply: 380 V three-phase.



Meets all **CE** safety directives such as :

① Blade protection shield.
② Knee-level emergency stop button.
③ Pedal for driving in the blade.
④ Wheeled trolley for displacing the materials.

Standard model

C0350

- Power: 2 200 W.
- Blades: 350 mm or 450 mm.
- Dimensions: 1 390 x 700 x 1 200 mm.
- Net weight: 130 kg.

Large model

C0350/600

- Power: 3 300 W.
- Blade 500 mm.
- Dimensions: 1 400 x 700 x 1 400 mm.
- Weight: 150 kg.

Common accessories for concrete saws

Diamond blade

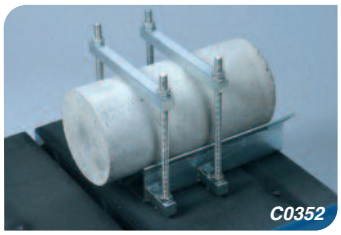
C0350/2	Ø 450 mm
C0350/3	Ø 350 mm

Accessories for C0350/600

Blade

C0350/5	Ø 500 mm

To be used with safety glasses, ear protector and gloves. Ask for info.



Tightering system

C0352

For cutting cylindrical cores up to Ø 200 mm.

- Dimensions : 400 x 240 x 400 mm.

System for cutting irregular samples (stones, etc.)

C0353

- Dimensions : 400 x 300 x 400 mm.

Lengthwise cutting system

C0356

Used to cut a 16 mm x 32 mm test specimen lengthways and widthways.
Compatible only with **C0350/600**

Portable saw

C0351

For cutting samples up to.

- Ø 350 mm of blade.
- Rotating speed: 3 900 rpm.
- Elect. supply: 220 V - 2 000 W.
- Fixation system supplied.
- Blade not supplied.
- Dimensions: 560 x 460 x 390 mm.
- Weight: 20 kg.

Indispensable accessory

Diamond blade

C0350/3	Ø 350 mm

Surfacing of test specimens

Appliance for rectifying concrete test pieces

C0202/SA

This compact machine enables a standard cylindrical or cubic test specimen to be corrected.

Type of test specimens :

- Cylindrical: 16 x 32 et 11 x 22.
- Cubic: 20 x 20.

Test specimen placed horizontally.
Spindle fixed high fitted with a solid abrasive head.
Automatic sideways movement by gear motor.
Mechanical guidance by bushes and treated shafts.
The automatic programmable test specimen advances on the machine: height and depth of grooves.
Sprayed in a closed circuit with settling basin.
Machine entirely covered with safety contact when the door is opened. Supplied with diamond disk.

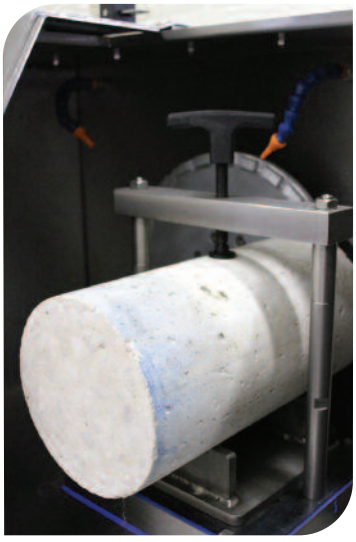
Characteristics :

- Passage depth from 0.1 to 1 mm.
- Rotating speed of the diamond disk 1400 rpm.
- Feed rate of 1.5 m/min with automatic reverse at the end.
- The spindle is automatically stopped by an emergency stop brake.
- Work table enabling test pieces of Ø 220 and 320 mm to be fastened.
- Ø of grinding wheel 310 mm (grinding wheel supplied).
- Fastening system to be provided in addition.
- Power supply: 380 V three-phase.
- Power : 4 kW.
- Dimensions : 1150 x 750 x 1700 mm.
- Weight : 350 kg.

C0202/SA

AVAILABLE DURING 2012
The manual or automatic test piece turner

Control box



Accessory
Diamond disk

C0202/R01

For machine **C0202/SA**.
Solid disk with diamond sectors Ø 310 mm.

Accessory for C0201.2
Diamond sectors

C0201.2/R01

To correct concrete test specimens with "vertical" grinder **C0201.2 C0202/SA** (quantity required: 8 sectors).

With sulphur

Surfacing cylindrical concrete test specimens

C0121/4.7

5-litre heating box

5-litre heating box
Useful capacity of 2.5 l.
For surfacing cylindrical specimens of concrete and any other type of specimens.
In conformity with safety standards.

- Thermostat limited at 140°C to prevent any possibility of inflammation of the sulphur.
- Weight: 2,5 kg.

C0121/4.7

- Oil bath heating box

C0121/4.6	5 litres
C0121/4.10	10 litres

Surfacing products

Sulphur mortar

A type for normal concrete.

C0121/1A	10-kg bag

B type for R.C.H.

C0121/1.20	20-kg can

C0121/1.20 C0121/1A - C0121/1.1

Flower of sulphur

C0121/1.1	25-kg bag

For standard concrete.

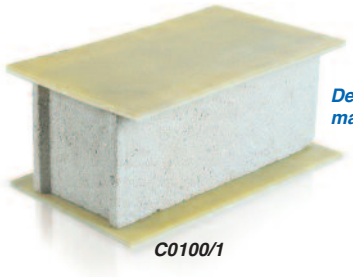
Plate test

Set of elastomer plates

CERIB-CEMP patent

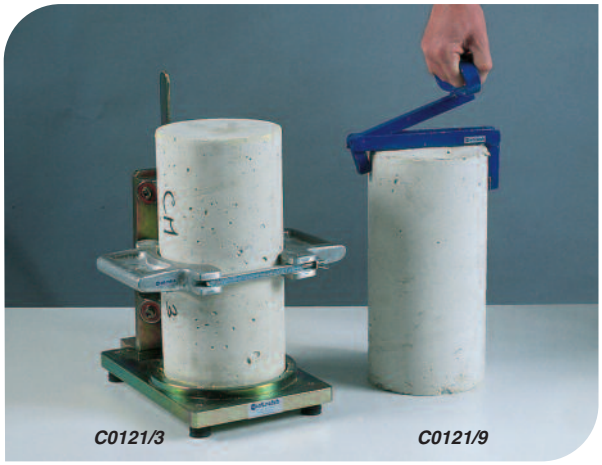
C0100/1

For compression of blocks.
Replaces traditional surfacing (neat cement or sulphur).



C0100/1

Delivered with user's manual and instructions



C0121/3 C0121/9

Capping retainers for rapid surfacing

According to ASTM C1231

C0107.1

Ø 160 x 320 mm.

Neoprene pads

According to ASTM C1231

C0107.1/R01	60 shore
C0107.1/R02	70 shore

C0107.1

C0107.1/R01

Warning the distance between platens must be greater than 340 mm.

Grip for seizing test specimens

C0121/3

Ø 16 x 32 cm.

Lifting device

C0121/9

For test specimen Ø 16 cm x 32 cm.

Surfacing of test specimens

Mobile filtration hood

D3601

«Alegro» type
Particularly adapted for recuperation of sulphur vapours during test specimen surfacing tests.

Characteristics :
- Lighting: striplight: 2 x 40 W.
- Functioning indicator lamp.
- Upper evacuation output Ø 120 mm.
- Power: 125 W x 2 motors.
- Elect. supply: 220/240 V - 50/60 Hz.
- Suction capacity: 400 m3/hour.
- 2 vertical turbines.
- 3-speed selector.
- Dimensions: 596 x D00 x 800 mm (useful height: 540 mm).

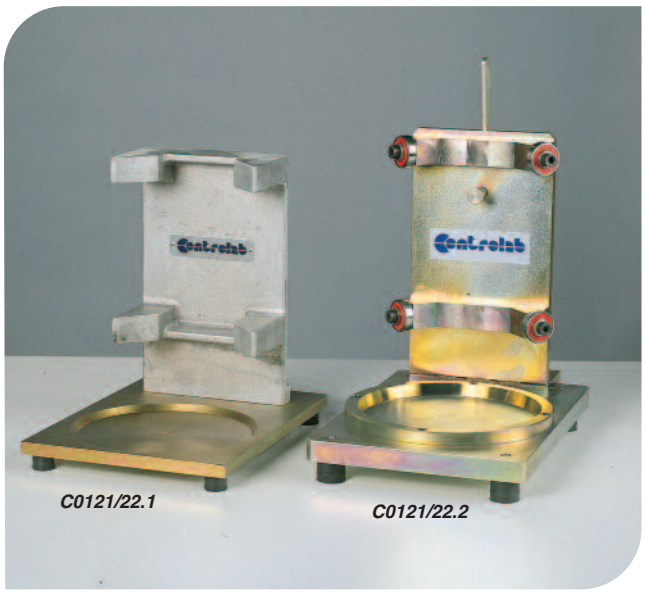
D3601

Accessory

Extraction pipe

D3601/R03

To connect the hood to the exterior: 3 m.



C0121/22.1 *C0121/22.2*

Surfacing square for test specimens:

Standard with fixed supports

Ref.	Ø x height in cm	Weight kg
C0121/25	6 x 12	1
C0121/28	15 x 30	1,3
C0121/22.1	16 x 32	6,2
C0121/22.6	25 x 50	30

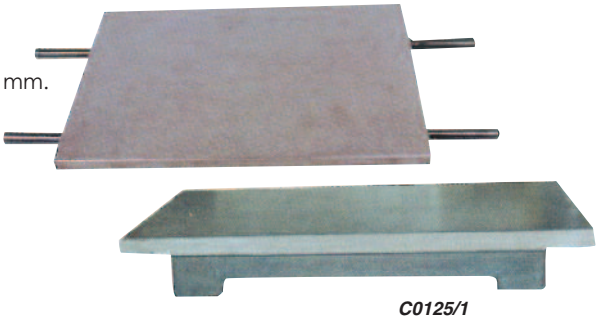
With rollers and lever-type unmoulding system

Ref .	Ø x height in cm	Weight kg
C0121/24.1	11 x 22	15
C0121/21.2	15 x 30	17
C0121/22.2	16 x 32	17

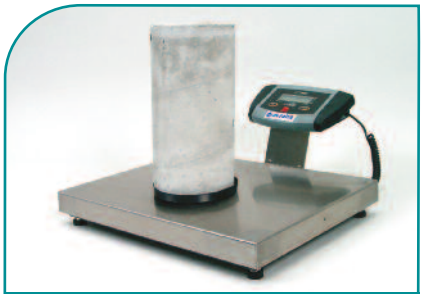
Cast iron surfacing table

C0125/1

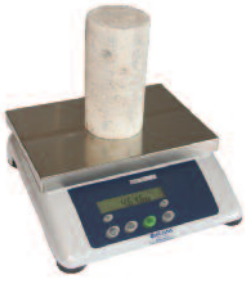
Particularly used for surfacing blocks.
- Dimensions: 600 x 400 mm.
- Weight: 50 kg.



C0125/1



Weighing concrete test specimens pages 253 to 255.



Calibration poad cells

According to EN 10002-3 / ASTM E74

Classe 1 or AA

Ref.	Cap kN	Ø x Ø H mm
E0102.144	100	105 x 164
E0102.146	300	140 x160
E0102.148	1 000	150 x 180
E0102.149	2 000	135 x 200
E0102.150	3 000	135 x 200

Classe 2 or A

Ref.	Cap kN	Ø x Ø H mm
E0101.143	50	82 x 59
E0101.146	300	135 x 200
E0101.148	1 000	135 x 200
E0101.149	2 000	135 x 200
E0101.150	3 000	135 x 200

Calibration case

According to EN 12390-4 / ASTM E4

E0101/2012

This case is used for the calibration and checking of class 1 and 2 compression machines.

- For each use, memorisation of 3 calibration programmes with 10 values each.
- Connection possible with any calibration cell on the table above.
- Graphic screen, 320 x 240.
- Direct display of force in kN, lb or tons.
- Memorisation of 525 000 points.
- Connection of up to 10 cells.

Delivered without printer, in transport case.

- Elect. supply: 240 V single-phase 50 Hz.
- Dimensions: 360 x 300 x 200 mm.
- Weight: 5 kg.

E0101/2012

Data acquisition software for PC

According to EN 12390-4 / ASTM E4

E0101/2012/L

for processing your calibration results.

Connecting all on request

E0101/F

vFootmeter: compression load frames stability verification tester

According to EN 12390-4 / BS 1881:115 / DIN 51302

E0101/F ***The complete unit***

Measurement apparatus with microprocessor

Simultaneous readout of the 4 generators.
The values are memorised and the calculation results are directly displayed.

- Elect. supply: 240 V single-phase 50 Hz.
- Dimensions: 450 x 350 x 160 mm.
- Weight: 8 kg.

Measurement cell

Capacity 3 000 kN.
Equipped with 4 gauge bridges to measure deformation on the 4 generators.
A fifth gauge is used to calibrate the machine.

Positioning assembly

To ensure correct positioning of the cell.

Mechanical strength

Control and piloting test machines

C0008/R02

2 000 kN analogue manometer

C0008/R02

Graduated in kN and MPa according to the type of test specimen crushed.
Display of force and maximum resistance applied.
Protection against exceeding load.
Delivered with frame.

Control unit Cyber-Plus Evolution

P0050/V2010.33

- LCD touch screen (320 x 240 pixel).
- 5-key keypad.
- Thermal paper printer.

Opportunity to :

- Follow up to 3 machines (optional).
- Ratemeter.
- Connecting to a PC (Ethernet).
- Display units
(kN, kg, lb, t, MPa, N/mm2, psi, b/In2 ...).
- Display of the curve load / time.
- Storage on USB key.
- Separate calibration.
- 8 analog inputs.
- 1 Ethernet output 100Mbit.
- 2 USB outputs.
- 1 SD Card slot.
- Power supply: 230 V single phase 50Hz.
- Power requirement: 70 W.
- Dimensions: 245 x 55 x 260 mm.
- Weight: 5 kg.

Digital Automatic unit Servo-Plus Evolution

P0051.4T

As standard, enslavement of a machine.
Optional possibility of 2 or 3 machines.
Class 1

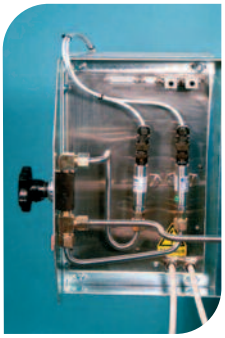
This system includes:

- A hydraulic unit.
- A control system
- A control system with:
  - Touchscreen LCD (320 x 240 pixel).
  - 5-key keypad.
  - Thermal paper printer.

Opportunity to:

- Enslavement of a machine in force.
- Ratemeter.
- Connecting to a PC (Ethernet).
- Display units
(kN, kg, lb, t, MPa, N/mm2, psi, b/In2 ...).
- Display of the curve load / time.
- Storage on USB key.
- Separate calibration.
- 8 analog inputs.
- 1 Ethernet output 100Mbit.
- 2 USB outputs.
- 1 SD Card slot.
- Power supply: 230 V single phase 50Hz.
- Dimensions: 420 x 290 x 1120 mm.
- Weight: 60 kg.

P0050/V2010.33 P0051.4T



2 scale measurement system

C0097

Used to improve measurement precision, particularly for measurements at the bottom of the scale.
This system offers a very high level of precision for tests in compression on mortar, flexion on beams and splitting.

STANDARD range machine

Capacity 1 300 kN - 1 500 kN

4 column frame

According to NF P18-411 / EN 12390-4 / ASTM C39
AASHTO T22 / UNE 83304

- Plate Ø: 165 mm.
- Analogical manometer:
  - graduated in kN and Mpa.
  - force and resistance display.
  - protection against exceeding load.

Detail C0032M

Detail C0039E

Manual pump C0032M

C0039E

Ref.	Capacity kN	Pumping unit	Measurement apparatus	Ratemeter
C0032M	1 300	Manual	Manometer	No
C0032E	1 300	Electric	Manometer	No
C0032S	1 300	Electric	Cyber-Plus	Yes
C0032N	1 300	Controlled	Servo-Plus	Yes
C0039M	1 500	Manual	Manometer	No
C0039E	1 500	Electric	Manometer	No
C0039S	1 500	Electric	Cyber-Plus	Yes
C0039N	1 500	Controlled	Servo-Plus	Auto

Capacity 2 000 kN - 3 000 kN - 5 000 kN

High rigidity 4 column frame

According to EN 12390-4 / ASTM C39
AASHTO T22 / NF P18-411 / UNE 83304 / BS 1610

- Distance between plates: 340 mm.
- Ram travel: 55 mm.
- Compression plates Ø 287 mm, rectified, hardness: 60 RCH.
- Ram travel control system.
- Hydraulic oil storage tank with level control.
- Cyber-plus or servo-plus data acquisition system.
- Color touch screen.
- USB and SD CARD output.

C0049S

C0070N

Ref.	Capacity kN	Pumping unit	Measurement apparatus	Ratemeter
C0049M	2 000	Manual	Manometer	no
C0049E	2 000	Electric	Manometer	no
C0049S	2 000	Electric	Cyber-Plus	Yes
C0049N	2 000	Controled	Servo-Plus	Auto
C0070M	3 000	Manual	Manometer	no
C0070E	3 000	Electric	Manometer	no
C0070S	3 000	Electric	Cyber-Plus	Yes
C0070N	3 000	Controled	Servo-Plus	Auto
C0088N	5 000	Controled	Servo-Plus	Auto

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Mechanical strength

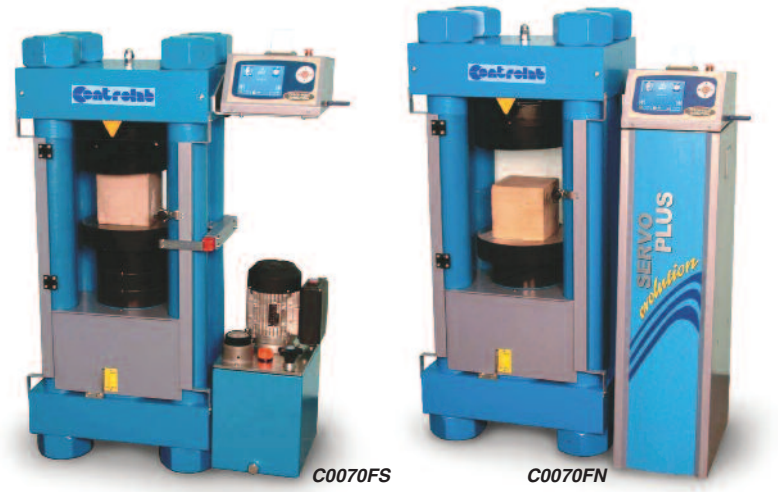
FOOTMETER range machine

Capacity 2 000 kN - 3 000 kN

Footmeter compression machine

According to EN 12390-4 / NF P18-411 / BS 1881:115
DIN 51220, 51302 / UNE 83304 / ASTM C39 / AASHTO T22

High rigidity 4 column frame.
- Distance between plates: 336 mm.
- Ram travel: 55 mm.
- Compression plates Ø 287 mm x 60 mm, rectified, hardness: 60 RCH.
- Ram travel control system.
- Hydraulic oil storage tank with level control.
- Cyber-plus or Servo-plus acquisition system.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 750 W.



C0070FS *C0070FN*

Ref.	Capacity kN	Pumping unit	Measurement apparatus	Test specimen	Dimensions L x l x h in mm	Weight Kg
C0049FS	2 000	Electric	Cyber-Plus	16 x 32 or 20 block	690 x 400 x 1400	920
C0049FN	2 000	Controled	Servo-Plus	16 x 32 or 20 block	690 x 400 x 1400	920
C0070FS	3 000	Electric	Cyber-Plus	16 x 32 or 20 block	750 x 450 x 1500	1 250
C0070FN	3 000	Controled	Servo-Plus	16 x 32 or 20 block	750 x 450 x 1500	1 250

UNIVERSAL

Capacity 3 000 kN

Footmeter compression machine

For test specimens: 16 x 32 and 25 x 25 block.

- Chrome-plated columns.
- Space between plates for blocks: 290 mm.
- Space between cylindrical plates: 336 mm.
- Compression plates for 16 x 32, Ø 287 mm x 60 mm.
- Compensation ships on request.
- Elect. supply: 230 V single-phase 50 Hz.
- Power: 750 W.

C0086FN

Ref.	Capacity kN	Pumping unit	Measurement apparatus	Test specimen	Dimensions L x l x h in mm	Weight Kg
C0086FS	3 000	Electric	Cyber-Plus	16 x 32 or 25 block	750 x 520 x 1 500	1 400
C0086FN	3 000	Controled	Servo-Plus	16 x 32 or 25 block	750 x 520 x 1 500	1 400

HPC

Capacity 3 000 kN - 5 000 kN

Footmeter compression machine

According to EN 12390-4 / NF P18-411 / BS 1881:115
DIN 51220, 51223, 51302

For high performance concretes.
- Space between cylindrical plates: 411 mm.
- Space between columns: 321 mm.
- Compression plates: Ø 316 mm x 60 mm.
- Elect. supply: 240 V single-phase 50 Hz.
- Power: 750 W.

C0070HPN *C0070HP*

Ref.	Capacity kN	Pumping unit	Measurement apparatus	Dimensions L x l x h in mm	Weight Kg
C0070HP	3 000	Electric	Cyber-Plus	725 x 710 x 1 570	2 500
C0070HPN	3 000	Controled	Servo-Plus	725 x 710 x 1 570	2 500
C0088	5 000	Electric	Cyber-Plus	750 x 750 x 1 700	4 000
C0088S	5 000	Controled	Servo-Plus	750 x 750 x 1 700	4 000

High-performance footmeter machines

Compact Compression Testing Machines 2000 - 3000 kN

Ask for info

Compact family of concrete compression testing machines.
The frame is a high stiffness 4-column construction with single acting ram, lower fixed platen and upper spherically seated platen with oil filled ball seat assembly. The chassis contains in the lower part the integrated hydraulic power pack with servo-valve assembly and in the upper part the digital controller and strip printer.

Compression Testing Machines 3000 - 6000 kN

Ask for info

This rigid four-column load frame with single acting ram, lower fixed platen and upper spherically seated platen with oil filled ball seat. The columns are chromium plated and the piston is hardened and micro finished. The machine is precision aligned and cylinder test conform.

High Strength Brittle Materials Testing Machine 4000 kN pour BHP

According to EN 772-1

Ask for info

Specially designed for high strength brittle materials.
Samples include concrete, masonry units, bricks, clay blocks, rocks a.s.o.
Very high stiffness 4-column construction.
The upper compression platen assembly is specially strengthened with bearings at the upper platen, bearings at the upper crosshead and absorbing elements with shock resistant springs.

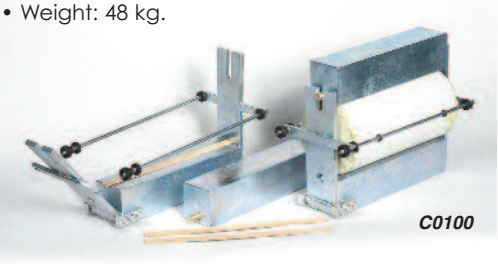
Mechanical strength

Device for splitting test

According to EN 12390-6 / ASTM C496
NF P18-408 / BS 1881: 117

C0100

Used to perform splitting tests on test specimens. The system is positioned between the plates of any compression test press with a space of 340 mm.
- Dimensions: 180 x 360 x 320 mm.
- Weight: 48 kg.


C0100

Splitting test system

According to EN 12390-6 / ASTM C496

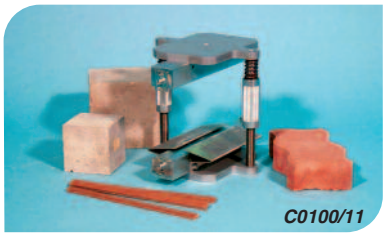
C0100/10

- Weight: 17 kg.
- For test specimens: 100 x 200 to 160 x 320 mm.

C0100/11

- For paving stones.


C0100/10


C0100/11

Accessories:
Loading strips (set of 100)

Ref.	Dimensions cm	Characteristics	Standards
C0090/E3	370 x 15 x 3	plywood	EN 13286-42
C0090/E7	270 x 10 x 3	plywood	EN 13286-42
C0090/E9	116 x 3,6 x 3	plywood	EN 13286-42
C0090/E10	370 x 10 x 3	hardboard	EN 12390-6
C0090/E11	270 x 180 x 3	plywood	EN 13286-42

Auto-centering device

According to EN 12390-5 / NF P18-407 / UNE 83305
ASTM C78,C293 / AASHTO T97 / BS 1881:118

C0107/01

For 150 x 150 or 100 x 100 mm specimens.
Platen Ø 287 mm.


C0107/01

3 or 4 point flexion system

According to EN 12390-5 / NF P18-407 / UNE 83305
ASTM C78,C293 / AASHTO T97 / BS 1881:118

C0106

For prism: 15 x 15 x 56.
Lateral displacement knife. Articulated upper and lower knives. Possibility of making flexion in 3 points. To be inserted in the test space of a compression machine fitted with an adequate calibration scale (between 0, 100 or 200 kN maximum).
- Weight: 27 kg.


C0106

Accessories for test machines
Distance pieces for crushing different size test specimens

(see table below)

Ref.	Diameter	Height
C0111.21	Ø 140 mm	50 mm
C0111.3	Ø 140 mm	100 mm
C0111	Ø 140 mm	176 mm
C0111.1	Ø 140 mm	176 + 50 mm
C0111.2	Ø 140 mm	226 mm

Ref.	Diameter	Height
C0111.22	Ø 200 mm	50 mm
C0111.26	Ø 200 mm	76 mm
C0111.4	Ø 200 mm	126 mm

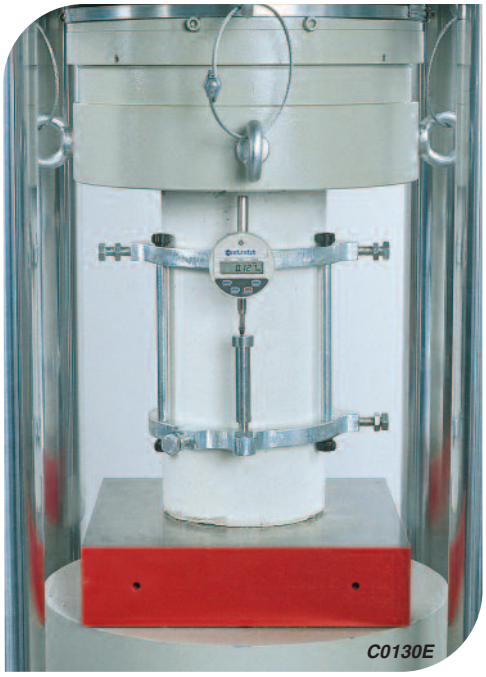
Presses Footmètre

Ref.	Diameter	Height
C0111.24	Ø 210 mm	50 mm
C0111.25	Ø 210 mm	76 mm

Mechanical extensometer

C0130E

For measurement of the deformation of a cylindrical test specimen during compression test. Composed of a stirrup with 1/1 000 electronic dial gauge and printer output.


C0130E

Module en compression

Modulus of elasticity in compression on cylindrical test specimens

C0230.1

- Data acquisition system with automatic tracing of the curve of the modulus of elasticity in compression on test specimens Ø 16 cm H 32 cm

Including :

- Clump with three LVDT sensors for acquisition of displacement.
- Pressure sensor to be inserted in the hydraulic circuit.
- Conditioner with four inputs.
- Acquisition card with software.

NEW

Universal extensometer

According to ASTM C469 / ISO 6784 / BS 1881:121 / DIN 1048:1

C0134

Made of two anodized aluminium pieces.
To place on the cylinder (80 mm to 160 mm).

- Gauge length adjustable from 50 to 160 mm.
- Travel: ± 1,5 mm.
- Sensitivity: less than 0,01 micron.
- Weight: 1 kg.

Supplied complete with reducing block for mortar prisms, elastic straps, carrying case.


C0134

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Mechanical strength

Adherence

Pull off dynamometer

According to XP P18-853 / EN 12808-1

To measure the adherence of a product on its support.
The tensile stress in daN is exerted on a pellet that is integral with the apparatus and whose surface is known.

Ref.	Capacity daN
C0215/B.1E	100
C0215/C.1E	250
C0215/D.1E	500
C0215/E.2E-5	500
C0215/E.2E	1 600
C0215/G.1E	5 000

Accessories

Ref.	thread	Pellet
C0215/8.1	M8	Ø 20 mm
C0215/8.2	M12	Ø 20 mm
C0215/7.1	M8	Ø 50 mm
C0215/7.2	M12	Ø 50 mm
C0215/8.1C	M8	□ 20 mm
C0215/7.1C	M8	□ 50 mm
C0215/7.2C	M12	□ 50 mm
C0215/7.4C8	M8	□ 100 mm
C0215/7.4C	M12	□ 100 mm

C0215/9.1	*Epoxy adhesive*	*1 Kg*	
C0215/R01	*Patella*	*1600 daN*	*M8*
C0215/R02	*Patella*	*1600 daN*	*M12*

Accessories for C0215/E.2E

Ref.	Dimensions mm	Matière
C0215/20	Ø 20 thk. 20	Alu
C0215/50	Ø 50 thk. 20	Alu
C0215/51	Ø 50 thk. 20	Steel

C0215/E.2E


C0215/B.1E - G.1E

Electronic measurement of the force

Pull off dynamometer with speed control in MPa/s or mm/s

According to ISO 4624 / EN 1015-12,1348 / BS 1881
ASTM C1583,D4541 / DIN 1048

C0215/E.1P ***Ask for info***

Dynamometer with force and displacement sensor for acquisition of results and transfer to PC with RS 232C or to printer.

- Capacity: 16 kN - class A.
- Force measurement with electronic case.
- Central crank to completely extract the bushings.
- Ratemeter to control:
  - the loading speed in MPa/s.
  - the displacement speed in mm/s.
- Software for acquisition of the force according to of the displacement.

Pull off dynamometer with speed control in MPa/s only

C0215/E.1N ***Ask for info***

Idem **C0215/E.1P**, but without displacement detector.

C0215/E.1P et C0215/E.1N

Deformation of structures

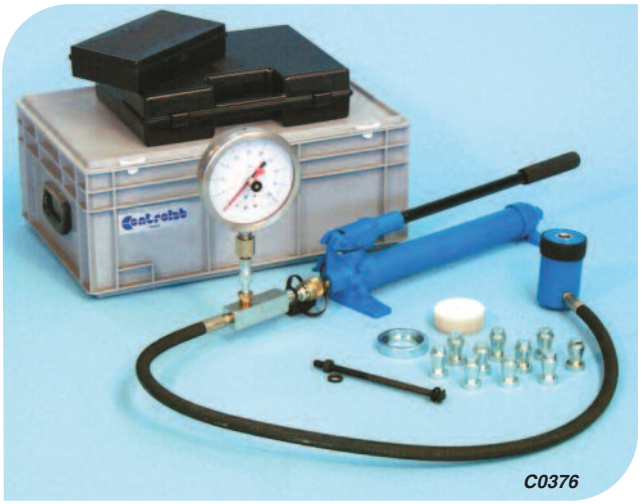
Pull out test appartus

According to EN 12504-3 / ASTM C900 / BS 1881

C0376

The extraction of an insert in hardened concrete is used to evaluate its mechanical resistance strength. The apparatus is composed of the following elements:

- 1 hydraulic cylinder.
- 1 pump with manometer, 60 kN.
- 1 set of inserts to be positioned at concrete pouring.
- Support ring.
- Dimensions : 740 x 300 x 255 mm.
- Weight: 18 kg.



C0376

Accessories

Set of 25 inserts

C0376/1

Abrasion testing machine

The test consists in using by abrasion the upper face of a test specimen with the help of an abrasive contained in a hopper.

Abrasion testing machine for paving stones

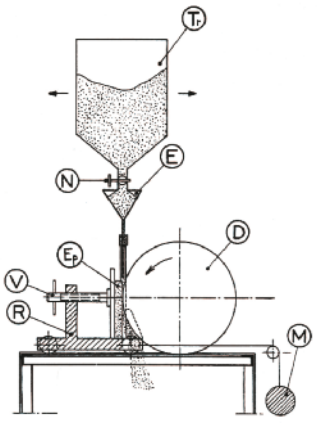
According to EN 1338, EN 1339

A0112/70

Composed of:

- Abrasive funnel.
- Abrasive disc, Ø 200 mm, thickness 70 mm.
- Piloting system with electronic variator for speed adjustment.
- Counter to set the number of revolutions of the disc.
- Dimensions : 630 x 650 x 900 mm.
- Weight: 100 kg.

A0112



Schematic diagram of abrasion testing machine

D - wear drum
R - test specimen holder carriage
V - securing screw
M - counterweight
Tr - adjustable hopper
E - constant level funnel
D - adjustment butterfly
Ep - test specimen

Abrasion testing machine for ceramic tiles and floor tiles

According to EN 102 , EN 12808-2 / CEN 178 / ISO 10545-6

A0112

Design identical to that of model C0112/70, but with abrasive disc: Ø 200 mm, thickness 10 mm.

Consumables

Abrasive materials.

A0112/R01	**5kg**

Böhme abrasion test machine

According to EN 1338,1339,13892-3,1338:2004,14157 / DIN 52108

C0129

Measurement of volume lost after abrasion, composed of :

- Horizontal steel disc, rotation speed : 30 rpm.
- Stop in rotation after 22 revolutions.
- Adjustable force of 294 N +- 3 N.
- Elect. supply: 240 V single-phase 50 Hz.
- Dimensions: 1 500 x 1 000 x 850 mm.
- Weight: 250 kg.

C0129

Abrasive sand

C0129/1	**25 kg bag.**

Precast concretes

Compression machine for tests on concrete blocks, capacity 2 000 kN or 3 000 kN

According to EN 772-1 / ASTM C39,E447 /AASHTO T22
NF P18-411 / BS 1610,6073 / UNE 83304

C0085/5SN

General characteristics:
- High rigidity 4-column frame.
- Compression plate: 510 x 310 mm.
- Distance between fixed plates : 335 mm or adjustable option.
- Elect. supply: 230 V single-phase 750 W.

C0085/5SN

Optional adjustment screw

Machine with manometer

Controlled machine

Ref.	Capacity kN	Functioning	Measurement apparatus	Adjustment screw	Dimensions mm	Weight kg
C0085MO	2 000	Manual	Manometer	No	870 x 600 x 1 400	900
C0085SO	2 000	Cyber-Plus	Electric	No		
C0085NO	2 000	Servo-Plus	Controlled	No		
C0085/5	3 000	Manual	Manometer	No	900 x 600 x 1 500	1 200
C0085/5S	3 000	Cyber-Plus	Electric	No		
C0085/5SN	3 000	Servo-Plus	Controlled	No		
C0085M	2 000	Manual	Manometer	Yes	870 x 600 x 1 600	900
C0085S	2 000	Cyber-Plus	Electric	Yes		
C0085N	2 000	Servo-Plus	Controlled	Yes		
C0085/5V	3 000	Manual	Manometer	Yes	900 x 600 x 1 700	1 200
C0085/5SV	3 000	Cyber-Plus	Electric	Yes		
C0085/5SNV	3 000	Servo-Plus	Controlled	Yes		

Closed frame flexion machine

According to EN 12390-5 / BS 1881:118 / NF P18-407
UNE 83305 / AASHTO T97 / ASTM C78, C293 / DIN 51227

Manual	Automatic
C0090/2	C0090/3

For precast concretes, normalised tests of
7 x 7 x 28 cm to 15 x 15 x 75 cm.
- Capacity 150 kN.
- Jack in lower part, stroke .
- 4 adjustable supports.
- Passage between uprights: : 24 cm.
- Dimensions: rollers: Ø 4 x 16 cm.
- Space between rollers: 16 cm.
- Adjustment upper rollers from 4 to 15,5 cm.
- Adjustment lower rollers from 10 to 45,5 cm.
- Elect. supply: 240 V single-phase 50 Hz.
- Power: 750 W.
- Weight: 190 kg.
- Dimensions: 540 x 400 x 920 mm.

C0090/3

C0091/3

Goose neck flexion machine

According to EN 12390-5 / EN 1340:4 / BS 1881:118,6073-1,7263
NF P18-407,P98-302 / UNE 83305 / AASHTO T97 / ASTM C78, C293 / DIN 51227

Manual	Automatic
C0091/2	C0091/3

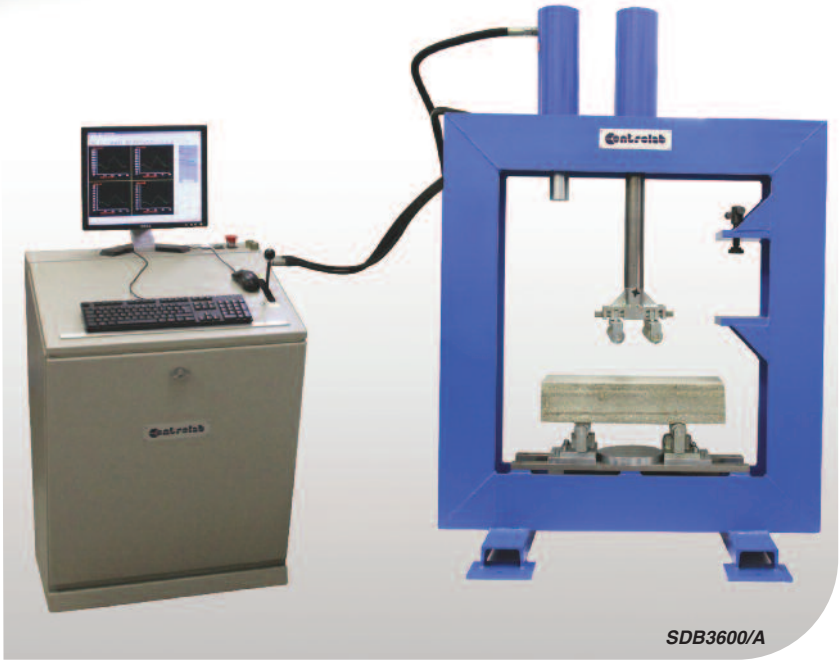
For precast concretes, tests of slump, interjoist, edge, etc.
Normalised tests on test specimens, max. 20 x 20 x 80 cm.
- Jack in upper part, stroke 11 cm.
- 4 adjustable supports.
- Dimensions: rollers: Ø 3 x 55 cm.
- Space between upper and lower rollers: 26 cm.
- Adjustment upper rollers from 7.5 to 18 cm.
- Adjustment lower rollers from 7.5 to 52.5 cm.
- Elect. supply: 240 V single-phase 50 Hz.
- Power: 750 W.
- Weight: 350 kg.
- Dimensions : 1400 x 1200 x 1430 mm.

Didactic flexion machine

According to EN 12390-5 / NF P18-413

SDB3600/A

Separate control console with PC.
Measurement by electronic pressure sensor.
- Capacity: 200 kN.
- Jack stroke: 160 mm.
- 3 or 4 adjustable supports.
- Space between uprights: 650 mm.
- Roller dimension: Ø 40 mm.
- Elect. supply: 400 V three-phase 50 hz.
- Power: 1 000 W.
- Weight: 80 kg.
- Dimensions: 960 x 1 040 x 140 mm.



SDB3600/A

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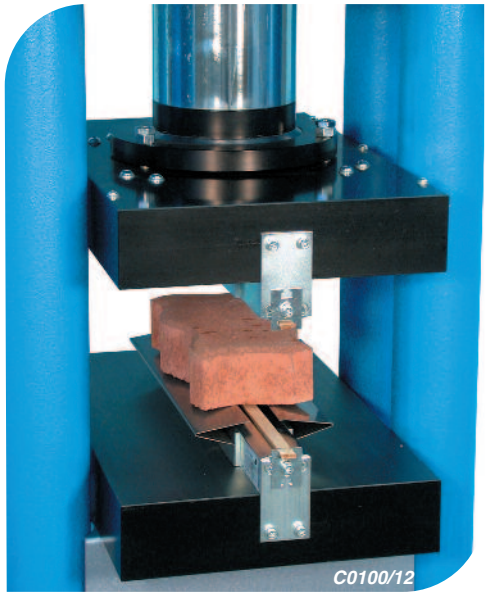
Precast concretes

Accessory for road kerbs

According to EN 1340

C0091/13

This apparatus is composed of a steel baffle plate mounted n an articulated base.
It is used to apply a flexion force in 3 points without torsional stress.
It is fixed on the upper part of flexion machine type **C0091/2** or **C0091/3**



Splitting test system

According to EN 1338, EN 12390-6

C0100/12

For 300 x 500 mm block or 100, 120 and 200 mm cube.
The device is directly fixed on the compression plates of a 2 000 kN or 3 000 kN capacity machine.
The machine must be equipped with the 2 scale measurement system opposite (**C0097**).

2 scale measurement system

C0097

Used to improve measurement precision, particularly for measurements at the bottom of the scale.
This system offers a very high level of precision for tests in compression on mortar, flexion on beams and splitting.

Ref.	Type of test	Reference
Blocks	Compression 1 500/3 000 kN	**Ask for info.**
Pipes	Frame 200/400 kN	
Entrevous	(concrete) Flexion 10 kN	
Cloture	Embedding 10 kN	
Road kerbs	Flexion 100 kN	
Regard	Punching 50 / 400 kN	
Concrete tils	Flexion 500 daN	
Chimney pipes	Compression 1 500 kN	
Paving blocks	Splitting 600 kN Compression 1 500 kN	
Flagstones	Flexion 150 kN	

Special tests

Compression Testing Machines
1000 - 10 000 kN

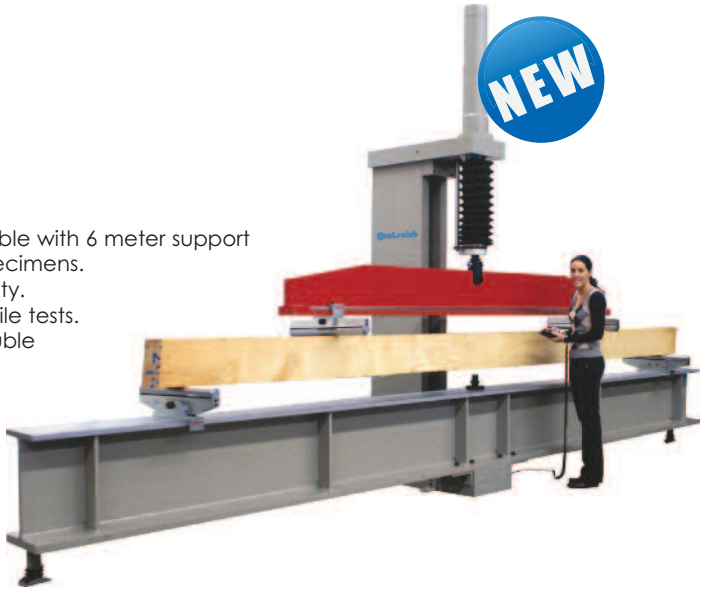
Ask for info

These machines feature adjustable crosshead facility by two long stroke actuators and passive clamping system onto the hardened and chromium plated columns. It allows quick, easy and accurate positioning of upper crosshead specially useful when sample heights are often different.
The load frames have superior axial and lateral stiffness and precision aligned for advanced testing of building materials.

Creep Testing Machines
100 -1000 kN

Ask for info

For creep tests on building materials by means of a pressure exerted load. Test can be carried out either on a single samples or on several samples in series. Test duration up to several years.
Hydro pneumatic loading device is integrated in the base of the machine. The force is kept constant by a compressed gas storage system. The load cylinder is put under pressure by a hand or motor driven pump. Any number of machines can be driven by one pump.



Machine with Extra Wide Bending Table
50 - 200 kN

Ask for info

Very universal bending testing machines with bending table with 6 meter support length for testing of large concrete, timber and other specimens.
Two swivelling supports with continuously adjustable facility.
The machine can also be used for compression and tensile tests.
The machine has a rigid c-shape construction and a double acting actuator with anti-rotation system to prevent the natural tendency to rotate.

Concrete Pipe Crushing Testing Machines
500 -1500 kN

Nous consulter

These large testing machines are specially designed for crushing tests on sewer and drain pipes, concrete pipes, fittings, cones and others up to 2000 mm in diameter and 2500 mm length. Rectangular shaped top bearer is detachable from the actuator. The system does not permit rotation but is swivels in longitudinal direction. Bottom bearer is V-shaped with an included angle of 150°.

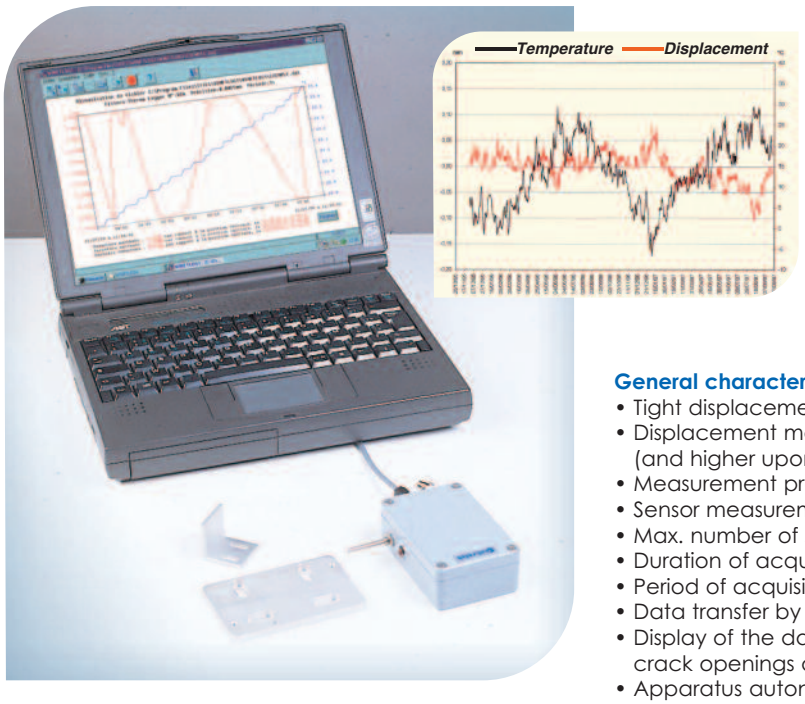
Non destructive tests

Search for and monitoring of cracks

Crack measurement recording apparatus
Fissuro-thermo-logger

C0363

Used to record the opening of cracks or joints. A resistance sensor with palpation peak, programmed beforehand with a PC, makes the acquisition of the relative displacementand the temperature as a function of time.
At the end of each operation, the measurements are transferred and recuperated by **RS232** in a PC in view tables of values and graphic curves.



General characteristics :

- Tight displacement sensor IP65.
- Displacement measurement scope ± 5 mm (and higher upon request).
- Measurement precision : ± 0.01 mm.
- Sensor measurement range : - 30 °C + 65 °C ± 0.4 °C.
- Max. number of stored measurements: 8 100 (16 200 on request).
- Duration of acquisition: 1 hour to 365 days.
- Period of acquisition: 0.5 second to 1 hour.
- Data transfer by RS232 C with memorisation of curves and values.
- Display of the date and time of max. and min. crack openings during the operation.
- Apparatus autonomy: greater than 1 year.
- Weight: 300 g.
- Delivered with software and accessories, without PC.

Electronic strain gauge

This instrument is used to precisely measure the linear variations of a structure, a test specimen in concrete, a brick, etc.
It is composed of the digital strain gauge with 1/1 000 digital dial gauge, of an INVAR reference standard bar, of 50 reference discs and of a tube of adhesive.
Measurement base: 100 - 300 - 600 mm.

Ref.	Measurement base
C0360	100 mm
C0361	300 mm
C0362	600 mm

Accessories

Set of 50 discs

C0362/1

Tube of adhesive

C0362/2

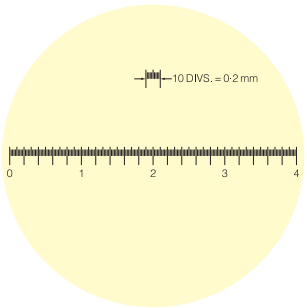
Search for and monitoring of cracks

Measuring microscope with integrated lighting

C0218

Particularly used for the measurement and localization of defects, cracks, etc. :
- Enlargement x 40.
- Reticule: 4 mm / 0.02.
- Elect. supply: HP7 batteries - 1.5 V.
- Delivered in a transport case.

C0218

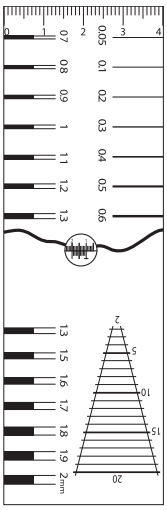


Microscope reticle

Crack measurement apparatus

MT4703033

Transparent plastic ruler with lines of defined width used to measure, by comparison, the openings of cracks included between 0.05 mm and 40 mm.
- Delivered with protective carrying case.


MT4703033


MT4703030

Magnifier for cracks

MT4703030

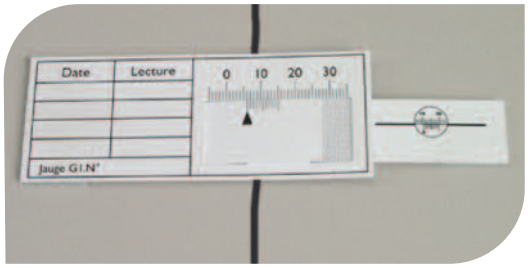
Magnifier for cracks Linear measurement magnifier to evaluate cracks.
- Enlargement x 10.
- 1/10 scale.
- 10 mm field.

Gauge for cracks

Type G1

MT4703031

For measurement of cracks and control of their evolution in time. Gauges are self-adhesive on smooth surfaces and can be glued or nailed on to rough supports.
Readout is made according to the principle of the 1/10 mm. micrometer. Field of measurement: 30 mm.

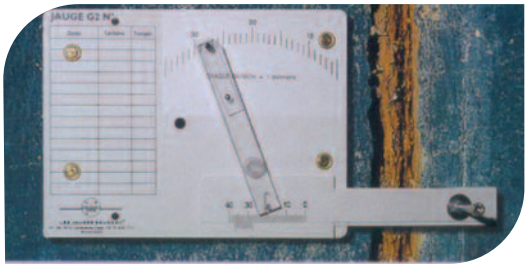


MT 4703031

Type G2

MT4703035

Recording of minimum-maximum deviation traced by a graphite lead on a graduated marking.
Self-adhesive gauges on smooth surfaces, can be glued or nailed on rough supports and can be reused after lead line has been cleaned with alcohol.


MT4703035

Type G3

MT4703032

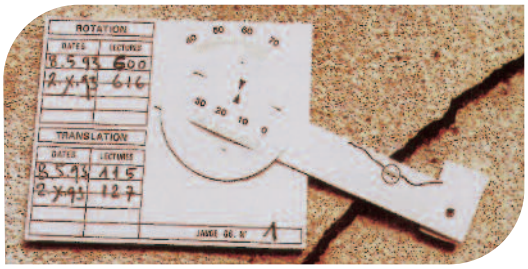
Used to measure the evolution of movements of a plane Z perpendicular or parallel to a reference plan xy. Readout at 0.2 mm according to the micrometer principle.


MT 4703032

Type G6

MT4703034

Used to measure a complex deformation in a same plan.
Association of 2 verniers, one measuring translation and the other measuring rotation, to evaluate the evolution of a crack.
Principle of 1/10 mm vernier.
Field of measurement: 30 mm. Self-adhesive fixation.



Livré en boîte de 5 unités

MT4703034

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Non destructive tests

Search for amourings

Reinforcement detector Rebar type

E0489L

Thanks to a directional sensor, the presence and position of reinforcements in the concrete may be determined.
- A more or less sharp sound depending on how near the position of the reinforcement is (parallel or perpendicular to the sensor) up to 110 mm cover.
- Dimensions: 183 x 110 x 78 mm.
- Weight: 1 kg.

Rebar plus type of reinforcement detector and depth measurement

E0489R

Similar to the Rebar model but with sound detection up to 160 mm and analog display of the depth of the reinforcements.
Two depth measurement scales: 40 and 100 mm.
- Dimensions: 165 x 120 x 90 mm.
- Weight: 1.25 kg.

E0489L E0489R

E0492P

Reinforcement detector Profoscope Type

E0491

Full integrated reinforcement detector.
Compact and light, may be used in one hand only.
Offers a visualisation of reinforcements in real time enabling the user to actually "see" the layout of the metal reinforcements under the surface of the concrete at a maximum depth of 180 mm.
This visualisation is combined with proximity indicators and optic and acoustic location tools.
The combination of these unique characteristics makes the task of locating metal reinforcements easy and effective.
The reinforcements' diameter may also be estimated in the specified test range.
Very easy to use, the intuitive user interface enables the metal reinforcements to be identified more rapidly.
Delivered with a start-up assistance kit making it possible to become familiar with how it works.
- Double measurement scale: up to 80 mm with an uncertainty of ± 1 mm between 80 mm and 180 mm with an uncertainty of ± 3 mm.

Concrete Pachymeter

E0492P

This very easy-to-use instrument makes it possible to rapidly and accurately determe the location, the orientation and the depth of the reinforcing bars.
Of a robust design, IP65 watertight and fitted with a luminous screen as standard, this appliance can be used in the most difficult environments.
- Accurate measurement of the concrete thickness, a large digital screen clearly shows the concrete thickness; visual and sound signals also show how near the bars are.
- Precise, rapid and simple determination of the bars' orientation : Just turn the sensor to find the reinforcement bars precisely and rapidly.
- Rechargeable power supplies: lithium 7.4V batteries for 32 hours autonomy in continuous use.
- Maximum working temperature: 50°C.
- Dimensions : 230 x 130 x 125 mm.
- Weight: 1.54 kg.

Accessory Depth sensor

E0492P/R01

For detection up to 200 mm.

E0491

Technical characteristics :
- Power supply: 2 1.5 V AA (LR6) batteries.
- Voltage range: From 3.6 V to 1.8 V.
- Dimensions : 205 x 92 x 41 mm.
- Weight: 330 g.

Search for amourings

Apparatus for rapidly localizing concrete armouring bars, measuring the concrete coverageand determining the diameter of the bars.

According to DIN 1045 / BS 1881

E0500

- Display on LCD screen, 128 x 128.
- Non volatile memory for 40 000 measurements.
- Battery: 45 hours.
- Software for printing and transfering values on PC.
- Equipment delivered with:

- Universal probe. - 1.5 m long probe .
- 1.5 m long transfer cable. - Software.
- Earphone. - Transport carrying case.

- Dimensions: 463 x 365 x 107 Mm.
- Weight: 2.6 kg.

E0500

On-screen display

E0500S

Model permitting on-screen display of :
- The armouring bars.
- In level of grey the representation of the concrete covering.

State of corrosion of armourings

Resistivity meter for concrete

E0648

Fully integrated Wenner 4-point sensor, designed to measure the electricity resistivity of concrete by a non-destructive method.
- Large measurement range (from 0 to approx. 1000 kΩm).
- Measurement results available rapidly and accurately.
- Indication of the current flow and weak electrical contacts.
- Maintain, record and delete function in an integrated memory.
- USB connection and dedicated software for PC.
- Designed to float (waterproof with IPX7 protection index).
- Enables the sensor space to be adjusted rapidly.
- Frequency: 40 Hz.
- Memory: Non-volatile, approx. 500 values measured.
- Electric power supply: > 50 hours autonomy.
- Charger connection: type B USB, (5 V, 100 mA).
- Dimensions: 197 x 53 x 69.7 mm.
- Weight: 318 g.
- Dimensions: 320 x 285 x 105 mm.

E0648

Corrosometer Type Canin

E0650

For detection of the corrosion of the armourings of concrete structures, before the appearance of visible damage.
The corrosion of the metal armourings in concrete is an electrochemical phenomenon :
by measuring the potential of the concrete surface, the corrosion of the steels can be evaluated.
The Canin corrosometer is equipped with one or several copper / copper sulphate electrodes coupled with an acquisition unit (memorising 120 000 measurements) that map the inspected zone.

E0650

The apparatus is delivered with :
- 1 rod electrode.
- Cable, 1.5 m length.
- Grounding extension cable, 25 m length.
- Copper sulphate.
- Transport carrying case.
- Software for processing with Excel®.
- Elect. supply: 6 AA batteries.
- Autonomy: 60 hours.
- RS232 output.

Delivered in a case.
- Dimensions: 320 x 285 x 105 mm.
- Weight: 3,5 kg.

Accessories

Rod electrode

E0650/EB1	x1
E0650/EB4	x4

Wheel Electrode

E0650/ER1	x1
E0650/ER4	x4

Wenner probe

E0650/SW

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Non destructive tests

Mechanical strength

Sclerometer

According to EN 12504-2, EN 12398 / ASTM C805 / BS 1881:202
NF P18-417 / DIN 1048 / UNE 83307

For the non destructive inspection of hardened concrete, verification of the homogeneity of a structure and estimate of the resistance.

Standard Model N

C0380

For examination of ordinary concretes.
Resistance included between 10 and 70 MPa.
- Dimensions: 330 x 80 x 80 mm.
- Weight: 1.5 kg.


C0380

"Original Schmidt" sclerometer Model N

C0381

For intensive use.

Model NR

C0182

Similar to model N, with a graphic recording system.

"Silver Schmidt" sclerometer

C0380/2

- Revolutionary measuring principle.
- Dispersion, durability characteristics and unequalled measurement range.
- Independent impact direction.
- Customised conversion curves created.
- Measurement range from 10 to 100 MPa.
- Weight: 135 g.

Other measurement ranges on request

C0380/2

Digital sclerometer

According to EN 12504-2, EN 12398 / ASTM C805 / BS 1881:202
NF P18-417 / DIN 1048 / UNE 83307

C0380/1

- Percussion energy: 2.207 Joules.
- Measurement scale: 10 to 120 MPa.
- Visualisation on LCD screen of test value, mean value, number of bounces, date, etc.
- Memorisation of 20 000 tests.
- Supplied with software for transfer of data to PC, cable, battery charger, instruction manual.
- Delivered in transport carrying case.
- Weight: 2 kg.

C0380/1


C0184

Calibration anvil

C0184

For calibration of sclerometers.
Models N and NR.

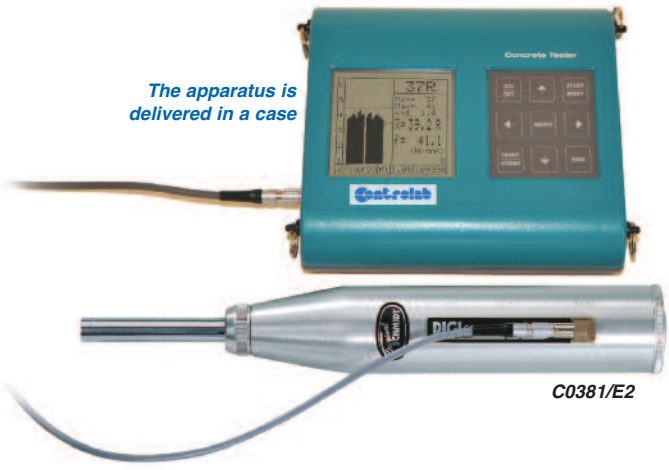
Digi-Schmidt sclerometer

According to EN 12504-2 / BS 1881 / ASTM C805
DIN 1048 / NF P18-417

C0381/E2

High resolution bounce sensor for direct conversion of the bounce value into concrete resistance strength (MPa).
- Display on LCD screen, 128 x 128 mm, of all test parameters such as the measurement value of the last test, the standard deviation, the mean values, the number of measurements, the resistance in MPa, etc.
- Measurement range: 10 to 70 MPa.
- Memory capable of storing 5 000 values (an internal clock memorises measurement date and time).
- RS232 C interface for transfer of data to PC.
- Dimensions : 325 x 295 X 105 mm.
- Weight: 3 Kg.

The apparatus is delivered in a case



C0381/E2

Homogeneity

Portable Appliance

According to EN 12504 / ASTM C597 / BS 1881:203 NF P18-418 / UNE 83308

E0632

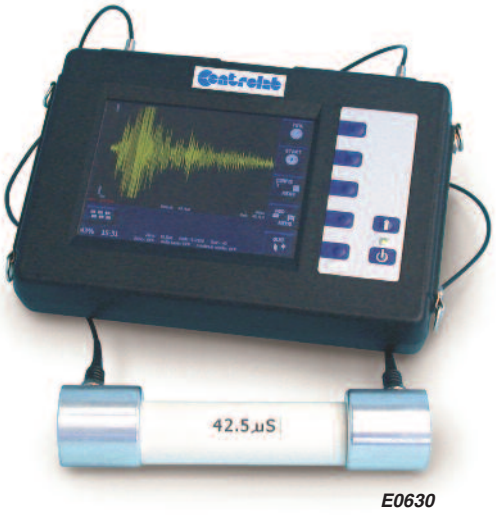
Without oscilloscope.
- 2 probes with cables.
- 2 outputs for oscilloscope without cable.
- Weight: 900 g.

E0632

Accessories common to ultrasound equipment

Contact paste

E0641/3



E0630

High performance ultrasonic apparatus

According to EN 12504-4 / ASTM C597 / NF P18-418 / BS 1881:203 / UNE 83308

E0631

- Black and white screen.
- Without oscilloscope function.

Top of the line appliance

E0630

- Tactile colour screen.
- Measurement range from 0 to 9999.9 µs.
- Resolution 0.1 µs.
- Visualisation with a view of the transmitted waves.
- RS232C output or USB.
- Appliance delivered with:
  - 2 probes - 55 kHz.
  - 1 calibration cylinder.
  - 1 box of contact paste.
  - 1 battery.
  - 1 external power supply.
  - 1 transport carrying case.
- Dimensions: 400 x 300 x 180 mm.
- Weight: 3 kg.

Ultrasound appliance

According to EN 12504-4 / ASTM C 597-02 BS 1881:203 / ISO1920-7:2004

E0746

For non-destructive control of materials.
Unit with digital display of the measurements (wavelength propagation time, speed).

E0746

Measurement range :

- Speed: from 1 to 9999 m/s to ± 1 m/s.
- Propagation time: 0.1 to 9999 Ns to ± 0.1 Ns.
- Three excitation energies: 125 v, 250 v, 500 v and auto.
- Bandwidth 20 to 500 KHz.
- No selectable gain: 1x, 10x, 100x, auto.
- Batteries: 4 xAA or rechargeable.
- USB power plug (no mains plug).
- Nominal power: 3.6 to 6 Volts.
- Operating temperature: -10°C to 60°C.
- Dimensions: 172 x 55 x 220 mm.
- Weight: 1.316 kg.

The equipment includes :

The unit with outlets for oscilloscope and RS 232C, batteries, bag, 2 54 Khz transducers, 2 1.5 m cables, 25Ns metering rod, a battery charger with USB cable, 4 AA (LR) batteries, data medium with software, carrying case and contact product.
Sensors ranging from 24 kHz to 500 KHz and exponential sensors may be connected.

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Non destructive tests

Permeability

Cembureau permeability tester

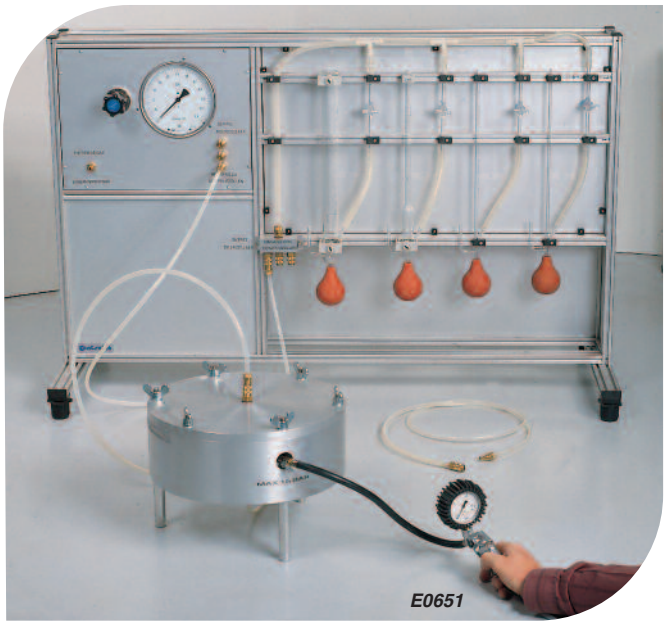
According to EN 12504 / ASTM C597 / BS 1881:203
NF P18-418 / UNE 83308

E0651

Used to measure the air or gas permeability of elements made of concrete or other porous materials, through a concrete disc.

The apparatus includes :

- A pressure cell capable of accepting test specimens of Ø 150 mm and H 50 mm.
- A control console with manometer graduated from 0 to 6 bars and 4 capillary columns (1,5 - 5 - 15 and 150 ml) to measure the gas flow rate through the material.
- Dimensions : L 1180 mm - H 780 mm.
- Weight: 21 kg.



E0651

Cembureau permeability tester

E0656

With water for concrete mortar.

Option Cembureau model with 2 cells

E0651/2

Indispensable accessory Gas cylinder and pressure reducer

Separate control vacuum pump *E0652*

Torrent permeability tester

E0652

Used for rapid and reliable non destructive measurement of the air permeability of concrete elements.

The apparatus includes :

- A vacuum cell with two chambers to apply on the surface to be tested.
- An adjustment unit with membrane pressure switch and pressure sensor.
- A measurement apparatus with LCD screen (218 x 218 mm) to read results and to make measurement acquisitions.
- An integrated software for printing the measured objects and transfering to PC via RS 232 C.

The instrument is supplied in 2 cases.

- Total weight: 9 Kg.

Wenner resistivity probe

For a wet concrete, the coefficient of permeability kT is measured using the Wenner resistivity probe

Permeability / Thermal Conductivity

Concrete permeability tester

According to EN 12390-8 / DIN 1048 / ISO 7031

E0658

Used to determine the water absorption of 200 x 200 x 120 mm prisms or 15 cm cubes. The test specimen is held between 2 end plates equipped with joints. Pressurised water is applied on the test specimen surface by using an air compressor.
Water penetration is measured at the end of the test by :

- Test specimen rupture.
- Reading thanks to on graduated burettes.

Caracteristics :

- 3 measurement cells.
- Test pressure: max. 10 bars.
- Dimensions: 420 x 1 270 x 1 660 mm.
- Weight: 110 kg.

E0658

Permeability / Thermal Conductivity

Semi-automatic concrete water permeability apparatus

According to NF P18-855

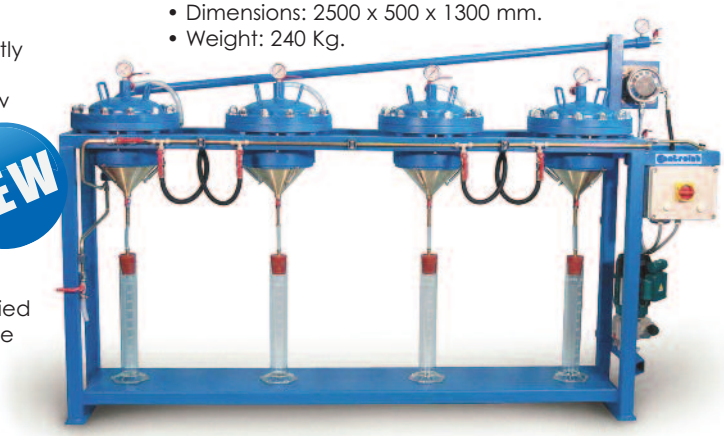
C0430

The equipment consists of four cells
in which specimens are submitted to hydrostatic stress
The water permeated through the test specimen is directly collected and measured into a graduated cylinder.
Permeability determinated by the formula of Darcy's law
k= cc x h / A x T x P.
cc= permeated water in cm^3.
h= heigh of the specimen (cm).
A= Surface area of the specimen (sq.cm.).
t= time to mermeate (sec).
P= hydrostatic pressure in cm of water column.

The pressure is adjustable from 0 to 30 bar, and it is supplied by an automatic pump of variable supply, to achieve the most suitable installation for the specimen under test.
It is possible to use different sample holder.
Sample holders are not included.

Caracteristics :
- Power supply: 220-240 V 1 ph 50 Hz.
- Dimensions: 2500 x 500 x 1300 mm.
- Weight: 240 Kg.

NEW



C0430

Deformation of structures

C0407

Deflection recorder

C0407

Precise determination of the measurement of the deflection on bridges, beams and other suspended structures by means of an Invar wire.
The apparatus is composed of :
- Drum recorder, height: 100 mm, graduated from 0 to 20 with rotation of 1 turn per 24 hours, 7 days or 31 days.
- Amplification 5 and 10.
- Elect. supply: 5 V alkaline battery.
- Weight: 2 kg.

Delivered without Invar wire.

Accessory Invar wire

C0407/R01

100 m roll, Ø 0.5 mm
(15 kg resistance).

Direct readout deflection tester

Used for to precise determination of the measurement of the deflection of beams, ceilings and other structures.

Version 1

C0405/1

Composed of a large dial gauge, 25 mm stroke, with articulated support for securing the Invar wire.
Delivered with transport carrying case and 20 m of Invar wire.

Version 2

C0407/1

Idem above, including in addition:
- 3 sets of dial gauges 25 mm / 0.01 with accessories.

Accessory Invar wire

C0407/2

20 m roll of Invar wire.

C0407/1 *C0405/1*

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

Table of contents

Identification of stratum

Sismograph

S0079 — **3 channels**

Evaluation of the stratigraphic structure of soils by measurement of the propagation time of a micro-seismic wave between and emission point and different receivers.

• Exists in 12 or 24 channel versions.

Option :

Coupled with the WINISISM software using Windows©, allows visualization of the results in the form of curves and mimic diagrams.

S0079

Resistivity meter

S0077/1

Invaluable instrument for the study of the nature of soils and of their stratigraphic composition.
Particularly adapted for identification of road routes and the search for material deposits and hydrogeology.
Coupled with the VES 2 000 analysis software, it establishes continuous profiles of the resistivity of soils.

• Exists in several different models.

S0077/1

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

In-situ tests

Density

Sand densitometer

According to ASTM D1556 / AASHTO T191

S0234	Complete with 6.5" cone Ø 161.5 mm
S0234/2	Complete with 12" cone Ø 304.8 mm

To determine the density in-situ of soils.
The apparatus includes:
- 1 metal double cone with valve.
- 2 plastic containers, capacity 5 l.
- 1 perforated plate.


S0234/3

S0234/3

50 kg bag of sand passing through 600 m screen and retained in 300 m screen.

Accessory Cylinder

S0234/1	Ø 152,4 mm (6")

Gauged for calibration.


S0234

Membrane densitometer

According to NF P 94-061-2

S0232	3 Litres
S0233	6 Litres

Used to determinate of the density of a material in place.
- Delivered complete with anchoring supports and accessories.
- Weight: 3litres:9.5 kg./ 6 litres:18 kg.

Accessories
Set of 12 reinforced membranes

S0232/1	3 Litres
S0233/1	6 Litres


S0085

Surface soil sampler

Designed to measure dry density in-situ.
2 models :

For Ø 100 mm

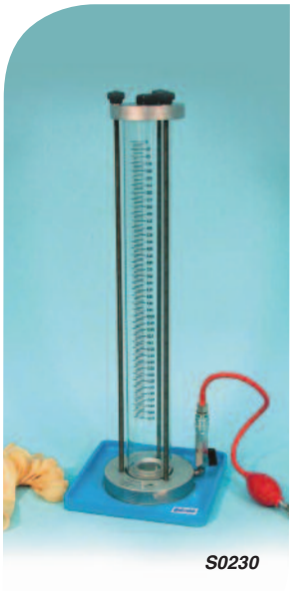
S0085	Ø 100 mm
S0085/1	Spare tube Ø 100 mm

Apparatus delivered with tube Ø 100 mm and 10 kg weight.

For Ø 73 mm

S0084	Ø 73 mm
S0084/1	Tube de rechange Ø 73 mm

Apparatus delivered with tube Ø 73 mm and 5 kg weight.


S0230

Membrane densitometer

According to ASTM D2167
AASHTO T205 / CNR VI N.22

S0230

For determination of the density in-situ of soils.
The apparatus includes:
- A graduated Plexiglas cylinder, capacity 1 600 ml.
- Aluminium frame.
- Pump with hand filler bulb.
- Delivered with 12 membranes.
- Dimensions: 700 x 340 x 340 mm.
- Weight: 8 kg.

Accessory
Set of 12 spare membranes

S0230/1

Gamma densitometer

According to NF P98 241-1 / ASTM D2922

Humbolt type

E0082.1

For inspection of the mean apparent density in place of a given thickness of material :
- Inspection of the water content and capacity of soils, concretes, coatings.
- Measurement on surface (back scattering) or in depth (up to 300 mm / 50 or 25 mm).
- Direct readout of the following parameters:
  - Wet density Kg/m3,
  - Dry density Kg/m3,
  - Water density Kg/m3,
  - Water mass content %.
  - Water volum content %.
  - Compactness % (Proctor or Marshall),
  - Index of voids %.
- Memorisation of data exportable to printer or computer. Class A.
- Dimensions: 635 x 500 x 320 mm.
- Total weight: 44 kg.

E0082.1

E0082.2

Radiation monitor

E0082.2

It is a monitor control of radiation, with audible warning when X and Gamma radiation dose rate is reached.
Simple, robust with an easy to read display when the apparatus is in a shirt pocket.
- Sound signal frequency :
  - Background radiation: Approx. 1 bleep every 15 Minutes
  - 10 µSv/h(1mR/h): approx. 1 bleep every 20 sec
  - 1 Msv/h (100mR/h): continue signal to at least 60 Sv/h
- Energy rate: 45KeV.... 3MeV.
- Temperature range: -20 to 50°C.
- Dimensions:152 x 35 16 mm.
- Weight: 110 g.

Electrical density gauge (nuclear-free)

According to ASTM D7698

E0082.3

The electrical density gauge is a nuclear-free alternative for determining the moisture and density of compacted soils.
The electrical density gauge is battery-powered instrument capable of being used anywhere without the concerns and regulations associated with nuclear safety.
Easy-to-use, the electrical density gauge measures the results for wet and dry density, gravimetric moisture content and percent compaction.
- Wet Density Range : typical compacted earth sites range.
- Dry Density Accuracy : within 3%.
- Moisture Content Range : typical compacted earth sites range.
- Moisture Content Accuracy : within 2%.
- Operating Temperature : 0-50°C.
- Ambient Operating Humidity : 5-90%, non-condensing.
- Power : Lithium Ion battery (AA battery optional).
- Battery Life : approx. 60 hrs. of runtime.
- GPS : ± 3m.
- Battery Charger 110-240 V 50/60Hz.
- Dimensions : 533 mm x 432 mm x 203mm.
- Net Weight : 7kg.

E0082.3

In-situ tests

Mechanical compaction controller

According to German standard TP BF StB part B 8.3.2003 / ASTM D1195, D1196

T0196

For inspection of the bearing capacity of the soils on roads and railways under construction, trenches, foundations, etc. and for determination of the dynamic modulus of deformation Evd included between 15 and 80 MN/m2.

- Plate dimensions: Ø 300 mm x 20 mm.
- Percussion force: 7.07 kN.
- Supplied complete with transport carrying case including digital indicator, sensor and 4 rechargeable batteries.
- Total weight: 30 kg.

T0196

T0196/03

Accessories

T0196/01

Thermal printer with cable, battery and charger.

T0196/02

Interface and processing software on PC with Windows© environment.

T0196/03

Transport trolley.

T0196/04

Magnetic base plate for centering the falling weight.

Electronic compaction controller

According to ASTM D6758

Humbolt type

E0081

For performing inspection of the compaction of soils.

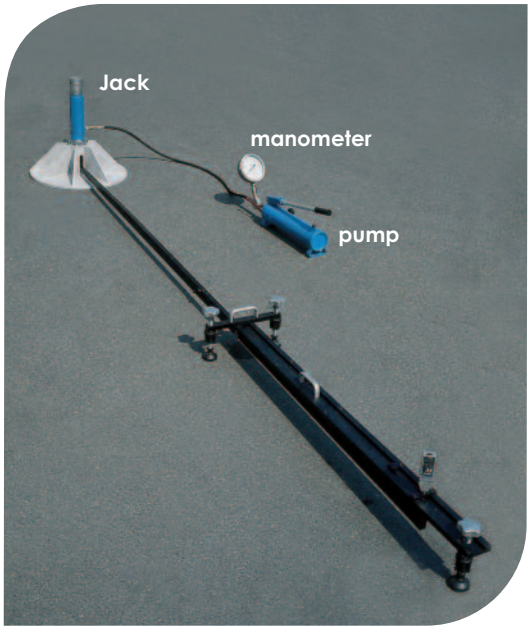
- Alternative to plate test.
- Portable apparatus which does not use any radioactive source.
- Displays the modulus of elasticity of the soil.

General characteristics :

- Measurement range.
  - Stiffness from 3 to 70 MN/m,
  - Young's modulus of elasticity from 26.2 to 610 MPa.
- Measurement principle: vibration of a load applied to the soil surface.
- Measurement depth 100 to 220 mm.
- Hardness test 75 seconds.
- IR interface output.
- Supplied with software and cable for transmission of data on Hyper Terminal with Windows©.
- Weight: 11 kg.

E0081

Plate test



Measurement of static deformation EV1/EV2 (roads) and Westergard deformation (platforms)

According to NF P94-117-1

Manual appliance 100 kN (Jack/manometer/pump)

S0224/R08-100 **100 kN**

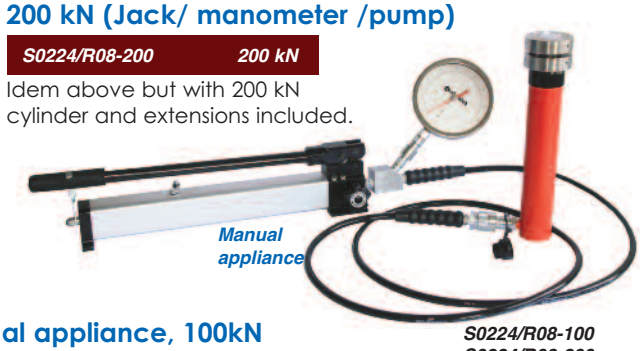
Manual appliance, 100 kN (Jack/ manometer /pump)
- Hydraulic jack, length: 300 mm, stroke: 170 mm.
- Manual hydraulic pump with double stage tank.
- Analogue manometer 100 kN.

Delivered without beam or plate or comparator, with flexible hose, pivot joint, and calibration certificate.

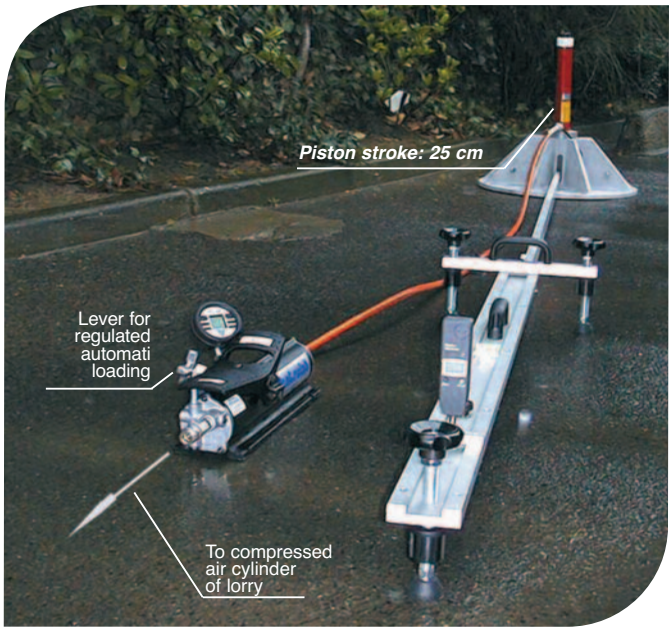
Appliance with cylinder and manometer, 200 kN (Jack/ manometer /pump)

S0224/R08-200 **200 kN**

Idem above but with 200 kN cylinder and extensions included.



S0224/R08-100
S0224/R08-200



Electrical appliance, 100kN (Jack/ manometer /pump)

S0224/R08E-100

For plate test, and load application including :
- 100kN jack with pivot joint on the upper part.
- Flexible 3m HP
- 12V Electrical pump with battery
- 100kN manometer
- Supplied without test plate

Manometer detail

Semi-automatic appliance, 100 kN

S0224/AUH

- Hydraulic jack, height: 350 mm, stroke: 270 mm, equipped with a centering base.
- Pedal-type hydraulic pump used for easy loading, maintaining and unloading.

Operates with the compressed air circuit of lorry or other sources.
Equipment combining resistance and longevity with light weight.
- Needle valve for flow rate adjustment.
- Digital display of load in kN (sensitivity 0.1 kN) and test time in seconds so that the standard is scrupulously respected.

Delivered without beam or plate or comparator, with 4 m of hydraulic flexiblehose to place the manometer from the pump to the comparator of the beam, 10 m hose and connection end piece to the air circuit, pivot joint, calibration certificate.

S0224/AUH

Semi-automatic appliance

In-situ tests

Benkelman beam

According to NF P98-200-2 and method LCPC

S0223*

Particularly intended for measurement of deflection on roadways.
Composed of 2 light alloy parts, 3 adjustable stabilisation feet and 1 level.
Delivered in transport carrying case.

- Distance between end of measurement and rotation axis: 240 cm.
- Distance between rotation axis and comparator: 120 cm
- Measurement by digital comparator MT575113 supplied.
- Dimensions: 2120 x 300 x 420 mm.
- Weight: 42 kg.


S0223*

Other version Benkelman beam

S0223

With mechanical comparator **MT2050E** supplied

Beam only

S0223/1

Accessory Calibration device

S0223/R01

For Benkelman beam.


S0223/R01

Accessories Digital comparator

MT575113

Stroke 25 x 0.01 mm.

Mechanical comparator Ø 58 mm

MT2050E

Stroke 25 x 0.01 mm.


MT575113

No Ribbed plate

According to ASTM D 1195-1196 / CNR N.92

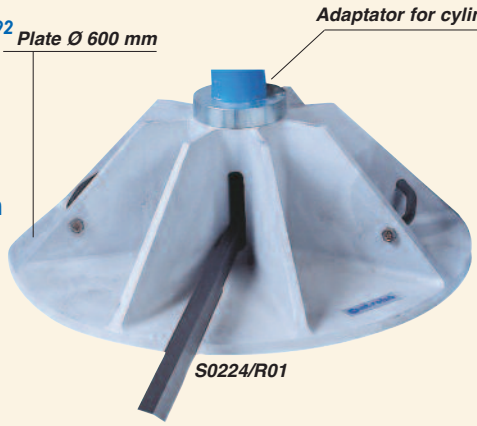
S0224/R011	Ø 300 mm
S0224/R012	Ø 450 mm
S0224/R013	Ø 760 mm

Ribbed load plate, Ø 600 mm

According to NF P94-117-1

S0224/R01

- Aluminium cast iron.
- Equipped with 2 handles.
- Benkelman beam introduction window.
- Weight: 25 kg.



S0224/R01

Accessories Centring adaptor for cylinder

S0224/R03	100 kN
S0224/R022	200 kN

Accessories Robust, light-weight 4 G aluminium extensions for 100 kN and 200 kN

S0224/R03	Centering adaptor
S0224/R035	Height 200 mm
S0224/R034	Height 100 mm
S0224/R01	Plate Ø 600 mm

Can be piled between the ribbed load plate and the centering adaptor for jack.
Simple, robust design.

Accessory Two-wheel hand truck

S0225

Used to store and transport all of the equipment needed to perform a test (with the exception of the Benkelman beam).
Stable, sturdy and practical (inflatable wheels, diameter 260 mm).


S0225

Apparatus for CBR test on work site

BS 1377:7, 1924:2 / ASTM D4429

S0220

This apparatus is used on the work site to determine the bearing capacity of soils in the framework of road constructions.
The set is composed of :

- 1 hydraulic cylinder, 50 kN.
- 1 poad ring, 40 kN.
- 1 CBR penetration piston, length: 100 mm.
- 1 extension rod set: 2 x 100 mm, 1 x 300 mm, 1 x 600 mm, 1 x 1 000 mm.
- 1 piston to extension rod adaptor.
- 1 proving ring to extension rod adaptor.
- 1 set bar including 2 tripods and 1 aluminium bar, length: 2 meters.
- 1 dial gauge 25 mm x 0.01 mm with its support.
- 1 slotted surcharge ring 4.535 kg (10 lbs).
- 1 weight of 9.07 kg (20 lbs).
- 1 round overload ring, 4.535 kg (10 lbs).
- 1 transport carrying case.
- Net weight: 70 kg


S0220

Shear strength


T0170G

Vane tester for in-situ testing
Model Geonor H-70

T0170G

- Sinking by percussion and extraction by means of a rod puller with a ball chuck.
- Measurement range: 0 - 80 kPa, 0 - 160 kPa.
- Delivered complete with dynamometric wrench, 10 meters rod, 2 blades, extraction device and metal transport carrying case.
- Weight: 68 kg

Portable vane tester

According to ASTM D2573

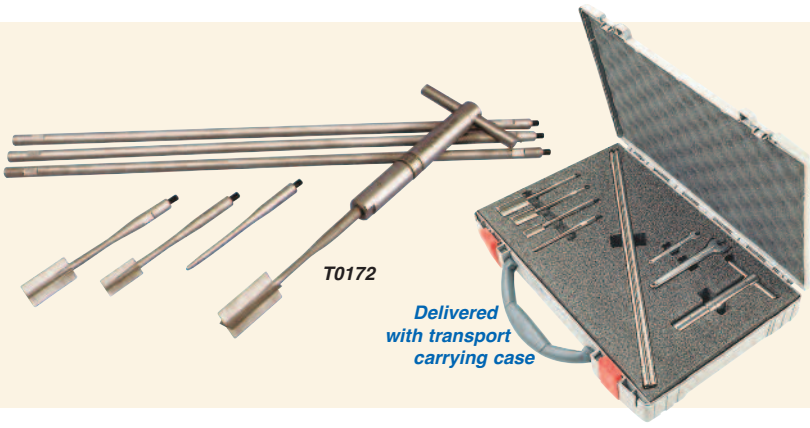
T0172

For direct shear strength measurement.
T-sharped bar with torsion spring and engraved scale.

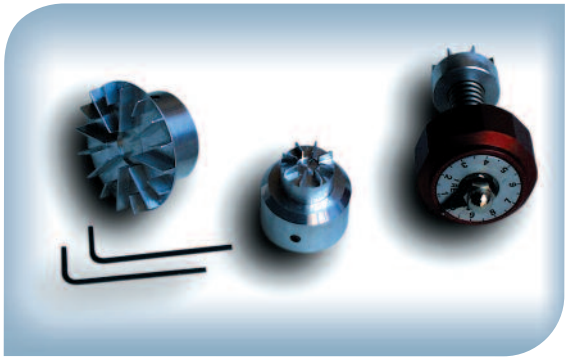
- Max. scale: 0/200 kPa.
- Delivered with 3 blades Ø 16 x 32, Ø 20 x 40, Ø 25.4 x 50.8 mm, a 500 mm extension and tools.
- Appliance supplied in a transport carrying case.
- Weight: 5 kg.

T0172/01

Additional 500 mm extension.


T0172

Delivered with transport carrying case


Delivered with a series of 3 blades

Pocket vane tester

To check the shear strength of different grounds.

With fixed blades

S0075	**0 to 10 N/cm2**
S0076	**0 to 20 N/cm2**

Scale 0 to 10 N/cm^2, 0 to 20 N/cm^2.

With interchangeable blades

T0175/A

Scale 0 to 2 N/cm^2, 0 to 10 N/cm^2, 0 to 25 N/cm^2.

In-situ tests

Cut-through resistance

Pocket penetrometers

For rapid measurement of the shearing resistance of a soil in-situ.

3 models with dial readout

S0068 Application force 0 -11 kg

- Universal with 5 interchangeable end pieces Ø 6,4 - 10 - 15 - 20 and 25 mm.

S0065 Application force 0 - 5 kg/cm2

S0066 Application force 9 -15 kg/cm2

- With 1 fixed end piece Ø 6,4 mm.

2 models with vernier readout

S0070 Application force 0 - 4,5 kg/cm2

S0071 Application force 0 - 16 kg/cm2

- With 1 fixed end piece Ø 6,4 mm.

S0068-S0065-S0066

S0070-S0071

T0197

Clegg compactometer

According to ASTM D 5874

T0197

Particularly useful for:
- Study of coatings.
- Inspection of compaction.
- Filling of trenches.
- Also offers an excellent correlation with CBR test results.

It is composed of a 4.5 kg rammer connected to an accelerometer that transmits an electric impulse to a digital display.
- Dimensions: 190 x 190 x 750 mm.
- Weight: 9 kg.

Note :
Also exists with 0.5 kg or 2.25 kg or 20 kg rammer.
Ask for info.

S0086

Proving ring penetrometer

S0086

For rapid determination of the resistance of a soil.
The apparatus includes:
- 1 proving ring, 1 kN, mounted on T-shaped support.
- Rod graduated every 100 mm.
- A 1 cm^2 and 30° cone.
- Weight: 5 kg.

Cut-through resistance

Static penetrometer Dutch type

T0012.11

To determinate the penetration resistance of a soil (bearing capacity). Use by a single person up to 3 m in depth.
The apparatus is delivered with: 4 cones:
1, 2, 31/3 and 5 cm2, set of 5 rods-extensions of 50 cm, manometer 1000N/cm2, transport carrying case, Edelman drill Ø 5 cm and accessories.

T0012.11

T0165

Proctor penetrometer

According to ASTM D1558

T0165

For inspection of the compactness of a soil in-situ, penetrates by 1 cm steps.
Maximum penetration force 40 kg.

- Delivered in transport carrying case with 7 normalised needles Ø 6.45 - 9.08 - 12.83 - 16.53 - 20.21 - 24.80 - 28.55 mm.
- Weight: 3,5 kg.

Light dynamic penetrometer

According to NF P94117-3

T0013.1

For sounding up to max. 12 meters.
To rapidly establish the bearing capacity of a soil and analyse problems of stability.
Delivered with 6 m of rod, point of 5 cm2, rammer of 10 kg, rod extraction system, wood box and accessories.

- Dimensions : 1 160 x 370 x 220 mm.
- Weight : 71 kg.

.

T0013.1

In-situ tests

Dynamic penetrometer Wheeled model

According to DIN 4094

T0013.E

This penetrometer makes it possible to work with variable drop heights.

- 4 tps petrol engine 1.65 kW at 4200 rpm
- As the volumes are movable, possibility of working with: 10 kg or 30 kg or 50 kg.
- Transport dimensions: 1500 x 740 x 1520 mm.
- Working dimensions: 780 x 780 x 2340 mm.
- Weight: 110 kg.

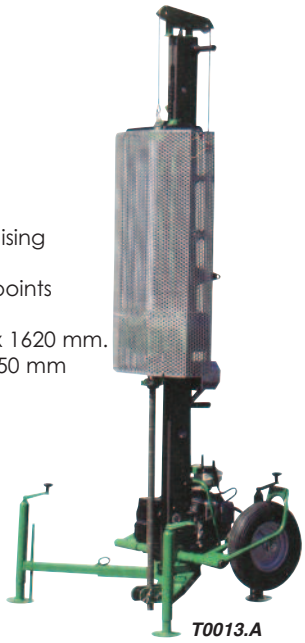
T0013.E

Dynamic penetrometer Model on 2 wheels, 3 feets

According to NF P94-115

T0013.A

- Apparatus assembled on 2 tires.
- Driven by Honda 4T motor, 3.5 HP.
- Verticality adjustment system by 2 mechanical shimming feet.
- Foldable mast, hammering trolley raising by manual winch.
- Delivered with 15 m of rods, 50 lost points and 20 kN mechanical extractor.
- Dimensions for transport:1300 x 770 x 1620 mm. Dimensions for work : 900x 1100 x 2750 mm
- Weight: 125 kg.



T0013.A

Dynamic penetrometer model with crawler

According to NF P94-115

T0013.B

Dynamic penetrometer with constant power on tracks.

- Hydraulic machine can be used by a single person.
- Automatic pin extractor.
- Hammer weight: 63.5 kg (20+20+13.5+10).
- Drop height: 75 cm (modifiable).
- Striking rate: 10 to 25 strikes /min.
- Mechanical strike counter.
- 11 hp petrol engine with electric starter.
- 10 T hydraulic extractor.
- 22/36 mm ball blocking.
- Proportional crawler controls.
- Preconfigured for parameter recorder and data processing by a software.
- Emergency stop and protective cage.
- Transport dimensions: 2450 x 800 x 1350 mm.
- Working dimensions: 2450 x 800 x 2750 mm.
- Weight: 770 kg.

T0013.B

Dynamic penetrometer Model on trailer

According to NF P94-115

T0013.C

- Apparatus mounted on 500 kg road trailer (can be towed by passenger car).
- Hydraulic operation.
- Unit driven by Honda motor 5.5 HP.
- Verticality adjustment system by 3 hydraulic shimming feet.
- Hydraulic raising of the driving hammer trolley.
- Delivered with 15 m of rods, 50 lost points and 20 kN mechanical extractor.
- Dimensions for transport : 4500 x 2000 x 1500 mm.
- Dimensions for work : 4500x 2000 x 2750 mm.
- Weight: 500kg.

T0013.C

Earth borers

Hand auger

According to ASTM D420, D1452
CNR a VI n.25 / AASHTO T86, T202

Used in prospecting soils, supplied with 1-meter extension and T-shaped handle.

Ref.	Ø bore mm	Weight kg
S0292	80	4
S0293	100	5
S0294	150	6

Accessory
1 meter extension

S0295

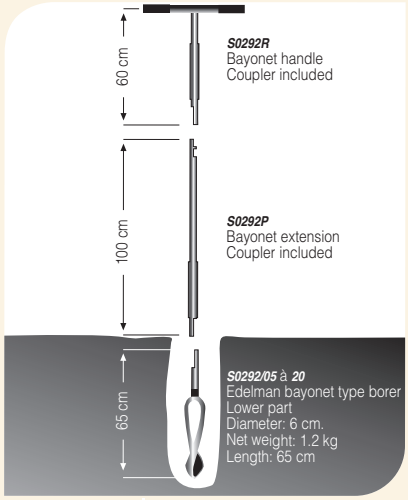
Also available :
Motorised earth auger*
Ø 80, 100, 150 and 200 mm.

EDELMAN auger

Hand auger borer that is particularly adapted for all types of soil. Light, solid and effective, very high quality, with practically perfect ergonomics. Rapid positioning of the different elements by "bayonet" screw connection.

"Bayonet" type connection

Lower part of borer

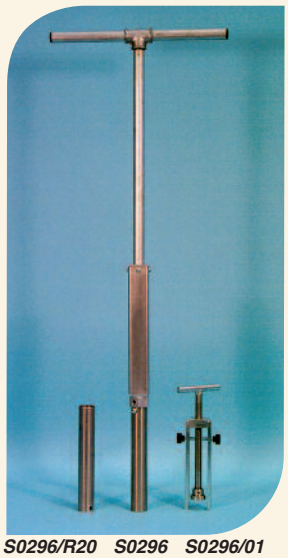


Ref.	Ø bore mm
S0292/05	50
S0292/06	60
S0292/07	70
S0292/08	80
S0292/10	100
S0292/12	120
S0292/15	150
S0292/20	200
S0292/R	1 meter extension
S0292/P	Handle + coupler

Manual extractor

S0296

For extraction of soil sample, with T-shaped handle and 900 mm extension.
Supplied with stainless steel core cutter, Ø 38 x 230 mm.



S0296/R20 S0296 S0296/01

Accessory

Apparatus for extraction of sample from core cutter

S0296/01

Stainless steel

S0296/R20

Ø de 38 x 230 mm.

Sampling kit

In-situ sampling kit for taking samples of unworked soil up to 5 m in depth.
Apparatus mainly composed of an auger (handle, tool Ø 7 cm, 3 extensions of 1 m) and piston tube(s).

Exists in 2 models :
- With piston of fixed 2-meter length.
- With divisible piston: three piston tubes of 50, 100 and 150 cm lengths with adapted pistons.

S0298	***Fixed piston***
S0297	***Divisible piston***

S0298 - S0297

In-situ tests

Motorised earth borers

Auger for Ø 63 mm

T0013.89

For small borings or small sample taking. Permits for one single operator to perform his work in complete safety due to a bit brake associated with an anti-torque bar.

- Two stroke motor, 31 cm3.
- Power: 2 hp.
- Equipped with 3 boring tools of 1 m, Ø 63 mm (for borings intended for pressiometric tests).
- Weight: 10 kg.


T0013.89

Spares accessories for T0013.89

Attack tool

T0013.81

Ø 63 mm specially designed for test with pressure meter.

1 meter extension

T0013.82

Locking ring

T0013.89/21

Adapter coupling

T0013.89/22

Auger for Ø 63 mm to 350 mm

T0013.80

For the identification of the subsoil or for boring for pressiometric test. Suitable for borers from Ø 63 mm to 350 mm.
Can be used by a single person, in complete safety, due to anti-torque safety bar.
The machine is composed of :

- Handlebar with control organ.
- 4 stroke gasoline motor mounted on trolley and connected to the earth borer by transmission hose and anti-torque bar.
- Power: 5 hp.
- Total weight: 60 kg.


T0013.80

Indispensable accessories for T0013.80

Attack tool

Ø 63 mm specially designed for test with pressure meter.

T0013.81	Ø 63 mm
T0013.83	Ø 100 mm
T0013.85	Ø 150 mm

Borer extension, 1 m

T0013.82	Ø 63 mm
T0013.84	Ø 100 mm
T0013.86	Ø 150 mm

Adapter coupling

T0013.87

Drilling

T0013.53

Drilling and boring machine for geotechnical investigation at low depth

According to EN 791

T0013.53

Field of application :

- Geotechnical investigation at low depth.
- Drilling for environment.
- Seismic drilling in area difficult to access.

Characteristics :

- Auger: 8/10 m, Ø 100 mm, 15/20 m with Ø 63 mm.
- Coring: 20 m, Ø 76 mm.
- Rotation: 30 m, Ø 63 mm.
- Down the hole hammer: 20 m in 2.5 seconds.
- Crawler : 600 kg load.
- 4 manual supporting legs.
- B&S 2-cylinder V 16 hp engine.
- Electric starter.
- Hydraulic container: 50 litres.
- Control console with hydraulic distributors without blocking.
- Output pressure regulator, control pressure gauge on movement and rotation.
- Downward speed regulator.
- Boring mast for elements 1 m or 1.50 m long.
- Manual mast lifting.
- Pull strength 10 kN.
- Transport dimensions: 2500 x 650 x 1300 m.
- Weight: 550 kg.

Drilling

Drilling and boring machine for geotechnical investigation at medium depth

According to EN 791

T0013.54

Field of application :
- Geotechnical investigation at medium depth.

Characteristics :
- Auger: 40 m en Ø 100 mm,
- Coring: 90 m en Ø 116 mm,
- Rotary percussion: 60 m, Ø 63 mm,
- Crawler: 1800 mm x 2100 mm,
- Tracks: rubber 320 mm wide,
- Manual and remove movement control system,
- 4 hydraulic supporting legs,
- 80 hp Diesel engine at 2200 rpm,

o Liquid cooling with protective hood,
- Diesel tank capacity: 70 L,
- Hydraulic tank capacity: 160 L,
- Hydraulic electric circuit air cooler,
- Filtering elements for dusty atmosphere,
- Boring mast, length 5.45 m – 3.60 m useful stroke,
- Double hydraulic lift,
- Pulling capacity 5000 kg,
- Variable displacement rotary percussion head,
- Maximum torque: 5000 Nm to 60 rpm,
- Maximum speed: 700 rpm,
- Hammer and hydraulic winch,
- Dimensions: 1500 x 3800 x 2300 et 4000 mm,
- Weight: 3500 kg,

T0013.54

Micro-foundation

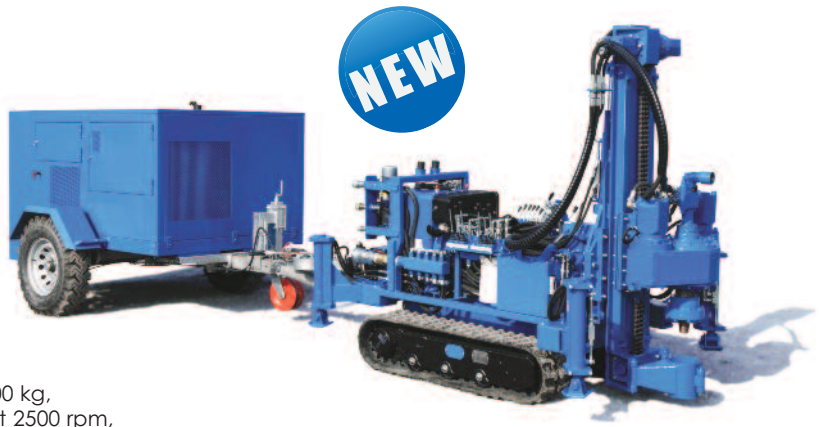
Boring machine suitable for micro-foundation

According to EN 791

T0013.57

Field of application :
- Micro foundations,
- Boring in a confined space,
- Down the hole hammer up to 6 seconds,
- Auger boring.

Characteristics :
- Auger up to 25 m en Ø 300 mm.
- Crawler: 1300 mm x 700 mm,
- Manual and remote moving control,
- 4 movable hydraulic supporting legs,
- Trailer-mounted hydraulic power unit: weight: 1400 kg,
- Boring motor: Silent 1-cylinder Hatz diesel 14 hp at 2500 rpm,
- Hydaulic engine unit: Yanmar 88 hp diesel at 2500 rpm,
- Boring mast: 1950 mm length and 1000 mm useful stroke,
- Pulling capacity: 3000 kg,
- Rotation head with 2 hydraulic motors,
- Boring machine dimensions: mast length folded down: 2500 mm, overall width 700 mm, mast height folded down: 1840 mm, working height: 2100 mm.
- Weight of the drill : 1600 kg.



T0013.57

We have a full range of drilling and boring machines.
Contact us to select the machine corresponding to your requirements.

In-situ tests

Geothermal - Water drilling

Machine for water boring or geothermal applications

According to EN 791

T0013.55

Field of application :
- Machine for water boring or geothermal applications.

Characteristics :
- Bottom of the hole hammer.
- Rotation: 100 to 150 m, Ø 165 mm.
- Crawler: 2490 mm x 1500 mm.
- Manual and remote moving control.
- 4 hydraulic supporting feet.
- 125 hp diesel engine at 2300 rpm.
- Soundproofed hood – liquid cooling.
- Diesel tank capacity: 70 L.
- Hydraulic container capacity: 200 L.
- Hydraulic electric circuit air cooler.
- Air filtering for very dusty atmosphere.
- Boring mast: length: 3.90 m.
- Hydraulic lift.
- Pulling capacity 12000 kg.
- Rotation head mounted on a trailer with hydraulic sliding of the head and fitted with two hydraulic motors.
- Weight : 7500 kg

T0013.55

Machine for water boring or geothermal applications in difficult terrain

According to EN 791

T0013.56

Field of application: :
- Geothermal applications or water boring in difficult terrain.

Characteristics :
- 100 to 150 m depth, all boring methods and with overburden system.
- Rubber crawler 2960 x 320 mm.
- 4 hydraulic supporting legs.
- Manual and remote moving control
- 200 hp diesel engine at 2200 rpm under soundproof hood.
- Hydraulic piston pump and gear.
- Proportional distributor.
- Boring mast: 2800 or 3800 mm stroke, total length 5400 or 6400 mm.
- Pulling capacity of 6000 kg.
- Lifting with 2 jacks.
- NORDMEYER KSP 5-18/5-17 dual rotation head.
- Dimensions : 1800 x 7000 x 2600 mm.

T0013.56

We have a full range of drilling and boring machines.
Contact us to select the machine corresponding to your requirements.

Pressiometric test

Pressure Volume Controller (PVC)

According to NF P 94-110-1

T0013.70

Test used to obtain a ground deformability caracteristic, an ultimate strength caracteristic and a caracteristic pressure called pressiometric creep pressure.

Technical characteristics :

The apparatus includes:

- A three-cell dilatable cylindrical probe (one measurement cell and two monitoring cells) to apply a stress on the ground.
- A «Pressure/Volume Controller» that supplies the probe with water and measures the measurement cell volume variations according to the pressure applied.
- A set of accessories (33-meter coaxial tubing, nitrogen cylinder, pressure expansion valve, 63 mm manual hole auger, spare parts, etc.).
- In polyester case.
- Carrying handle.
- Tripod to ensure verticality on all grounds (adjustment by spirit level).
- Dimensions : 860 x 430 x 260 Mm.

T0013.70

Data acquisition unit

T0013.70/1

Data acquisition unit. With tactile screen and thermal printer. Recording on Compact Flash type memory card with 500 test capacity. 30-day permanent random access memory.

Technical characteristics :

- Tight case dimensions : 330 x 270 x 200 mm.
- Weight: 4 kg.
- Temperature range: -20°C to + 70°C.
- Elect. supply: from 10 V to 35 V.

Software

T0013.70/2

Software for calculations and formatting of results according to standard *NF P 94-110-1*.

Compact flash memory card reader.

T0013.70/3

Permeability of soils

S0255.1

Electronic infiltrometer

According to NF X 30-418

S0255.1

Used to measure the permeability of soils insitu, in laboratory, on rocky ground and concrete.

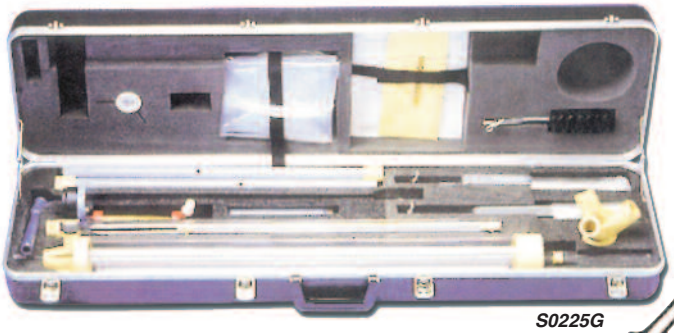
- Open double ring method.
- Measurement of the vertical infiltration speed.
- Direct readout in mm or µm of the displacement of the water.
- 5-digit digital display.
- Can be used from 10-4 to 10-9 m/s.
- Detector resolution: 2 µm.
- Dimensions: 630 x 400 x 250 mm.
- Weight: 11 kg.

GUELPH infiltrometer

S0225G

For very easy and rapid measurement of the permeability in place of the soil.
After making a Ø 6 cm hole max. 80 cm depth, the permeameter is installed and the evolution of the water level in the instrument tank that was filled beforehand is measured
It is composed of:

- The apparatus with strainer tube, volume - meter, constant level system and tripod.
- Plastic tank with manual vacuum pump.
- Auger Ø 60 mm with accessories.
- Transport carrying case.
- Weight: 17 kg.



S0225G

Schematic diagram of infiltrometer

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In-situ tests

Water level measurement sensor

For measuring the level of water in boring holes or underground structures.

BFK type

S0061/2	width 30 m
S0061/3	width 50 m
S0061/4	width 100 m

- Kevlar© cable Ø 4.7 mm with protective sheath graduated in cm (inalterable graduation marks).
- Measurement sensor Ø 10 mm.
- Elect. supply: 9 V battery.
- Audible alert signal when water level is reached.
- Length: 30, 50, 100, 200, 400 m.
- Longer lengths on request.
- Weight: 5 kg.

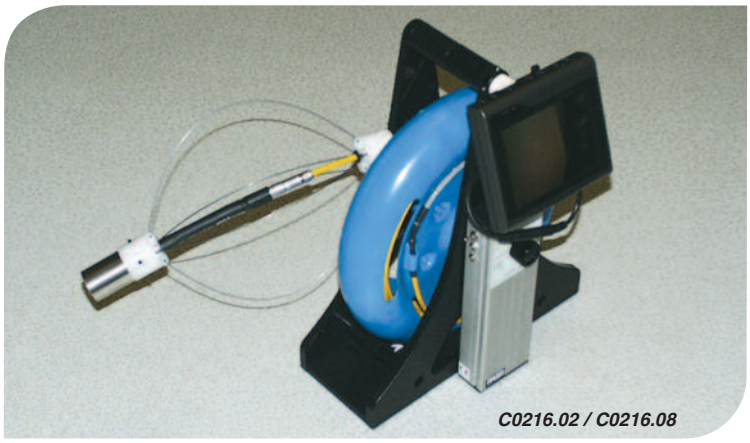
Sound signal and indicator light

BFKT type

S0061/2T	width 30 m
S0061/3T	width 50 m
S0061/4T	width 100 m

Idem type BFK with digital display of temperature between - 10°C and 70°C/0, 1°C.

S0061/2



C0216.02 / C0216.08

Video inspection

C0216.02

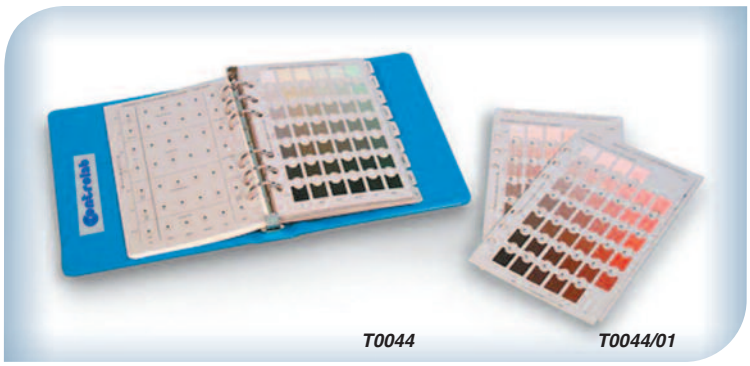
For drainage canalisations, wells and borings.
Portable appliance for vertical and horizontal holes.

Characteristics :

- Stainless steel sensor IP 68 f 36 mm with colour camera and integrated lighting.
- Semi-rigid glass fibre cable, 30 m long.
- Control of image on 5.6" liquid crystal colour screen.
- Elect. supply: rechargeable 12 V batter.
- Video output for VCR or analysis of images.

C0216.08

Idem except :
Semi-rigid glass fibre cable, 30 m long.



T0044 *T0044/01*

Colour table

T0044	Ring binder with 196 colours on 7 cards
T0044/01	2 additional cards for tropical soils

T0045 *T0046* *T0047*

Chemical analysis

T0045	Boxed set for analysis of acidity
T0046	Boxed set for analysis of chloride
T0047	Boxed set for analysis of hardness
T0048	Boxed set for analysis of pH, nitrates,ammonia, etc. in water

Soil identification

Atterberg limit

According to NF P94-051

Manual Casagrande apparatus

T0030/F	According to NF

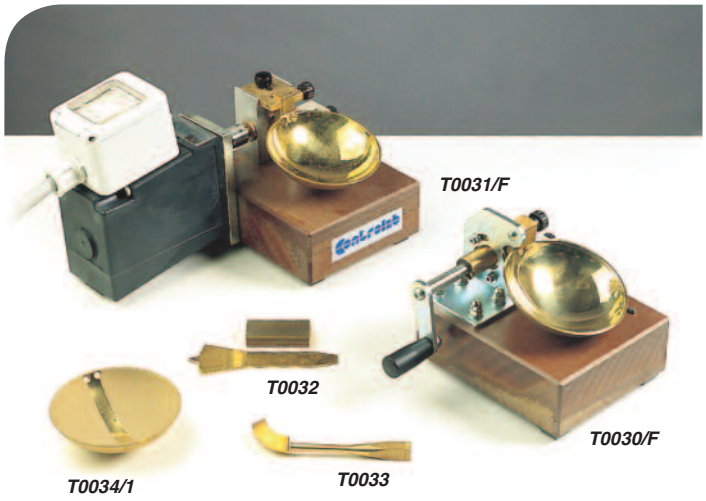
For liquid limit with counter and smooth chromed cup.
• Weight: 2 kg.

With smooth brass cup

T0030/F*	ASTM - AASHTO

Electric Casagrande apparatus

T0031/F	According to NF
T0031/F*	ASTM - AASHTO



Accessories Grooving tool

T0032	According to NF/ASTM
T0033	According to AASHTO

With 10 mm shim.

	According to NF P94-051 Chromed brass	According to ASTM D4318 / AASHTO T89 Brass
Smooth surface	T0034/4	T0034
Rough-surface cup	T0034/1	-

Plastic limit

According to NF P94-051

T0041

The apparatus includes:
• 1 glass plate, 300 x 300 mm.
• 1 master gauge Ø 3 mm.
• 1 porcelain capsule.
• 6 aluminium moisture tirs.
Delivered in a plastic transport carrying case.

Accessories

T0050.1/R10	Stainless steel spatula, 140 mm
D1171	Porcelain capsule, Ø 120 mm
D1330	Aluminium box with cover, Ø 55 x 35 mm

Shrinkage limit

According to XP P94-060-1

T0035

The apparatus includes:
• 1 three-point plate.
• 1 crystallising dish, Ø 57 mm.
• 1 test tube 25 ml, with Petri dish and flexible spatula.
Delivered in a plastic transport carrying case.

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Laboratory tests

Cone penetrometer

According to NF P94-052-1

For liquid limit determination.

Manual

S0165	Analog
S0165S/N	Digital

- With cone micrometric descent.
- Cone with recipient cup.
- Dimensions: 280 x 230 x 530 mm.
- Weight: 13 kg.

Automatic

S0165S	Analog
S0165S/N	Digital

- Automatic zero setting.
- Cone micrometric descent.
- Control box with automatic start off and cone blocking after 5 s.
- Elect. supply: 230 V 50 Hz.
- Dimensions: 280 x 230 x 530 mm.
- Weight: 15 kg.

S0165

Delivered complete with cone and recipient cup

Common accessories for models S0165 - S0165S - S0165S/N

Supplementary cone

S0165/1

Recipient cup

S0165/2

Ø 55 - H 35 mm

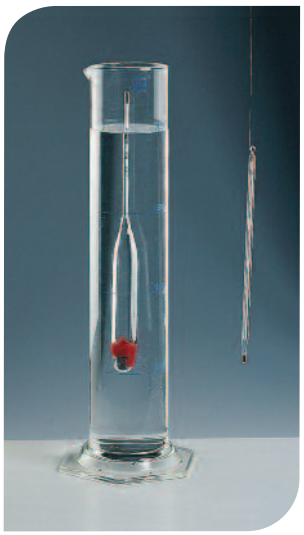
Granulometric analysis by sedimentation

Sedimentation analysis

According to NF P94-057

S0155	The appliance
T0060/A	Densimeter 0,995 - 1,035
S0155/11	2 normalised test tubes Ø 85 mm ± 5 mm, 2 500 ml
D1199	2 thermometers 0 + 50 °C/0,5 °C
T0060/9S	Manual stirrer, length 600 mm
T0060/1	Mechanical stirrer 10 000 tr/min with stainless steel recipient
D0802	Sodium hexametaphosphate, 1 kg
D2102	Distilled water, 5 l bottle

T0060/1

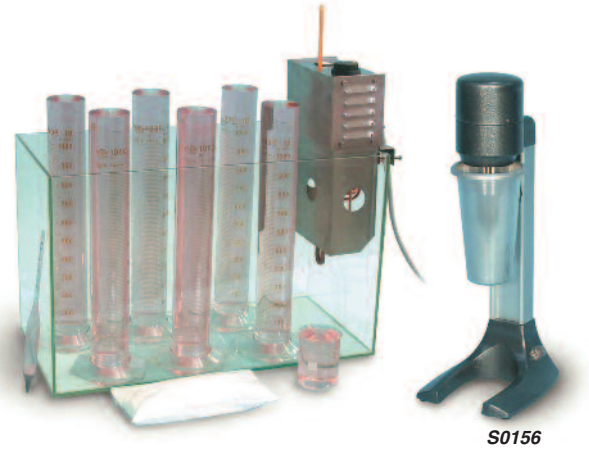


T0060/A

Sedimentometry

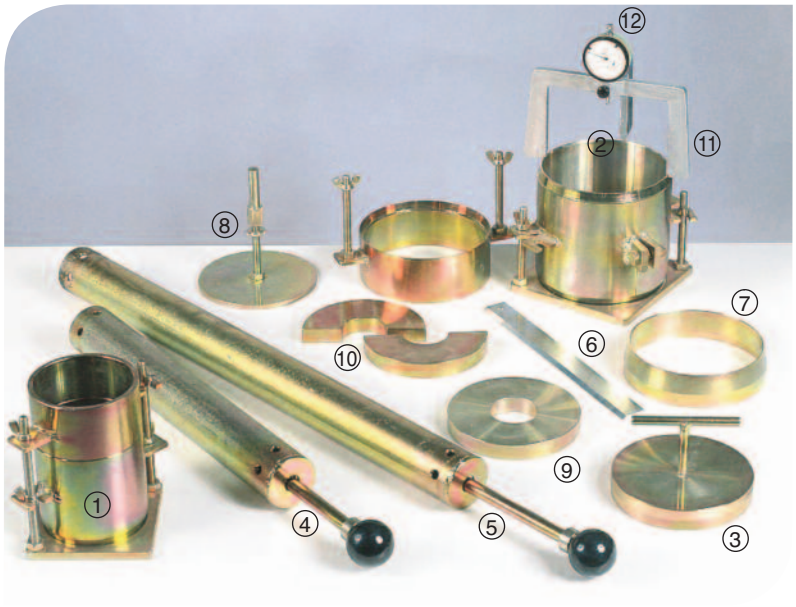
According to ASTM D422 / AASHTO 88 / UNE 103.102

S0156	The appliance
T0060/A	Densimeter 0,995 - 1,035
S0155/1	6 normalised test tubes, 1000 ml
S0155/4	Tank, 600 x 300 x 380 mm
V0240	Heating stirrer with thermostat and thermometer, 220 V 50 Hz -1 000 W
D1073.4	Pyrex beaker, 250 ml.
T0060/1	Mechanical stirrer: 10 000 tr/mn. with stainless steel recipient.
D0802	Sodium hexametaphosphate, 1 kg



S0156

CBR Proctor test



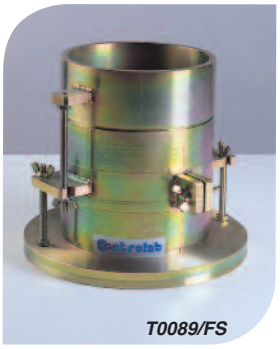

S0114

Universal extruder

S0114

Designed for the extraction of test specimens with diameters of 4", 6", 100 and 150 mm, as well as CBR, Proctor and Marshall test specimens. Composed of a hydraulic jack, 50 kN, with accessories.

- Dimensions: Ø 300 x 500 mm.
- Weight: 30 kg.


T0089/FS

High precision split CBR mould

T0089/FS

In strict compliance with standards, with very meticulous machining and very accurate tolerances ensuring :

- Interchangeability of the covers.
- Easy to (quick fastening).
- A better product longevity and greater sturdiness.
- Base Ø: 25 cm.
- Weight: 14 kg.

	Standards EN 13286-2		*Standards NF P94-093, NF P94-078*	
	Dimensions	**References**	**Dimensions**	**References**
1- Proctor mould	Ø 100 mm	**T0070/01**	Ø 101,6 mm	**T0070**
Split Proctor mould	Ø 100 mm	**T0071/01**	Ø 101,6 mm	**T0071**
2- Normal CBR mould	Ø 150 mm	**T0070/02**	Ø 152 mm	**T0089**
Split CBR mould	Ø 150 mm	**T0071/02**	Ø 152 mm	**T0089/F**
3- Spacing disc	Ø 99,5 x 10	**T0091.2**	Ø 151 x 25,4	**T0091**
Spacer disc	Ø 149,5 x 10	**T0091.3**	Ø 151 x 36	**T0091.1**
6- Ruler off	-	**T0099/6**	-	**T0099**
4- Rammer	2,5 kg	**T0075/01**	2,490 kg	**T0075**
5- Rammer	4,5 kg	**T0076/01**	4,535 kg	**T0076/F**
8- Swelling plate	-	**-**	-	**T0092**
9- Annular surcharge weight	-	**-**	-	**T0094/F**
10- Surcharge weight	-	**-**	-	**T0095/F**

Common accessories :

	Dimensions	**References**
7- Cutting kit	Ø 151 x 40	**T0098**
11- Dial gauge support		**T0093**
12- Dial gauge	10 mm	**MT2046FE**
12- Dial gauge	25 mm	**MT2050E**
13- Imbibition tank	600 x 400 x 400 mm	**T0100**


T0100

	PROCTOR standards ASTM D558, 559, 1557			*CBR standards ASTM D1883*	
	Dimensions	**References**		**Dimensions**	**References**
Proctor mould	Ø 4" (Ø 101,6 x 116,4)	**T0077/01**	Normal CBR mould	Ø 6" x 7" (Ø 152,4 x 177,8)	**T0078/01**
Split Proctor mould	Ø 4" (Ø 101,6 x 116,4)	**T0077/02**	Split CBR mould	Ø 6" x 7" (Ø 152,4 x 177,8)	**T0078/02**
Modified Proctor mould	Ø 6" (Ø 152,4 x 116,4)	**T0077/03**	Spacer disc	Ø 5"15/16 (Ø 150,8 x 61,4)	**T0078/03**
Split Proctor mould	Ø 6" (Ø 152,4 x 116,4)	**T0077/04**	Strike off		**T0099**
Rammer	Ø 2" - 2,495 kg	**T0077/05**	Rammer	Ø 2" - 4,54 kg	**T0078/04**
Rammer	Ø 2" - 4,536 kg	**T0077/06**			

Laboratory tests

CBR Proctor automatic compactor

According to EN 13286-2, EN 13286-47 / CNR N.29,69 / ASTM D698, D1557, D1883 AASHTO T99, T180, T193 / BS 1377:4, 1990, 1994 / NF P94-066, P94-078, P94-093 DIN 18127 / UNE 7365, 7255, 103-501-94

Range of automatic compactors ensuring a greater compacting uniformity and precision.
A separate electronic control panel controlled by micro processor is used to select the desired standard.
Interchangeable treated steel rammers.
Can be delivered in different versions (see table opposite) with the set of rammers corresponding to the ordered model.

- Elect. supply: 230 V 50 Hz 500 W.
- Dimensions: L 610 x 470 x 1710 mm.
- Weight: 165 kg.

S0195TP/01

S0195TP

Fixing clamp for adaptation of any type of Proctor or CBR mould.

Types of machine

Delivered with rammer for standard	Basic model	With protective doors
EN 13286-2	S0195/01	S0195TP/01
NF P94-078	S0195	S0195TP
ASTM D1883	S0195/02	S0195TP/02

Accessories : Rammers

Standard	Weight	Reference
EN 13286-2	2,5 kg	S0195/R24
EN 13286-2	4,5 kg	S0195/R25
NF P94-078	2,490 kg	S0195/R22
NF P94-078	4,535 kg	S0195/R23
ASTM D1883	2,490 kg	S0195/R26
ASTM D1883	4,540 kg	S0195/R27

S0195/01 and S0195/03

Table of correspondences

Standard - type of mould - number of blows

Standard	Mould in conformity	Diameter	Number of blows
EN 13286-2	*NF P94-078*	Ø 101,5 mm	25
		Ø 152 mm	59
	EN 13286-2	Ø 100 mm	25
		Ø 150 mm	56
NF P94-078	*NF P94-078*	Ø 101,5 mm	25
		Ø 152 mm	56
ASTM D1883	*ASTM D1883*	4"	25
		6"	56

OPTION on basic model Sound proofing enclosure S0195/03
(can not be installed on the model with protective doors)

CBR test

According to EN 13286-47 / ASTM D1883 / BS 1377-4:1990 / AASHTO T193 / NF P94-078

Manual CBR press

T0105/0

The load is applied by means of a jack screw. The loading rate is obtained with a chronometer or a ratemeter (as option). Delivered with CBR piston and accessories.
- Dimensions : 430 x 380 x 1 180 mm.
- Weight: 80 kg.


T0105/0

Electric CBR press

T0105.1

Similar to manual model by with loading at 1.27 mm/minute. Delivered with CBR piston and accessories.
- Dimensions: 430 x 380 x 1 180 mm.
- Weight: 98 kg.

Two-speed Marshall / CBR press

S0213S

Similar to model **T0105.1** but with 2 advance speeds: 1.27 mm/minute and 50.8 mm/minute. Delivered with CBR piston and accessories.
- Dimensions: 430 x 380 x 1 180 mm.
- Weight: 98 kg.


T0105.1

Multi-speed Marshal / CBR press

S0212

Similar to model **T0105.1** but with adjustable advance from 05 to 63 mm/minute. Delivered with CBR piston and accessories.
- Dimensions: 430 x 380 x 1 180 mm.
- Weight: 98 kg.

Multi-speed Marshal / CBR press

S0215E

Similar to model **S0212** but with 8-way acquisition system
- Dimensions: 650 x 500 x1350 mm.
- Weight: 180 kg.

supplied wihout accessories, softwares and computer

Penetration speeds

- Simple compression test : speed: 0.635 mm/min.
- CBR test (BS standard) : speed: 1 mm/min.
- CBR test (standard AFNOR & ASTM) : speed: 1.27 mm/min.
- MARSHALL test : speed: 50.8 mm/min.
- Duriez test : speed: 60 mm/min.

Accessories

CBR ratemeter

S0210/2

Used to monitor the penetration speed of 1.27 mm/minute on a manual machine. It includes the ratemeter with a 30 mm stroke dial gauge and attachment system.

Compression plates

S0212/8

Ø 120 mm for simple compression test.

Non return device for dial gauge

S0371

Used to block the measurement needle on the measured maximum value.

Accessories for S0215E

Software fo CBR press with cyber-plus

S0217/CBR

Common accessories for presses T0105/0 T0105.1 - S0212 - S0213S

Proving rings

With conversion tables in kN (see table).

S0370/14	400 kN
S0370/13	250 kN
S0370/11	100 kN
S0370/10	60 kN
S0370/9	50 kN
S0370/7	30 kN
S0370/6	20 kN
S0370/12	15 kN
S0370/5	10 kN
S0370/4	5 kN
S0370/3	3 kN
S0370/2	2 kN
S0370/1	1 kN
S0370	0,5 kN

Laboratory tests

Automatic digitised CBR test machine

T0105.21

- Automatic advance speed at 1.27 mm/minute.
- Measurement of force with 50 kN electronic force sensor.
- Measurement of displacement with electronic displacement sensor.
- Cyber-Plus data acquisition system.
- Weight: 98 kg.

Automatic CBR test machine with acquisition

T0105.1S

- Automatic advance speed at 1.27 mm/minute.
- Measurement of force with 50 kN electronic force sensor.
- Measurement of displacement with electronic displacement sensor.
- Cyber-plus data acquisition system and Proctor or CBR software for curve memorisation and processing of results.
- Delivered without PC or printer.
- Weight: 98 kg.

T0105.21

S0216

Universal multipurpose press 50 kN

S0216

For testing :

- Soil:CBR, UNCONFINED COMPRESSION, QUICK TRIAXIAL.
- Asphalt: MARSHALL, SPLITTING TENSILE, DIRECT SHEAR (Leutner).
- Concrete: FLEXURE ON BEAMS, FLEXURE ON TILES.
- Cement: FLEXURE on 40 x 40 x 160 mm specimens, COMPRESSION on cubes 40, 50, 70mm TENSILE on mortar briquettes.
- Metal, plastic, wires, ropes, textiles, papers etc.:
  - TENSILE TESTS, 25kN max capacity load.
- Clay blocks: PUNCHING.
- Rock and stones: UNIAXIAL SPLITTING TENSILE.

Characteristics :

- Maximum compression capacity: 50kN.
- Adjustable testing speed from 0,01 to 51mm/min.
- Adjustable pace rate from 1 to 15000N/sec.
- Ram speed: 51mm/ min .
- Max. ram travel: 100mm.
- Daylight between columns: 380mm.
- Max. vertical daylight: 850mm (adjustable).
- Display on panel control witch allows to connect 4 analogue.
- A/D outputs for transducers or load cells, memory up to 100.
- Security end of travel High/low.
- Power supply: 230V 1F 50/60Hz 1500W.
- Dimensions: 500 x 450 x 1450 mm.
- Weight: 130 Kg approx.

Accessory

Load cell 50 kN

S0216/01

Consolidation of soils

Front loading œdometer

According to XP P94 090-1 / ASTM D2435,D3877,D4546
AASHTO T216 / BS 1377:5 / UNE 103-601, 103-602

T0302

For testing consolidation of intact or drained soils subjected to vertical loads.
Aluminium alloy construction frame to provide high degree of precision with minimum deformation.
The lever has 3 ratios - 9 : 1, 10 : 1 and 11 : 1, and is equipped with an adjustable counterweight.
This odometer can be used with cells up to 100 cm2.

- Delivered without cell, dial gauge, weights and mounting bench.
- Dimensions : L 200 x P 750 x H 500 mm.

Œdolab Connect software and reports availables with your oedometers (See page 18.)

Œdomètre numérisé avec capteur de déplacement

T0302/01

Similaire au modèle **T0302** mais avec un capteur électronique de déplacement permettant le transfert et l'exploitation des données sur une centrale d'acquisition.

Indispensable accessories

10 mm dial gauge 1/100

MT2046FE

Bench for 1 œdometer

T0311

Bench for 3 œdometers

T0312

Set of 50 kg of weights

T0230/C

4 x 10 kg, 1 x 5 kg, 2 x 2 kg et 1 x 1 kg.
Other mass on request.

8 channels acquisition

S0366/07

Set monitored by micro processor.
Colour LCD, QVGA (320 x 240 pixels) "touch screen" display,
It automatically performs test and data processing.
Directly connected to PC via USB, it prints the test certificate.
Equipped with slots for external Pendrive or SD Card infinite memory supports.

- Processor: 312 MHz
- 1 SD card slot
- 2 USB ports
- Frequency: +200Hz for the 8 channels
- Elect. supply: 230 V 50 Hz.
- Dimensions: 260 x 250 x 150 mm.
- Weight: 5 kg.

S0366/07

S0366/128

128-channel data acquisition unit

S0366/128

Similar to model **S0366/07** but with possibility of receiving from 16 to 128 different signals.
Set monitored by 32-bit micro processor.
Simultaneous display in real time of up to 8 channels on high definition LCD screen 320 x 240 mm.
With 3 V, 5 V and 10 V dc outputs for auxiliary sensors.

- Elect. supply : 230 V 50 Hz.
- Dimensions : 460 x 540 x 350 mm.
- Weight : 12 kg.

Laboratory tests

Automated pneumatic oedometer

According to BS 1377:5 / ASTM D2435

T0304

Application of load by means of integrated pneumatic jack with adjusted air pressure.
Measurement of the deformation by electronic displacement sensor (not supplied).
Transfer of data to PC using supplied software.
Local indication on high definition LCD screen, 320 x 240 mm.

- Two measurement scales: 0 -1 499 and 1 500 - 15 000 Newton.
- Resolution: 1 Newton.
- Max. load: 15 kN with 8-bar pressure air supply.
- Elect. supply: 230 V 50 Hz.
- Dimensions: 240 x 370 x 450 mm.
- Weight: 30 kg.

T0304

Indispensable accessories to be ordered

Œdometric cell, displacement sensor and compressor.

Accessories

Displacement sensors

Supplied with mounting support and 2.5 m or 10 m cable.
Choice of 3 different models:

- Potentiometric.
- With gauges.
- LVDT miniature (ask for info).

Compressor

T0304/1

- 50-litre tank.
- Pressure: 10 bars.

Supplied complete with filter.

- Elect. supply: 220 V 50 Hz.
- Weight: 30 kg.

Accessories

Cells for œdometer

Common for apparatus - **T0302/01** and **T0304**.
2 types of cells are available:

- Normal with fixed ring permitting saturation of the sample and integrating the cutting kit so that sample caracteristics can be preserved.
- For permeability: idem above but with burette and connection fitting

Diameter	Cell	Sample thickness	Normal ref.	Permeability ref.
Ø 50,47	20 cm^2	20 mm	**T0320**	**T0322**
Ø 71,40	40 cm^2	20 mm	**T0325**	**T0327**
Ø 79,80	50 cm^2	20 mm	**T0330**	**T0332**
Ø 112,80	100 cm^2	25 mm	**T0335**	**T0337**
Ø 75	44, 16 cm^2	20 mm	**T0324**	**T0326**

T0322

Direct and/or alternate shear

S0280

Basic automatic electronic shearing apparatus

According to NF P94-071-1, NF P94-071-2 /ASTM D3080 / AASHTO T236 / BS 1377:7

S0280

Control by microprocessors with digital readout of selected parameters.
- Speed can be adjusted without discontinuity from 0.0001 to 3 mm/minute.
- Programmable cycle with different advance and return speeds.
- Elect. supply: 220 V, single-phase.

Delivered without case or cover, with :
- Proving ring, 2 or 3 kN.
- 2 dial gauges.
- Reduction gear 10 : 1.
- Set of weights, 50 kg.
- Dimensions: 1 200 x 550 x 1 100 mm.
- Weight: 150 kg.

Softwares Shearlab connect and reports avalaibles with your shearing apparatus.
See page 19.

S0280S

Automatic electronic shear apparatus with data acquisition and processing system

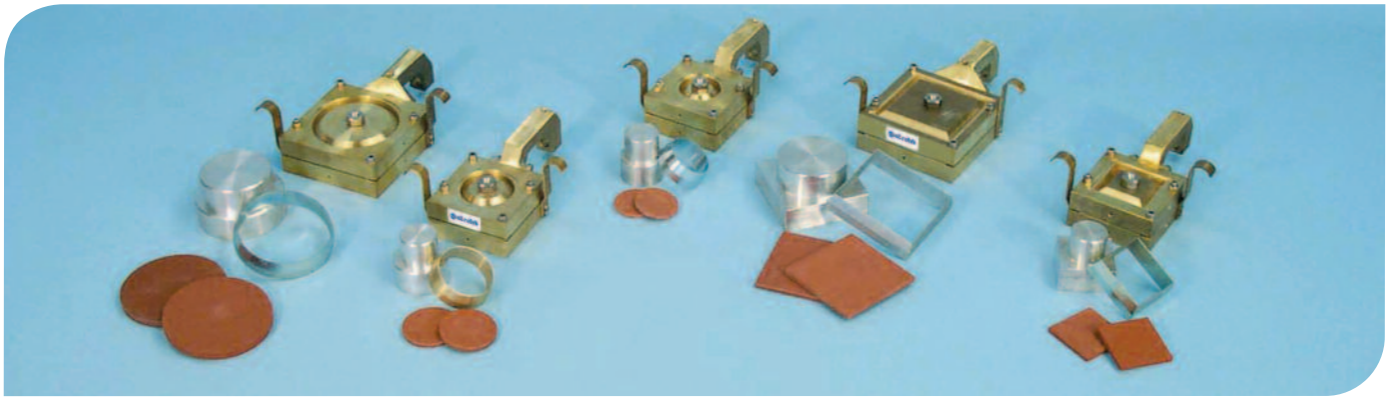
According to NF P94-071-1, NF P94-071-2 /ASTM D3080 / AASHTO T236 / BS 1377:7

S0280S

Controlled by microprocessors with digital readout of selected parameters.
- Speed can be adjusted without discontinuity from 0.0001 to 3 mm/min.
- Programmable cycle with different advance and return speeds.
- Elect. supply: 220 V, single-phase.

Delivered without case or cover, with :
- Force sensor, 3 kN.
- Vertical displacement sensor, 10 mm.
- Horizontal displacement sensor, 25 mm.
- Basic software system for data acquisition and processing.
- Set of weights, 50 kg.
- Reduction gear 10 : 1.
- Dimensions: 1 200 x 550 x 1 100 mm.
- Weight: 150 kg.

Commons accessories for S0280 / S0280S / S0280P



Models	Box	Porous stones	Cutting kit	Unmoulding piston
Round test specimen 50 mm	S0282	S0286/3	S0282/1	S0282/1A
Round test specimen 60 mm	S0283	S0286	S0283/1	S0283/1A
Round test specimen 100 mm	S0287	S0286/4	S0287/1	S0287/1A
Square test specimen 60 x 60 mm	S0284	S0286/1	S0284/1	S0284/1A
Square test specimen 100 x 100 mm	S0285	S0286/2	S0285/1	S0285/1A

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Laboratory tests

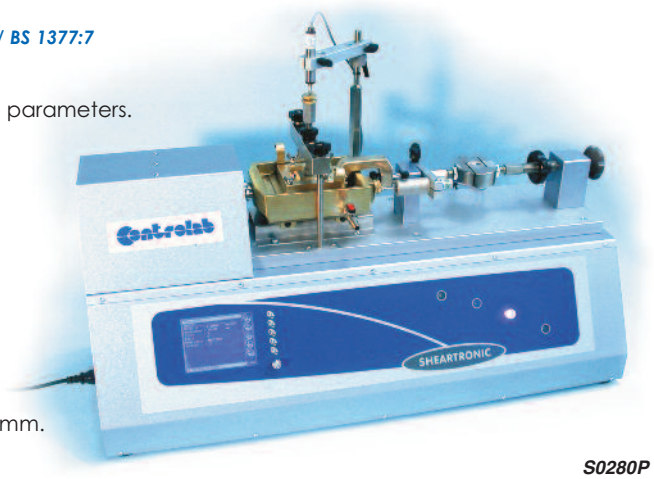
Automatic electronic pneumatic shear apparatus with data acquisition and processing system

According to NF P94-071-1, NF P94 071-2 / ASTM D3080 / AASHTO T236 / BS 1377:7

S0280P

Controlled by microprocessors with digital readout of selected parameters.
- Speed can be adjusted without discontinuity from 0.0001 to 10 mm/minute.
- Programmable cycle with different advance and return speeds.

Delivered without case or cover, with :
- Force sensor, 3 kN.
- Vertical displacement sensor, 10 mm.
- Horizontal displacement sensor, 25 mm.
- Basic software system for data acquisition and processing.
- Application of load by integrated pneumatic jack with adjusted air pressure.
- Local indication on high definition LCD screen, de 320 x 240 mm.
- Automatic pneumatic load system programmable by the data acquisition and processing software.
- Elect. supply: 220 V 50 Hz.



S0280P

Extractors

S0112

Manual screw-type extractor

S0112

Max. stroke: 650 mm.
Suitable for unmoulding samples of Ø 35 to 101.6 mm.
Supplied with accessories for unmoulding samples Ø 38, 83 and 100 mm.
- Dimensions: 1 700 x 700 x 1 200 mm.
- Weight: 90 kg.

Electrical version

S0113
- Elect. supply: 220 V 50 Hz.
- Weight: 110 kg.

S0111

Motorised hydraulic extruder

S0111

Suitable for rapid and continuous extraction of samples of Ø 35 to 101.6 mm.
Max. stroke: 900 mm.
Hydraulic pumping unit with flow rate adjustment to regulate jack speed.
Max. force: 70 kN.
Supplied with accessories for unmoulding samples of Ø 38, 85 and 100 mm.
Wheel-mounted metal frame.
- Elect. supply: 220 V 50 Hz 1300 W.
- Dimensions: 2 741 x 635 x 1 200 mm.
- Weight: 160 kg.

S0120

Manual test specimen cutting edge apparatus

S0120

Can be used with test specimens of max. length of 230 mm and of Ø 38 to 110 mm.
Supplied with 3 sets of plates, Ø 38, 50, 47 and 60 mm, a wire saw and 6 spare wires.
- Dimensions: Ø 460 x 720 mm.
- Weight: 20 kg.

Accessories

Set of plates

S0120-1

Ø 38 to 110 mm
(Ø to be specified when ordering).

Knife

S0125M

Saw

S0124

With 6 spare wires.

Permeability of soils

Compaction permeameter

According to CEN ISO-TS 17892-11 / NF X30-441

For determination of the water permeability of soil samples (clay, sands, gravels, etc.).
Including:
- Cadmium-plated steel mould body.
- 1 upper base plate with water inlet orifice and valve.
- 1 lower base plate with water outlet orifice.
- 2 perforated discs with stainless steel sheet, mesh 0.08 mm.

Ref.	Mould body Ø int. mm	Weight kg
S0252	101,6	8
S0253	152,4	16

S0253 et S0252

Accessory Filters Ø 150 mm

D1800

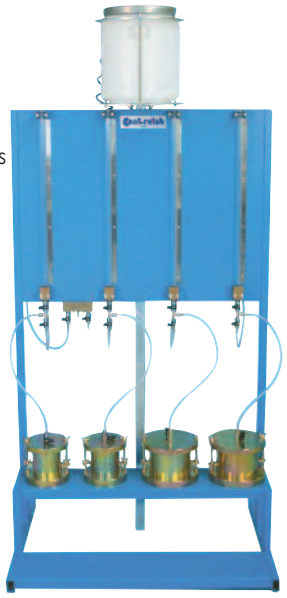
Pack of 100.

Permeameter support

According to NF P94-051

S0248

Used to simultaneously perform tests, with constant head or variable head, on 4 permeameters (to be ordered separately).
- Supplied with tank, connections, tubing and graduated burettes.
- Dimensions: 1 050 x 900 x 2 000/3 850 mm.
- Weight: 75 kg.



S0248

Single station

According to NF P94-051

S0247

permeameter support
Used to perform tests with constant head or variable head on a permeameter including:
- Panel equipped with 3 burettes, Ø 3, 4 and 6 mm for test at variable head.
- A water tank.
- The connection tubes.

Delivered without permeameter.

S0247

Sample preparation

Shear mixer for soils

According to NF P94-093

S0198	10 L
S0196/10	13 L
S0196/20	20 L

Used in particular for the preparation of test specimens of clayey soils.
Extremely solidly-built, complete stainless steel construction.
- Capacity: 13 litres.
- Horizontal shaft cutter and turning tank ensuring perfect homogenisation.
- Emergency stop.
- 2 speeds.
- Elect. supply: 380 V, three-phase.
- Power: 2 800 W.
- Dimensions: 815 x 590 x 500 mm.
- Weight: 110 kg.

S0198

Accessory Spare knife

S0198/R20

Pack of 3 knifes.

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Triaxial test

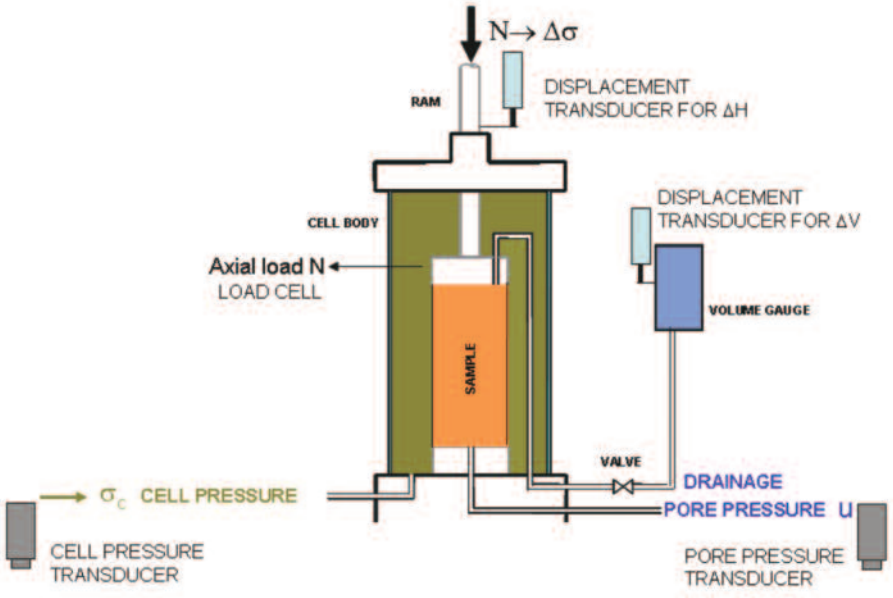
For several years now, CONTROLAB has been working through its engineering design department to be able to propose innovative techniques for carrying out your triaxial tests. Backed by its experience in the field of floor tests and its position as leader in materials testing, CONTROLAB is proud to propose full and original solutions for carrying out your tests (UU, CU+u, CD).

Principle in the triaxial test

Triaxial tests are carried out to assess the maximum acceptable load for shallow foundations (bearing capacity), for the design of foundations on piles or pillars, and the dimensioning of embankment slopes, etc. Basically, it means submitting soil specimens for shearing and measuring its resistance to tangential stresses. The cohesion and ground friction angle will be determined accordingly.
The triaxial test is a test of the axial compression of cylindrical specimens isolated by a rubber membrane and subjected to an imposed σ3 isotropic hydrostatic pressure. The axial compression is maintained at a constant speed until breaking is attained. The test is often carried out simultaneously on three test specimens subjected to three different hydrostatic pressures.

Stages in a TRIAXIAL test:

- Checking the appliance
- Preparing the specimen
- Installing the test specimen
- Possible saturation
- Possible consolidation
- Shearing



Controlab has developed acquisition and treatment software in French conforming to standards NF P94-070 and NF P94-074.

Automatic acquisition is broken down into :

- Introduction of the specimen's parameters.
- Acquisition of data during the various test phases (water volumes, pressures, strength and movements).
- At the end of the test, processing of the data and writing a report.

CONTROLAB proposal:

- 1 triaxial manual to be acquired manually.
- 1 triaxial 1 cell automatically acquired.
- 1 triaxial 3 cell automatically acquired.
- 1 TriaxLab (1 to 3 cells) integrated test bench grouping the various components, the drive valves as well as the displays.
- 1 acquisition software (TriaxLab Connect) to record the data when the tests are carried out.
- 1 data processing software (TriaxLab Reports) to prepare your reports in accordance with standards ***NF P94-070*** and ***NF P94-074***.

So that the time taken for the test is optimised, we advise you to acquire a three-cell system which enables the saturation and consolidation phases to be carried out simultaneously.

More and more customers have expressed their satisfaction, both in France and abroad, the proof of the quality of the products which our teams have developed.
When your equipment is installed, our specialists are at your disposal to train your users.

Triaxlab Connect Software

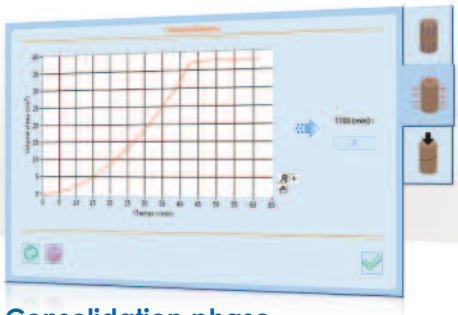
In connection with your triaxial apparaturs and in compliance with standards NF P94-070 and NF P94-074.

Very ergonomic et specially developed for conducting your tests, TriaxLab Connect assists you throughout the different phases (saturation, consolidation and shearing) of each test.

TriaxLab Connect saves the different phases of your tests simultaneously on each cell.

Saturation phase

For each level of saturation, TriaxLab Connect retrieves the back-pressure value (Ucp) and calculates the Skempton factor (B).



Consolidation phase

During the consolidation phase of your consolidated-undrained tests with interstitial pressure measurement and your consolidated-drained tests, the curve of the volume of water evacuated as a function of time is displayed.
At the end of this phase, the software calculates the end time of consolidation (T100).

Shear phase

A table with all the values measured allows you to follow the evolution of the shear phase.

For each phase, TriaxLab Connect carries out data acquisition and saves the information about the test in a file in a standard format.
This file can be used both by Controlab's Triaxlab Reports software and by Excel®.

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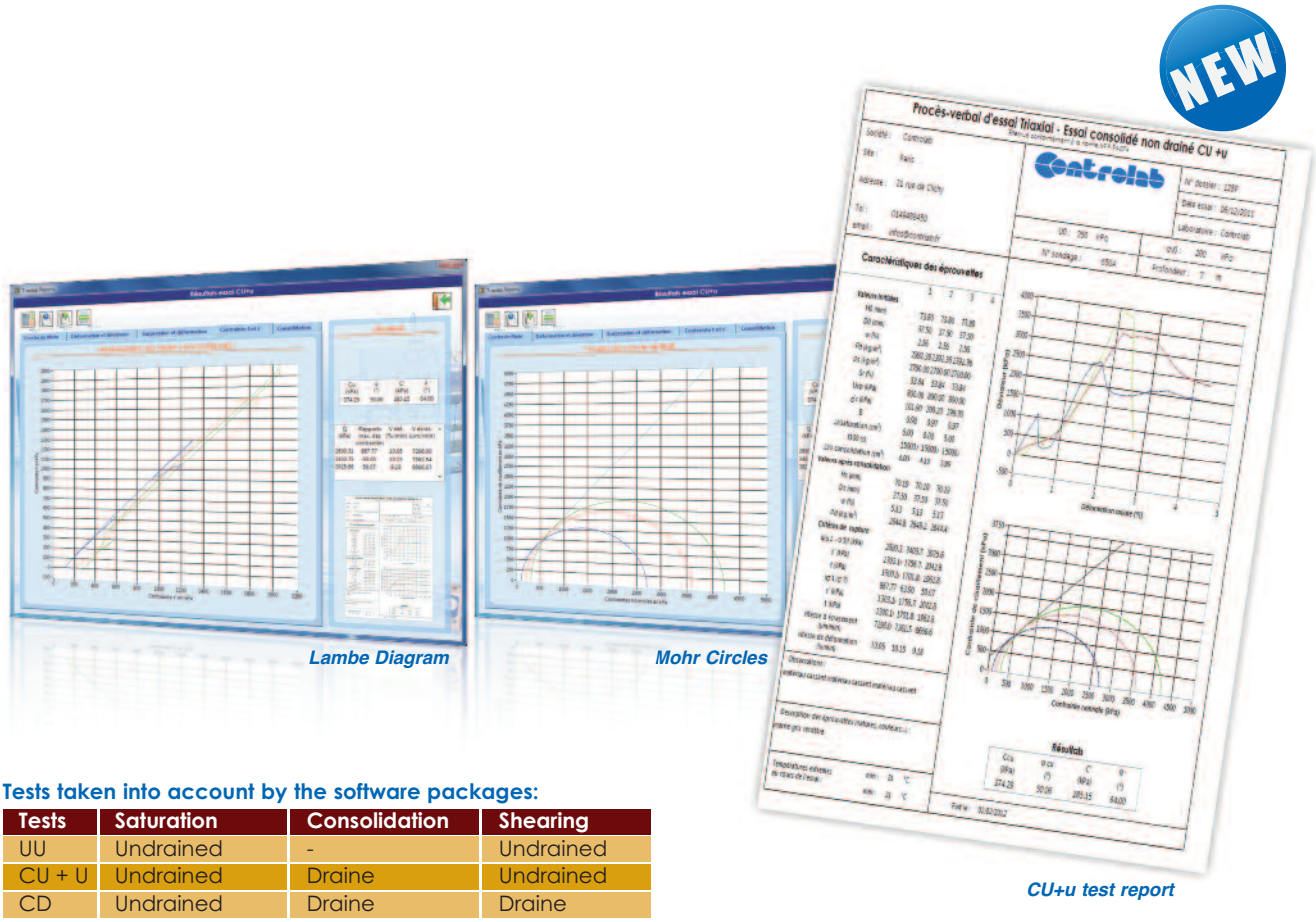
Triaxial test

Triaxlab Report Software

In accordance with standards NF P94-070 and NF P94-074

Specially designed to exploit the results of your triaxial tests, TriaxLab Reports enables the tests to be centralised within the same project for all soil specimens.

TriaxLab Reports proposes a dual function:
- Either to retrieve the tests files generated by Triaxlab Connect
- Or to enter your test data manually



Tests taken into account by the software packages:

Tests	Saturation	Consolidation	Shearing
UU	Undrained	-	Undrained
CU + U	Undrained	Draine	Undrained
CD	Undrained	Draine	Draine

The software makes calculations in accordance with the standard and enables a customised report to be drawn up for each test (UU, CU+u, CD).

In accordance with the report drawn up, TriaxLab Reports will provide you with:
- The deviator curves according to the deformation.
- The Mohr circles for each test as well as the overall tangent.
- The instititial pressure curves according to the deformation.
- The Lambe representation for each test.
- The change in the volume of water expelled during the consolidation phase for each test.

Triaxial test

Standard triaxial set

According to NF P94-070, P94-074 / ASTM D2850, D4767 / BS 1377:6, 7, 8 / CEN-ISO-TS 17892-8, 9

Contact us

This system carries out routine triaxial tests at the lowest cost and is particularly appreciated by educational establishments as it enables the students to be made aware of the measurements made manually during the test.

It is made up of:

- a shearing press fitted with a proving ring and an analog dial gauge,
- 2 analog manometers,
- 2 screw pumps,
- 1 pressure/volume controller,
- 2 interfaces air/eau,
- 1 de-aerator,
- 1 triaxial cell,
- 1 vacuum pump,
- 1 compressor.

The tools according to the dimensions of the specimen should be ordered separately.

50 kN manual measuring triaxial digital press

Contact us

Characteristics of the press:

Micro-processor based electromechanical system with adjustment continuous digital speed display from 0.00001 to 6 mm/min.
Enables standard cells with soil specimens to be accepted up to 100 mm diameter and 200 mm length. Plate with a diameter of less than 177 mm.

- Distance between columns: 305 mm.
- Available working space: 0 – 530 mm
- Proving ring.
- Analog dial gauge.
- Stroke limiters.
- Power supply: 230 V 50 Hz 750 W.
- Dimensions: 420 x 580 x 1 410 mm.
- Weight: 105 kg.

Press included in the above unit.
May be ordered separately.

Triaxial test

TriaxLab: 3-cell integrated triaxial test bench

According to NF P94-070, P94-074 / ASTM D2850, D4767 / BS 1377:6, 7, 8 / CEN-ISO-TS 17892-8, 9

Contact us

Specially studied to make it easier to carry out the tests, this unit incorporates all the required components.
They are installed ergonomically by dividing the functions by cell. The installation and commissioning are reduced to the strict minimum. The bench mounted on castors may in this way be moved from one laboratory to another in a few minutes.

It is made up of:

- a shearing press fitted with force sensor and a digital movement sensor,
- 3 digital displays,
- 9 pressure sensors,
- 3 screw pumps,
- 3 pressure/ volume controllers
- 6 air/water interfaces,
- 1 de-aerator,
- 3 triaxial cell,
- 1 vacuum pump,
- 1 compressor.

Depending on the dimensions of the specimen, the tools should be ordered separately.

TriaxLab: 1-cell integrated triaxial test bench

Contact us

50 kN automatic acquisition triaxial digital press

Contact us

Characteristics of the press:

Micro-processor based electromechanical system with adjustment and continuous digital speed display from 0.00001 to 6 mm/min.
Enables standard cells with soil specimens to be accepted up to 100 mm diameter and 200 mm length. Plateau with a diameter of less than 177 mm.

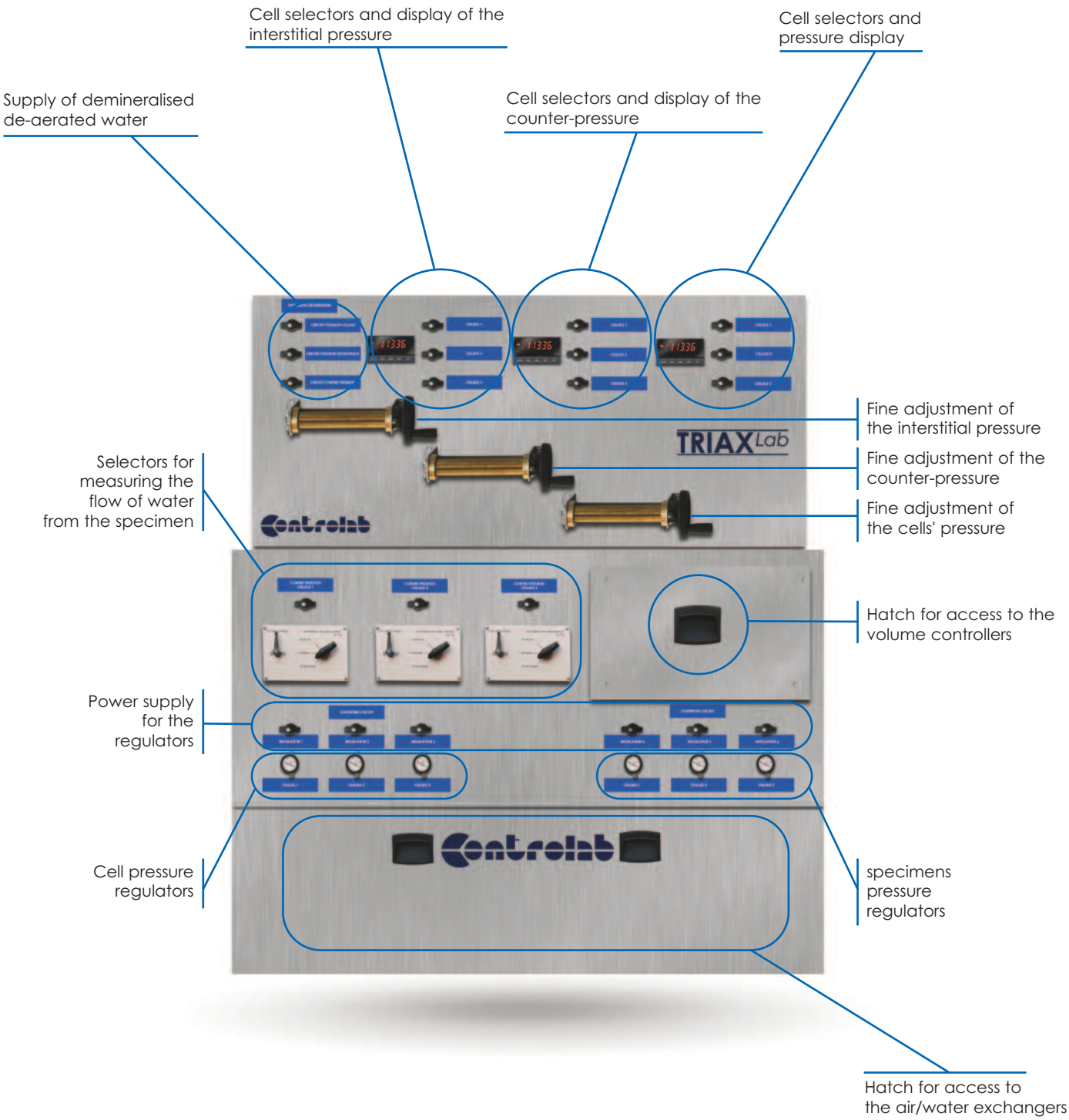
- Distance between columns: 305 mm.
- Available working space: 0 – 530 m.
- Force sensor.
- Digital movement sensor.
- Power supply: 230 V 50 Hz 750 W.
- Dimensions: 420 x 580 x 1 410 mm.
- Weight: 105 kg.

Press included in the above unit.
May be ordered separately.

TriaxLab: Schéma 3-cell integrated triaxial test bench

Advantages in TriaxLab:

- Ease of installation.
- Fully assembled – Simply connect it to an electric power source.
- Triaxial system integrated into a compact bench.
- Mounted on castors to facilitate is positioning in the laboratory.
- Visualization of data in real time.



Triaxial test

Choice of test equipment according your needs:

	Specimens Ø 38 to Ø 70 mm		Specimens Ø 38 to Ø 100 mm	
	Manual	Automatic	Manual	Automatic
50 KN Machine (without measuring equipment)	●	●	●	●
Cell up to Ø 70 mm	●	●		
Cell up to Ø 100 mm			●	●
Manual measurement	●		●	
Automatic acquisition		●		●
Test specimen Ø 38 mm	○	○		
Test specimen Ø 50 mm	○	○		
Test specimen Ø 70 mm	○	○		
Test specimen Ø 38 mm			○	○
Test specimen Ø 50 mm			○	○
Test specimen Ø 70 mm			○	○
Test specimen Ø 100 mm			○	○
Option equipment console or 3 cellules		○		○

Corresponds to the photos above ● Mandatory ○ Optional

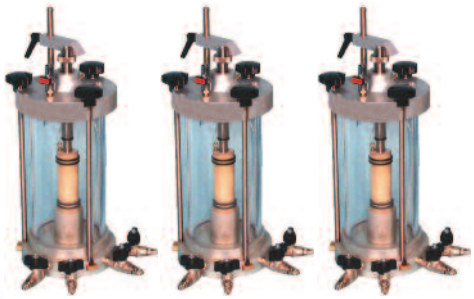


Table of contents

Sample preparation

Portable saw

C0351

For cutting samples.
- Max. blade Ø: 350 mm.
- Rotation speed: 3 900 rpm.
- Elect. supply: 230 V 2 000 W.
- Fixation device supplied.
- Dimensions: 560 x 460 x 390 mm.
- Weight: 20 kg.

C0351

Indispensable accessory

Diamond blade

C0350/3	Ø 350 mm

Rock hardness

L-type rock sclerometer

According to ASTM D5873

C0185

Similar to the N sclerometer for concrete but with three times lower percussion energy. Particularly adapted for sensitive components to shocks and pieces with thin walls.
- Measurement range: 10 to 70 MPa.
- Weight: 1.5 kg.

C0185

Support for sclerometer and sample test tube

A0121

- Weight: 10 kg.

A0121

Digital point load tester

According to ASTM D5731

A0125

For in-situ or laboratory determination of the resistance of a rock of max. dia. 101.6 mm (4") according to formula P / D2.
- P = force in kN.
- D2 = distance between the punches.

With graduated indication scale of the distance between points and 0/56 kN digital manometer, resolution 0.001 kN and 1% precision.
Manual control jack, 55 kN.
Delivered in wooden crate with accessories and protection mask.
Dimensions: 370 x 320 x 710 mm.
- Weight: 25 kg.

A0125

Other version

C0094

With Ø 65 mm plates for compression of cylinders.
- Distance between plates: 110 mm.

C0094

Structure and homogeneity of rocks

Ultrasonic test equipment

According to EN 12504-4 / ASTM C597-02
BS 1881 / ISO 1920-7:2004

E0746

For nondestructive test of materials.
Resulting data on digital display (Velocity, speed).

Transit time measurement :

- Range 0.1 to 9999 µs resolution 0.1 µs.
- Transmitter Optimized energizing pulse 125V, 250V, 350V, 500V, AUTO.
- Bandwidth 20 kHz to 500 kHz.
- Selectable gain steps 1x, 10x, 100x, AUTO.
- Battery 4 x AA batteries, primary or recharchable.
- Mains Via USB charger.
- Power ratings 3,6 to 6 volt.
- Operating temperature -10° to 60°C.

The set consisting of :

Display unit, 2 transducers (54 kHz), 2 BNC cables 1.5 m, couplant, calibration rod 25 µs, USB charger with USB-cable, 4 x AA (LR) batteries, data carrier with software, documentation and carrying case.
It can supports a wide range of transducers from 24 kHz up to 500 kHz.

- Dimensions 172 x 55 x 220 mm.
- Weight 1.31 kg.

Accessory
Exponential transducer

E0643/R11

E0746

Characteristics of rocks

Automatic shaker

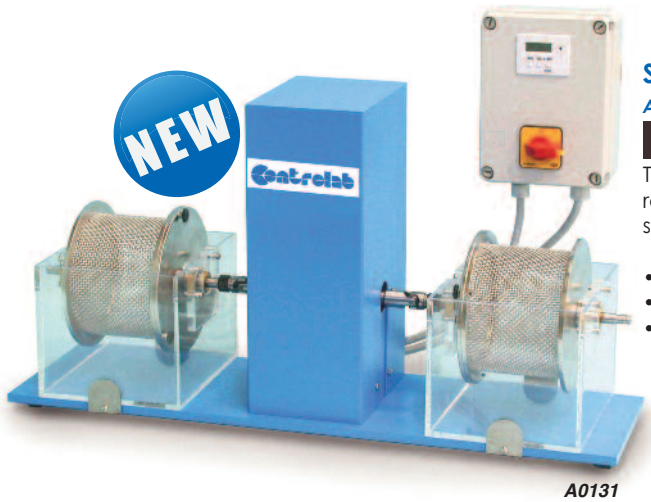
According to EN 1997-2 / BS 1377:2

A0117

Used to determine the specific gravity of soils, it rotates two gas jars at approx. 50 rpm to satisfy BS Standard. The shaker is equipped with an original friction device conforming the unit to CE Safety Directive.

- Power supply: 230 V 50 Hz 1ph 150 W.
- Dimensions: 550 x 430 x 500 mm.
- Weight: 20 Kg.

A0117



A0131

Slake durability apparatus

According to ASTM D4644

A0131

This equipment has been developed to assess the durability of rock to weakening and disintegration when subjected to the simulated effects of climatic slaking.

- Power supply: 230V 1ph 50Hz 250W.
- Dimensions: 350x740x300 mm approx.
- Weight: 30 kg approx.

Measurement of the permeability of rock with constant load with Hoek cell

including :

Oil/water constant pressure set

S0342

Pressure adjustment from 0 to 3 500 kPa.
- Elect. supply: 230 V 50 Hz.
- Weight: 20 kg.

Burette 50 ml / 0.1 ml

A0142/1

Supplied with stand.

S0342

A0142/1

Measurement of the resistance of rock subjected to a triaxial test with Hoek cell

Used to perform triaxial tests on rocks.
Composed of a cell body for use up to 70 MPa, 2 self-obturating connections for connecting an hydraulic pump equipped with a manometer for constant pressurisation.
The axial load is exerted with a compression machine by means of a pivot joint to prevent any eccentricity

Hoek cells

Hoek cell with permeability lid

Type of cell Ø / H mm	Ref.	Code	Spare membrane	Permeability lid
21,46 x 40	**A0135**	-	**A0135/3**	**A0135/5**
30,10 x 60	**A0136**	AX	**A0136/3**	**A0136/5**
38,10 x 75	**A0137**	1,5"	**A0137/3**	**A0137/5**
42,04 x 85	**A0138**	BX	**A0138/3**	**A0138/5**
54,74 x 100	**A0139**	NX	**A0139/3**	**A0139/5**

Indispensable accessories for triaxial test

Strain gauge

AJ0001.13

Extensometric bridge

AJ0013/1

With 6 measurement channels.

Hydraulic pump

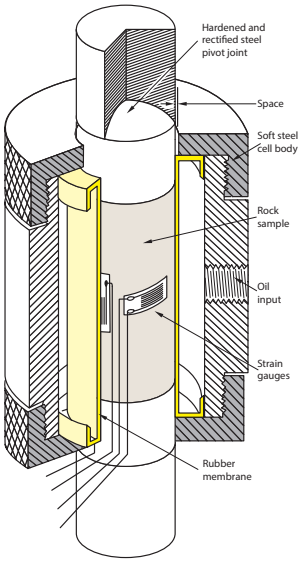
A0142

To maintain pressure.

Compression machine

C0049M

Hydraulic pump A0142



Hoek cell section drawing

Shear

Shear apparatus

A0130

Can be used with samples up to 115 x 125 mm or with core samples up to Ø 102 mm.
A vertical and a horizontal load are applied by means of 2 jacks with hydraulic pump.
The force is read out with 2 manometers, 50 kN / 1 kN (other manometers on request).

- Dimensions: 600 x 250 x 460 mm.
- Weight: 46 kg.

A0130

Delivered complete with 2 moulds

Set of 4 comparators

According to ASTM D5607

A0130/1

10 x 0.002 mm with support for measurement of vertical displacement

A0130/6

Mould

A0130/1

Mobile laboratories

The use of mobile laboratories has become an essential element to meet the needs of speed and flexibility required in modern civil engineering projects.

Mobile laboratories are used as a back-up for a central laboratory for sampling and for making an initial characterisation of the materials, or as a fully operational and autonomous unit which enables all the standard tests and analyses to be carried out.

They also have the advantage of reducing logistics costs.
Backed by our long experience in Civil Engineering laboratory equipment, we have developed a full and tailor-made range of mobile laboratories which meet the requirements of our customers both French and international.

Our mobile laboratories (concrete, soil, roads or mixed) are configured according to the nature of the site and the type and quantity of tests to be carried out:

- Selection of equipment to be taken on board.
- Organisation of vans, trailers or transportable modular units
- Tropicalisation of the equipment and/or the related vehicle.
- All-terrain vehicles or simple carriers.
- etc.

Options and accessories are generally available for our mobile laboratories such as :

- Air-conditioning or heat pump.
- Water heater, water tank and evacuation.
- Power generator.
- Stabilising stands (or automatic jacks), to avoid movement in the suspensions during the tests.
- etc.

Our Engineering Design Department and our business experts are at your disposal to design and produce the mobile laboratory which best meets your technical requirements and budget.

Table of contents

Hot extractor

According to EN 12697-1, EN 13108
DIN 1996

B0017M

Extraction is carried out in heating the sample with the solvent in order to recuperate the dissolved bitumen that passes in the basket mesh.
- Delivered with heating plate.
- Weight: 5 kg.

B0017M

Hot extractor

According to EN 12697-1
ASTM D2172 / AASHTO T164B

B0019M	Capacity 1 kg
B0019M4	Capacity 4 kg

Reflux method.
Delivered with heating plate.
- Weight: 5 or 9 kg, as per

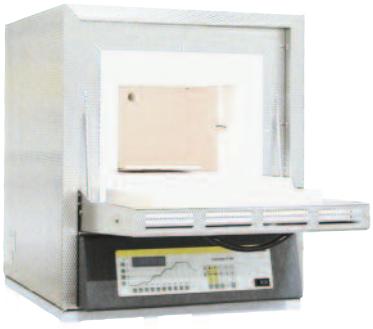
B0019M4 B0019M

Calcination furnace

According to ASTM D6307 / EN 12697-1

TT110/90SW

For determine the bond content without chlorinated solvent.
- Conditions: From 5 to 40°C, humidity < 80%.
- Volum: 9L.
- T max: 1100°C.
- Adjustable working air inlet in the door.
- Precision: +- 5°C.
- Power: 3.0 kW.
- Power supply: 230V singlephase.
- Int. Dim: 230 x 240 x 170 mm.
- Ext. Dim.: 480 x 550 x 800 mm.
- Weight: 56 kg.



TT110/90SW

Kumagawa apparatus LCPC type

According to EN 12697-1

B0005.1	With 1 litre tank
B0005.2	With 2 litre tank

For extraction of bituminous mixtures:
Delivered complete with tank, cooler, graduated reception tube for solvent lighter than water (in case of solvent heavier than water, specify when ordering), brass basket, tank heater with regulator, without cartridge.

Accessories
Box of 25 cartridges :

B0005.11	58 x 170 mm
B0005.21	80 x 200 mm

B0005.1/2

Indispensable accessories including :

Protective glasses

D1532.7

Polycarbonate glasses, anti-abrasion treated.

Protective glasses

D1532.9

Black Propiane frame, singlepiece Polydur eyepieces, shells.

Protection gloves

D1530	①
D1531	②
D1532.3	③
D1530.1	④
D1532.1	⑤

① Anti-heat gloves, resistant up to 500°C, type ALUTHERM.
② Neoprene gloves resistant to acids.
③ Type UTRANITRIL gloves for solvents and perchlorethylene.
④ Anti-heat gloves, looped cotton, double mesh, protection up to 200°C.
⑤ Handling gloves, canvas and undressed leather.

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Recuperation of asphalt

Rouen method

According to EN 12697-1

Method for determination of the bitumen content of a bituminous mixture sample whose bitumen is not modified by additives produced in laboratory or sampled on work site. It does not apply to bituminous mixtures containing fines or fibres that are less dense than the solvent is.

D0409

Large capacity shaker

D0409

Platform: 700 x 500 mm.
Suitable for 6 bottles, 2 or 3 litres.

- Amplitude: 70 mm.
- Timer: 0-30 minutes.
- Variable speed: between 40 and 80 cycles/minute.
- Weight: approx. 30 kg.

Centrifuges

B0024.11

Standard

Particularly adapted for the Rouen method.

- Max. acceleration at bottom of tube: 4 050 g at 6 000 rpm (4 000 g being the acceleration required by the standard).
- Carbon-free and maintenance-free cage.
- Possibility of memorising 3 programs.
- Digital display of speed and programmed centrifuging time.
- Very rapid, adjustable braked stop.
- Sound level < 66 dB A.
- Delivered with 6-place angular rotor permitting with reducers to house a maximum of six 50-ml Teflon test specimens.
- Dimensions: 261 x 366 x 437 mm.
- Weight: 16 kg.

B0024.11

Universal Plus

B0024.22

Similar conception to standard model, with permitting max. acceleration of 8 500 g at 9 000 rpm.

- Carbon-free and maintenance-free cage.
- Possibility of memorising 3 programs.
- Braked stop with 10 pre-adjusted curves.
- Very rapid loading with 9 pre-adjusted curves.
- Sound level < 66 dB A.
- Delivered with 6-place angular rotor permitting with reducers to house a maximum of six 50-ml Teflon test specimens.
- Dimensions: 300 x 420 x 490 mm.
- Weight: 24 kg.

B0024.22

Indispensable common accessories

50-ml Teflon tubes

B0024.2/R04

1 set of 2 tubes.

Reducer

B0024.2/R030

To accept teflon tube (useful quantity: 6).

B0024.2/R030/R04

Extractor

According to EN 12697-1, EN 13108 / ASTM D2172 / AASHTO T164A

B0011M	Capacity 1 500 g
B0012M	Capacity 3 000 g

To determine the binder content of a coated material.
- Capacity 1 500 g.
- Variable rotation speed up to 3 000 rpm.
- Safety system with quick stop.
- Removable bowl with lid.
- Elect. supply: 230 V, single-phase.
- Delivered with 100 filter discs.
- Dimensions: 580 x 300 x 480 mm.
- Weight: 50 kg.

B0011M

B0014

Continuous flow centrifuge

According to EN 12697-1, EN 13108 / DIN 1996 / ASTM D1856

B0014

For rapid separation of fillers and bitumen in a coated material.
Delivered with 2 sieves Ø 200, opening 0.08 - 1 mm,
and an aluminium recipient Ø 70 x 200 mm.
- Capacity: 15 to 20 l/h.
- Speed 11 500 rpm.
- Elect. supply : 230 V, 50 Hz, 600 W.
- Dimensions: 350 x 600 x 720 mm.
- Weight: 60 kg.

Accessory
Additional aluminium recipient

B0014/R01	Ø 70 x 200 mm

Binder recovery by rotary evaporation

According to EN 12607-3

B0065

This unit is used to recover bitumen from a solvent by minimizing the changes in the asphalt properties.
The Rotary Evaporation Apparatus is essentially composed by:
- Distillation flask 1000 ml capacity. The angle is 15° approx.
- Motor of variable speed, suitable to rotate the flask at an adjustable rate of 20 to 270 rpm.
- Condenser.
- Heated oil bath.

The instrument is supplied complete with glass tubing with three way valve and transparent flexible hose for solution intake.
The Rotatory Apparatus requires a vacuum pump and a vacuum regulating system (see accessories).
- Power supply: 230V 1ph 50Hz.
- Weight: 27 kg approx.

B0065

Recuperation of asphalt

Automatic bitumen and bituminous mixture extraction

According to EN 12697-1, EN 13108 / DIN 1996 / ASTM D2172

B0184

The system performs in only one complete automatic cycle:
- The washing, disaggregation and separation of solvents Maximal weight of mixture per extraction is 3,5 kg (400g of filler per extraction).
- A complete extraction cycle is performed: approx.
- 25 -45 mn the recovery and distillation of solvent material allow to reduce extraction costs, and toxic gases.
- Sieve unit for 8 sieves Ø 200mm.
- A solvent recovery unit having reclaiming capacity from 40 l/h to 50l/h
- Power supply: 380 V 3 ph
- Power: 5.5 kW
- Overall dimensions: 1400 x 680 x 1820 mm
- Total weight: 185 Kg

Cabinet for automatic extraction unit

B0184/4

- Power supply: 380V 3ph 1100W
- Overall dimensions: 1950 x 980 x 2630 mm
- Weight: 140 Kg approx.

B0184 and B0184/4

F0034

Automatic extraction of bitumen and bituminous mixture with integrated drying unit

According to EN 12697-1

F0034

For the determination of binder content with fully automatic drying device.
Centrifuge, solvent recovery facility and rinse and drying facility are integrated in a closed, nonpressurized system.
On a movable frame.

Characteristics:
- Cup filler capacity: approx. 200-300 g.
- Sample quantity max. 3.5 kg.
- Extraction time with drying: approx. 50 min, solvent consumption per extraction < 0.05 l.
- Dimensions: 1200 x 700 x 1600 mm.
- Power supply: 230/400 V, 50 Hz three-phase 7.5 kW.
- Weight: 450 kg.

Explosion-proof unit extraction of bitumen

According to EN 12697-1

F0035

For determination of binder content with automatic drying device.
Similar to **F0034**, however also explosion-proof for flammable solvent with following modifications :
Explosion-protected motor.
Effective heating of solvent by three explosion-protected heating elements.
External control panel.

Characteristics:
- Sample quantity: max. 3.5 kg.
- Extraction time with drying: approx 60 min.
- Protection: 3 x 25A Fuses.
- Power: 7kW.
- Power supply: 400V, 50Hz three-phase.
- Dimensions:
  Extraction 1330 x 700 x 1500 mm.
  Control panel: 460 x 650 x 250 mm.
- Weight: 525 kg Approx.

F0035

Non-flammable solvent recovery

B0020M

Totally self contained.
It is provided of two tanks: one for the clean solvent and one for the dirty solvent and of a water coolant system which only needs to be connected to a tap.

- 10 litre / hour.
- Dimensions: 320 x 400 x 650 mm.
- Weight: 15 kg.


B0020M

B0020MI

Solvent recovery explosion-proof

B0020MI

For flammable solvents, explosion-proof with ex-protected heating elements.

- Volume approx./ 40 l/h.
- Control panel: 200 x 200 x 430 mm.
- Dimensions: B x T x H : 850 x 770 x 950 mm.
- Power: 3.5 kW.
- Electr. data: 3 Ph + N + PE 50 Hz, 400 V.
- Weight: approx. 80 kg.

Apparatus for washing and drying

F0070

Operates with non-flammable solvents for cleaning bitumen polluted glass flasks, RTFOT-glasses, ring and ball devices, etc.

Characteristics :

- For max. 6 glasses and with cage for small parts.
- Wheels-mounted apparatus.
- Washing tank made of stainless steel.
- Water cooled recovery.
- Recovery unit 1500 W.
- Heated rinsing device for quick driyng.
- Eficient rinsing device for each flange.
- Adjustable preheating of solvent.
- Adjustable driyng time.
- Automatic program control with adjustable rinsing and drying time.
- Connections: Filling 25.4mm, Flow 12.5 mm.
- Power: 1.8 kW.
- Power supply: 50 Hz, 400 V.
- Internal dimension: 400 x 300 mm.
- External dimension: 1000 x 740 x 1130 mm.

F0074

Apparatus for washing and drying large capacity

F0074

Operates with non-flammable solvents, with space for washing including a basket that can accommodate up to 6 plates.

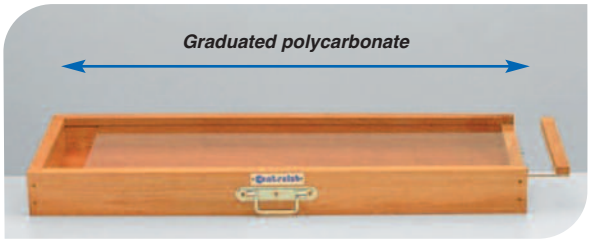
Coated

Dosing box

According to NF P98-276-1

D0628/R03

Used to measure dosing in aggregates of a surface coating.
The apparatus is composed of a sturdy parallelepiped box equipped with a sliding, rigid transparent lid.



D0628/R03

F0389

Abrasion machine for sample Ø 60 mm

According to EN 12274-7

F0389

For 6 test cylinder.
Determination of water sensitifity of thin asphalt sheets and fine aggregates.

- Automatic switchoff, controlled by time or numbers of revolution adjustable temperature from -10 to + 50°C.
- Inside insulation of casing of sound and temperature.
- Adjustable test revolutions from 15 to 30 U/min.
- Cylinder are made of aluminium with lid of stainless steel.

Abrasion machine for sample up to Ø 250 mm

According to EN 12274-7

F0390

For 12 test cylinder.

- Determination of water sensitifity of thin asphalt sheets and fine aggregates.
- Automatic switchoff, controlled by time or numbers of revolution adjustable temperature from -10 to + 50°C.
- Inside insulation of casing of sound and temperature
- Adjustable test revolutions from 15 to 30 U/min

Emulsion storage stability measurement

B0114

Equipment for stability measurement in storage by decantation of emulsions.
Set including:

- A stand.
- A grip.
- A copper tube: Ø 12 mm, L: 30 cm.
- A stainless steel beaker, 500 ml.
- Stabilised 12 V electrical supply and connectors.
- A watch-glass.

B0114

Cohesivimeter

Cohesivimeter

According to ASTM D3910

B0148

Used to determinate solidification time.
Composed of a pneumatic jack pushing a sample and of a torque wrench measuring a torque.
- Weight: 8 kg.

B0148

Planetary abrasivimeter

According to ASTM D3910

B0149

Rupture index

Rupture index of a cationic emulsion

According to EN 13075-1 and EN 13075-2

B0134

Including :
- Hopper with non-adhesive surface.
- 2 enamelled capsules, Ø 200 mm.
- Nickel spatula, 200 mm.
- Weight: 1.5 kg.

B0134

Binder adhesiveness

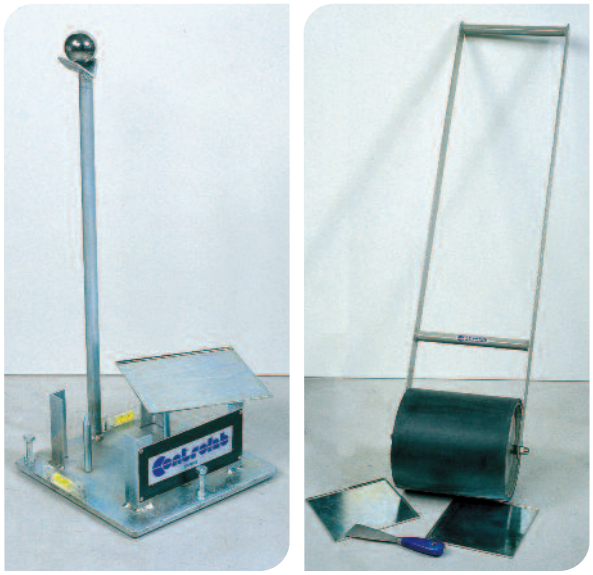
Vialit test

According to EN 12272-3

B0163

Used for determination of :
- Overall adhesiveness.
- Active adhesion between binders and aggregates.
- Wettability temperature.

The apparatus includes :
- 10 soft steel plates.
- 1 steel ball, 512 g.
- Support arm.
- Hoop roll.
- Weight: 40 kg.



B0163

Coated

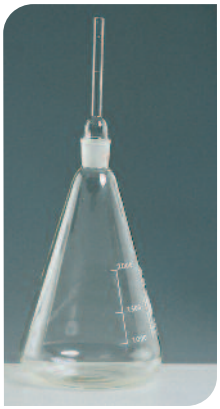
Density

Wide glass pycnometer

For determination of the percentages of binders and aggregates in a coated material.
when the specific weight of the binders, aggregates and solvents is known.
- Wide throat Ø 45/40 mm.
- Capillary tube with marking.

Ref.	Capacity ml
D1041.4	500
D1041.2	1 000
D1041.3	2 000

Wide throat ***D1041.2***



Narrow throat ***D1041***

Narrow glass pycnometer

For determination of the specific weight of a standard type aggregate.
Throat Ø 28/30 mm.

Ref.	Capacity ml
D1040	500
D1041	1 000
D1042	2 000

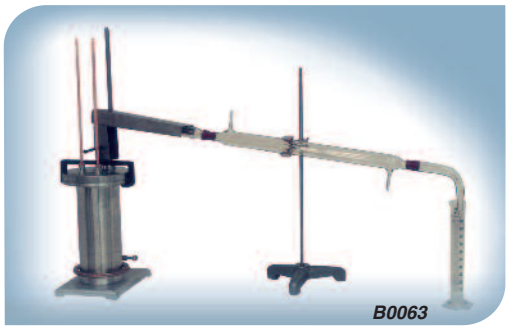
Distillation

Distillation of cut-back asphalts appliance

According to EN 13358 / ASTM D402 / AASHTO T78 / NF T66-003 UNE 7112, 7072

B0069 ***electrical***

The set includes :
- 500-ml distillation tank.
- 250-ml water cooler.
- Glass connection.
- 250-ml cylindrical test tube.
- Residual bitumen recipient.
- Thermometer - 2°C + 400°C.
- Electric heating.
- Elect. supply: 230 V, 50 Hz, 750 W.
- Weight: 12 kg.



Distillation apparatus for emulsions

According to EN 1431 / ASTM D244 / AASHTO T59

B0063

Includes :
- Aluminium still.
- Glass connection tube.
- Water condenser.
- 100-ml test tube.
- Support.
- 2 thermometers: -2 +300°C.
- Bunsen burner with safety.
- Weight: 12 kg.

Water content of emulsions

Dean Stark apparatus for determination of the water content of emulsions

According to EN 1428 / ASTM D95, D244 / IP 74/77

B0075MS

Used to determine the water content in bitumen by forcing by means of a solvent.
Includes :
- 500-ml glass tank.
- 25-ml tube.
- Support with accessories and electric heating.
- Weight: 8 kg.

Ring ball apparatus manual

According to EN 1427, EN 1871 / ASTM D36 / AASHTO T53 / DIN 52011 UNE 7111 / NF T66-008 / BS 2000

B0145.0

For determination of the softening point of bituminous products.

Apparatus with electronic regulators:
- Of temperature.
- Of stirring speed.
- Weight: 3 kg.

Delivered with accessories including:
Pyrex beaker, shouldered ring, 2 balls and 1 thermometer -2 + 80°C.

B0145.0

Ring ball apparatus automatic

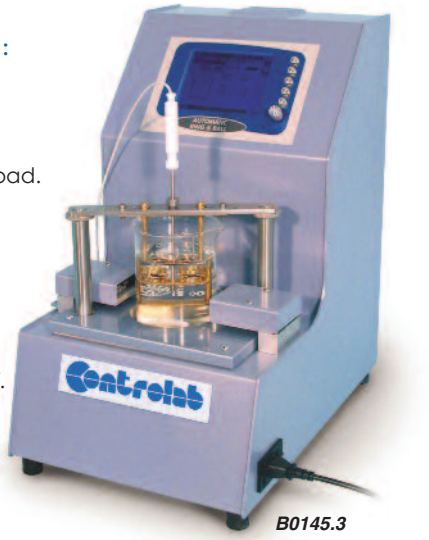
According to EN 1427, EN 1871 / ASTM D36 / AASHTO T53 DIN 52011 / UNE 7111 / NF T66-008 / BS 2000

B0145.3

Strictly in accordance with AFNOR standard, with adaptive PID regulator.
Heating system by halogen lamps and parable of thermal waves reflection.
This system allows a very homogenous bath and maintaining the gradient (5°C./min) as specified by the Standards.
Display Graphic high resolution display, 320 x 240 pixels of real time visualisation of the bath temperature, test progress, round per minute of the stirrer, name, hout.
Two laser sensors detect the balls fall determining the softening point.

2 test parameters can be selected :
- Distilled water: from 30 to 80°C.
- Glycerol: from 80 up to 150°C.

Records all results in its permanent memory, (storing up to 300 tests).
RS 232 port for PC or printer download.
Delivered complete with beaker, manual, ball support, centralizers, ball diameter: 9.5 + -0.05 mm.
Weight: 3.5 + - 0.05 g.
Certificate of compliance with speed temperature rise made before delivery.
- Power: V/1Ph 230 50/60 Hz 700 W.
- Dimensions: 500 x 350 x 550 mm.
- Weight: 20 kg.



B0145.3

F0640

Automatic ring and ball tester for 4 samples

According to EN 1427, EN 1871 / ASTM D36 / AASHTO T53 / DIN 52011 / UNE 7111 / NF T66-008 / BS 2000

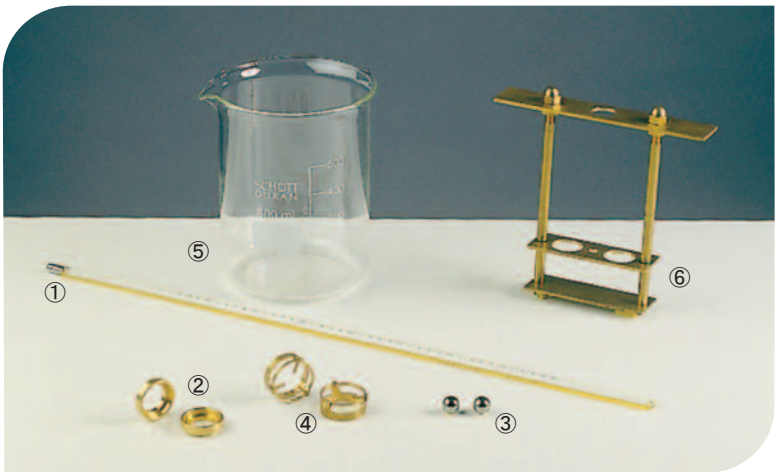
F0640

Compatible with water, glycerole or silicone oil.
New design with ceramic hot plate for a better control of temperature rise and microprocessor controlled system for the valor of the ring ball of plaster.
The values are automatically registered with display of temperature, softening point with averaging and acceeding of accuracy limit.
The continuous temperatue measuring provides a PT100 sensor and display on LCD screen.
Supplied with calibration report.
- Dimensions: 430 x 370 x 350 mm.
- Weight: 29 kg.

Accessories
For all ring ball apparatus

Accessories available individually or in set including: Pyrex beaker, rings with shoulder, 2 balls and 1 thermometer -2 + 80°C.

① D1200/1	Thermometer - 2 + 80 °C
② B0145/1	Ring
③ B0145/2	Ball
④ B0145/3	Guide
⑤ B0145/4	Beaker
⑥ B0145/6	Support
B0072M	The set



Accessories

Bitumen penetrability

Automatic bitumen penetrometer

According to EN 1426 / ASTM D5 / BS 2000 / NF T66-004 / AASHTO T49 UNE 7013 / NLT 124

B0057M

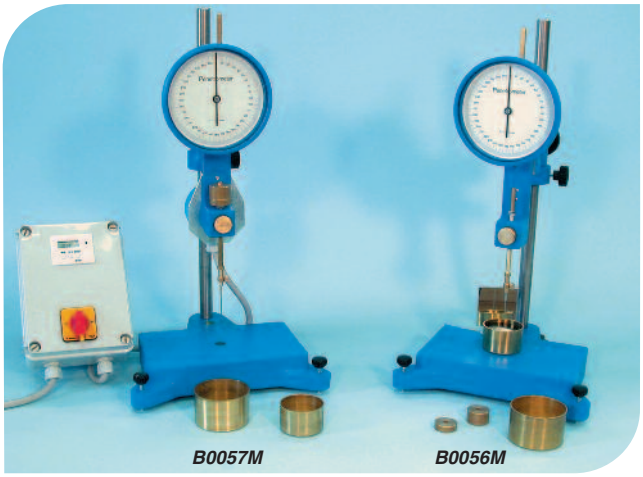
- Automatic reset.
- Micrometric needle falling.
- Control box with automatic triggering and blocking of the needle after 5 s.
- Elect. supply: 220 V, 50 Hz, 200 W.
- Dimensions: 220 x 280 x 410 mm.
- Weight: 15 kg.

Manual bitumen penetrometer

According to EN 1426 / ASTM D5 / BS 2000 / NF T66-004 / AASHTO T49 UNE 7013 / NLT 124

B0056M

- With micrometric needle falling.
- Dimensions: 220 x 170 x 410 mm.
- Weight: 11 kg.



B0057M ***B0056M***

Penetrometers delivered with needles and cups

Digital manual bitumen penetrometer

According to EN 1426 / ASTM D5 / BS 2000 / NF T66-004 AASHTO T49 / UNE 7013 / NLT 124

B0056M/N

Bitumen Penetrometer for the determination of needle penetrability in bituminous products.
Needle drop by micrometer screw.
The digital readout of the penetration values has readings in mm and inch, with 0,01 mm resolution, LCD 5 digits display, with zero set in any position.
Supplied with:

- 1 needle.
- Brass sample cups dia.: 55 x 35 mm.
- Brass sample cups dia.: 70 x 45 mm.
- Set of weights 50 and 100 g penetration needle.
- Dimensions: 220 x 170 x 410 mm.
- Weight: 11 kg.

Digital automatic bitumen penetrometer

According to EN 1426 / ASTM D5 / BS 2000 / NF T66-004 / AASHTO T49 UNE 7013 / NLT 124

B0057M/N

Semi-automatic digital penetrometer with iron-base and adjustable feet.
A magnetic controller device with electronic digital programmable timer that automatically releases the plunger head and ensures free falling of the needle during the 5-seconds test.
The digital readout of the penetration values has readings in mm and inch, with 0,01 mm resolution, LCD 5 digits display, with zero set in any position.

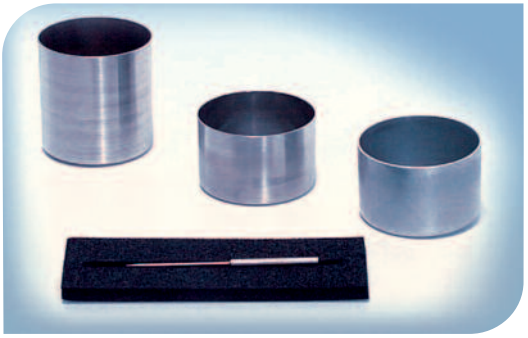
- 1 needle.
- Brass sample cups dia.: 55 x 35 mm.
- Brass sample cups dia.: 70 x 45 mm.
- Set of weights 50 and 100 g penetration needle.
- Dimensions: 220 x 280 x 410 mm.
- Weight: 15 kg.

Penetrometers delivered with needles and cups

B0056M/N ***B0057M/N***

Common accessories for B0056M, B0057M, B0056M/N, B0057M/N.

B0113	***Numbered needle***
B0113*	***Numbered needle with calibration certificate***
S0165/2E	***Alum. disposable cup Ø55 H 35mm***
S0165/2	***Stainless steel cup Ø 55 H 35 mm***
S0165/3	***Stainless steel cup Ø 55 H 57 mm***
S0165/4	***Stainless steel cup Ø 70 H 45 mm***
D1200/6	***Thermometer - 8 + 32°C ± 0,1°C***
D1200/8	***Thermometer + 9 + 27°C ± 0,1°C***



Numbered needle ***B0113***

Automatic penetrometer

F0571

Automatic positioning of the needle and and control system of the water bath temperature for of sample Ø 160mm.
Stepper motor with with automatic detection of needle.
Needle holder on magnetic guide for avoid friction loss.
Temperature control per peltier effect and circulation pump, controlled bya PT100 sensor.
Digital display of temperature.
Calibration report.

F0571

Characteristics :
- Dimensions : 400 x 400 x 760 mm.
- Power supply : 230 V/50Hz, 250 W.
- Weight : 20 kg.

Delivered with the following accessories :
- Special needle holder axis of 97,5 g.
- Ø 160 mm tank.
- 3 penetration needles.

F0149

Thermostatic bath with heater and circulation pump

F0149

Made of stainless steel
Build-in controller and heating elements included supply connection, on high 230 mm, joint ball.
- Temperature control: 0-60°C.
- Power supply: 230V, 50 Hz, 1300 W.
- Weight: 12.5 kg.

Water bath for penetration test

According to EN 1426

B0058M

- Capacity: 10 Litres.

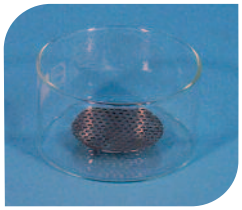
Temperature maintained at + 25°C by electronic thermostat and cooling by network water circulation.
- Dimensions: 375 x 335 x 420 mm.
- Elect. supply: 230 V, 50 Hz, 1050 W.
- Weight: 12 kg.

Transfer tank for tests performed out of water bath

B0058M/1

Stainless steel set with incorporated coil, for connection to the water bath, to maintain test specimen at temperature of 25°C.

B0058M + B0056M + B0058M/1



Glass transfer tank

B0057M/1

Flat bottom with test specimen support.

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

Flash point

Tag opened-cup viscometer flash point

According to ASTM D56 / API 509

B0093M

Suitable for testing volatile flammable flashing in opened-cup. Supplied complete with cup, water bath, thermoregulated heating device, thermometer
ASTM 9C range -5 to +110°C and ASTM 57 C range -20 to +50°C.
Power supply: 230 V 1 ph 50 Hz 600 W.
Dimensions: 200 x 300 x 400 mm approx.
Weight: 6 kg

B0093M

Tag closed-cup viscometer flash point

According to ASTM D1310, D3143

B0092M

Suitable for testing volatile flammable flashing between 0 and 80°C in closed-cup. Supplied complete with cup, water bath, thermoregulated heating device, thermometer.
ASTM 9C range -5 to +110°C and ASTM 57C range -20 to +50°C.
Power supply: 230 V 1 ph 50 Hz 600 W.
Dimensions: 200 x 300 x 400 mm approx.
Weight: 6 kg

B0092M

Pensky-Martens flash point

According to EN 22719 / ASTM D93
AASHTO T73 / IP 34,35 / ISO 2719

B0094M

For visual determination of the flash point between 30°C and 370°C.
- 72-ml measurement flask.
- Electronic regulation of temperature and digital display.
- Delivered complete with thermometer and stirring system.
- Power: 600 W.
- Weight: 8 kg.

B0094M

Breaking point

Bending Beam Rheometer

According to ASTM D6648-01 et AASHTO T313-02.

H1642

The Bending Beam Rheometer performs flexural tests on asphalt binder and similar specimens. These tests, consist of a constant force being applied to a specimen in a chilled fluid bath in order to derive specific rates of deformation at various temperatures.
The complete system consists of a fluid bath base unit, a three-point bend test apparatus, which is easily removed from the base unit for specimen loading and unloading, an external cooling unit with temperature controller and a calibration hardware kit with carrying case.
The unit features an integral, stainless steel load frame and In-line.
Unit includes ASTM/AASHTO-compliant specimen molds and complete calibration kit with carrying case.

Characteristics :
- Load: 0 to 200 g.
- Precision/ test: +-0.5 g.
- Cycle period: depends on the operator load unit capacity: 500 g.
- Sample holder: Ø 25mm spaced of 101.6 mm.
- Use-temperature: ambient at 40°C.
- Supply compressed air: dry and dust air, 340 kPa.
- Weight 115 kg.

H1642

Fraas apparatus for determination of flash point

According to EN 12593

B0077M

This method permits measuring the fragility of a bituminous binder at low temperatures.
Including:
- Flexion apparatus.
- Thermometer - 38°C + 30°C.
- Lever.
- Borosilicate glass tube.
- Accessory exterior base.
- Weight: 7 kg.

B0077M

Engler viscometer

According to ASTM D940,D1665 / AASHTO T54
BS 2000 / NF T66-020

B0120	1 station
B0120/B	2 stations

Used to compare the specific viscosity of road, oils and tars to the viscosity of water.
- Stainless steel construction.
- Electric heating: 300 W.
- Elect. supply: 240 V, 50 Hz.
- Dimensions: 270 x 270 x 550 mm.
- Weight: 12 kg.

Delivered complete with thermostat, stirrer, thermometer 10°C + 55°C, Engler test tube calibrated at 100 - 200 ml and punch.

B0120

Accessories
Engler test tube

B0120/2

Calibrated at 100 - 200 ml.

Thermometer

B0120/4

Additional Punch

B0120/R08

Saybolt viscometer

According to ASTM D88 / AASHTO T72 / UNE 7066,51021

B0087	1 station
B0087/1	2 stations

For determination of the viscosity of petrols. Stainless steel construction.
- Electric heating: 500 W.

Delivered complete with Furoi and Standard orifices, thermostat, stirrer, cooling coil, 60-ml Saybolt flask.
Thermometer to be ordered separately.
- Elect. supply: 230 V, 50 Hz.
- Dimensions: 270 x 270 x 550 mm.
- Weight: 12 kg.

BRTA-REDWOOD-STV viscometer

According to EN 13357, EN 12846 / IP 184
NF T66-005 / BS 2000

B0124	1 station
B0124/D	2 stations

For determination of the pseudo-viscosity of bitumens.
- Stainless steel construction.
- Electric heating 300 W.
- Elect. supply: 240 V, 50 Hz.
- Dimensions: 270 x 270 x 550 mm.
- Weight: 12 kg.

Delivered complete with thermostat, 10-mm orifice (2 mm or 4 mm as option), plug, thermometer 0°C + 44°C.

B0124

Orifice	Cups ref.	Plug ref.
2 mm	B0124/R001	B0124/R001.1
4 mm	B0124/R01	B0124/R011
10 mm	B0124/R02	B0124/R022

Accessories
Thermometer

B0124/1

0 to 45 °C ± 0,2 °C.

Normalised test tube

B0124/R05

Graduation 20 - 25 - 75 ml.

Viscometers

These apparatus are used to identify the grade of a bitumen in order to check its conformity according to a prior calibration.

Brookfield type

According to AASHTO T316 / ASTM D4402
EN 13302

B0129E1

With digital display of the viscosity in pascal seconds.
- Precision ± 2%.
- Field of use: 0 - 100 pascal seconds (or upon request 0 - 20 or 0 - 40 pascal seconds).
- Temperature 50°C to 235°C, 0.1°C increment
- Speed: 750 rpm.
- Supplied with rigid carrying case and cone n°3 (1-10 pascal seconds)
- Output for printer.
- Elect. supply: 230 V - 125 W.
- Weight: 15 kg.

B0129E1

B0129

ICI type

According to BS: 3900 A7 / EN ISO 2484-2

B0129

With analogue measurement.
- Field of use 0 - 40 pascal seconds or, upon request 0 - 10 pascal seconds.
- Temperature: 50°C to 150°C with stabilisation at each 25°C.
- Electric heating 220 V.
- Weight: 15 kg.

Aging test

Thermo Asphalt Drying Ovens (TFOT)

According to EN 12607-2,EN 13303 / ASTM D6,D1754 / AASHTO T47,T179 / BS 2000 NF T66-011 / UNE 7110

B0064M

Used to determine the mass loss of bituminous products free of water, heated in normalised conditions.
Including:
- Stainless steel oven with door equipped with window 100 x 100 mm.
- Temperature control by electronic regulator with digital display.
- Equipped with a turning plate with 9 cups, Ø 55 x 35 mm.

Supplied with thermometer + 155 to +170 °C ± 0.5°C.
- Rotation speed: 5 to 6 rpm.
- Elect. supply: 230 V, 50 Hz, 1 200 W.
- Interior dimensions: 330 x 330 x 330 mm.
- Exterior dimensions: 460 x 450 x 700 mm.
- Weight: 40 kg.

Thermo Asphalt Drying Oven (TFOT)

According to EN 12607-2,EN 13303 / ASTM D6,D1754 / AASHTO T47,T179 / BS 2000 NF T66-011 / UNE 7110

B0065M

Identical to model **B0064M** except:
Equipped with a turning plate with 2 supports, Ø 140 x 9.5 mm.

Rolling thin-film oven test (RTFOT)

According to EN 12607-1

B0068M

Stainless steel oven with door equipped with window, 320 x 215 mm
- Interior dimensions: 405 x 340 x 445 mm.

Temperature maintained at +163°C ± 1°C by electronic regulator with digital display.
Incorporated flowmeter for adjustment of air flow rate at 4 000 ml/minute inside the oven (Plan on compressed air supply).
Supplied with 8 glass flasks, Ø 64 x 140 mm, and a thermometer ASTM 13C.
- Elect. supply: 230 V 50, Hz, 1300 W.
- Exterior dimensions: 620 x 620 x 910 mm.
- Weight: 55 kg.

According to ASTM D2872 / AASHTO T240 / CNR N.54

B0066M

Identical to model **B0066M** except:
- Interior dimensions: 483 x 381 x 445 mm.

Ductility

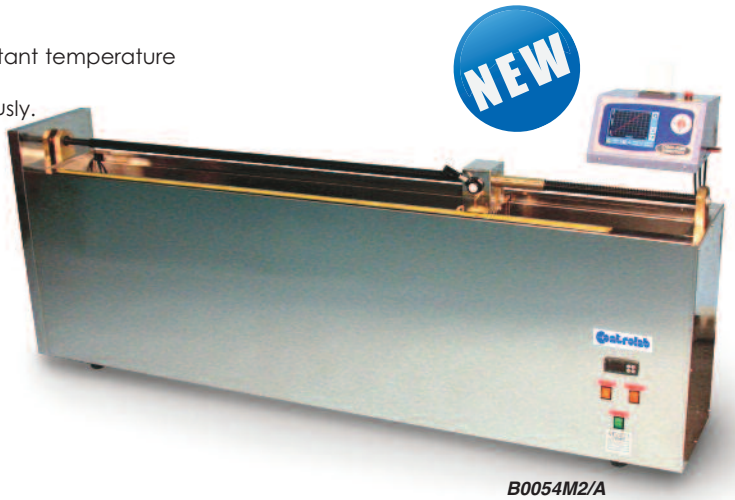
Automatic ductilometer

According to EN 13398, EN 13589 / ASTM D113 / AASHTO T51 / NF T66-006 / NLT 126 / UNE 7093 / BS 4710

B0054M2/A

Used to determine the bituminous ductility, the distance to which a briquette of molten bitumen can be extended under controlled conditions, before its breaking.
The Ductilometer basically consists of a moving carriage driven by an electrical motor, inside a large tank made from stainless steel, with a pump unit.
This model works in an automatic way at a speed of 50 mm/min.

- Temperature: 25°C ± 0,5°C.
- Max. stroke: 1500 mm.
- The ibreglass insulation allow to make test with water in constant temperature at 25°C ± 0,5°C. by a digital thermoregulator.
- The ductilometer can accept up to 3 specimens simultaneously.
- Measuring system by automatic acquisition.
- Supplied with 3 force sensors of 50N capacity.
- Supplied without briquette mould and base plate.
- Power: 1000 W.
- Power supply: 230V 1 ph 50 Hz.
- Dimensions: 2140 x 350 x 400 mm.
- Weight: 95 kg.



B0054M2/A

Accessory
50N calibrated sensor

B0054M/01

Automatic ductilometer high performance

According to EN 13398, EN 13589 / ASTM D113 / AASHTO T51 / NF T66-006 NLT 126 / UNE 7093 / BS 4710

B0054M3

Developed and manufactured for ductility tests and for research purposes.

- Stepper motor providing a variable speed range from 1 to 50 mm/min with digital displacement measuring system.
- One electric high capacity load cell 500 N (possibility to install cells directly by the end user).
- Electronic control system and data acquisition.
- Glass upper cover.
- Supplied without briquette mould.
- Power supply: 230V 1ph 50Hz 1000W.
- Dimensions: 2140 x 400 x 450 mm.
- Weight: 110 kg approx.

B0054M3

Accessories

Mould for test at + 25°C

According to ASTM D113, EN 13398

B0054/1M

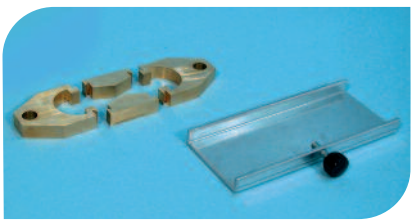
Mould for test at + 5°C

According to EN 13589

B0054/3M

Common moulding plate

B0054/2M



B0054/1M ***B0054/2M***

Compatibility asphalts / aggregates

10 L vacuum pycnometer

According to EN 12697-5, EN 13108 / ASTM D2041 / AASHTO T209,T283

D1043

For measurement of the real density of
a bituminous mixture according to the volumetric method.
Plexiglas appliance supplied with valve
and manometer.

- Dimensions: Ø 300 x 450 mm.
- Weight: 10 kg.

D1043

F0526

Vacuum controller with Degassing valve

F0526

With degassing line for pressure stability.
Output to the vaccum pump and vibrating table
adjustable time for change of pressure and final vacuum.

- Power supply : 230 V, 50 Hz.
- Power: 120 W.

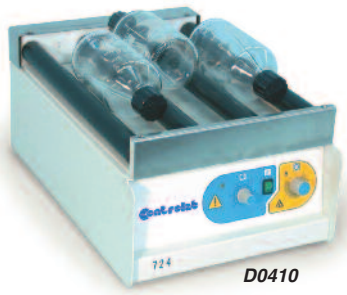
Determination of aggregate-bitumen affinity for 3 bottles

According to EN 12697-11, EN 13108

D0410

Machine for rolling 3 bottles simultaneously.
Adjustable speed up to 85 rpm +/- 10%.

- Elect. supply: 230 V 50 Hz.
- Dimensions: 385 x 295 x 160 mm.
- Weight: 10 kg.



D0410

Accessories

B0044/11	***500 ml bottle***
B0044/12	***Glass rod***

F0532

Determination of aggregate-bitumen affinity for 6 bottles

According to EN 12697-11

F0532

for expelling trapped air of sample.
usable for up to 6 bottles 500, 1000 or 2000 ml
Infinitely adjustable drive range.

- Elect. supply: 230V, 50 Hz.
- Power: 130W.
- Dimensions: 1050 x 340 x 350 mm
- Weight: 69 kg

Indentation test for one sample, model with loading device

According to EN 1871, EN 12697-20 et 21

F0480

Robust steel frame on a rigid base plate.
Frame and loading pin guided by ball- bearing.
Allows to test sample.
The loading is applied without shocks transmission to the loading pin.

- 4 pcs loading weight.
- Mechanical comparator with rotary support.
- Dial gauge 30 mm, accuracy 0,01 mm.
- Total load of 500 N for each measuring point.
- Interchangeable pins.
- Dimensions: 400 x 500 x 900 mm.
- Weight: 111 kg.

F0480

F0483

Indentation test for one sample, model with hydrolic loading device

According to EN 1871, EN 12697-20 et 21

F0483

Double place with hydraulic load input.
Similar to **F0482**, however with hydraulic loading device and fine contol valve for easier loading.

Common accessories

Measuring device with USB connection for indentation test

F0488

Adapter for connection of numeric comparator, digital transducer 30 mm, accuracy 0,01 mm.
software for the determination of penetration test acc. **EN 12697-20/21**.
Two USB cable.

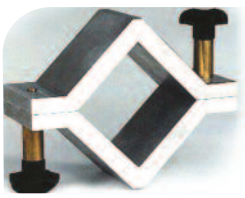
F0488

Mould 69 mm for identation test

F0496

For clamping the samples during the test.

- Weight: 1.4kg.



F0496

Mixers

Laboratory mixers for cement

To prepare large particle size mixtures (15 to 20mm).


B0026/F

20 l and 40 l capacity

More powerful mixer with, as option, a scraper arm specially designed for large grains and difficult mixtures.

Ref.	B0026/D	B0026/F
Capacity (l)	20	40
Electric heating	No	No
Power (W)	1 100	1 500
Weight (kg)	190	210

Accessory
Scraper arm

B0026/D/3	20 l
B0026/F/1	40 l


Scraper arm detail B0026/D

Laboratory mixers

To prepare fine particle size mixtures.

20 l and 40 l capacity

- Planetary rotation movement ensuring homogeneous mixture.
- Variable rotation speed.
- Stainless steel tank.
- Elect. supply: 380 V, three-phase.

Ref.	B0026/B	B0026/1	B0026/C	B0026/5
Capacity (l)	20	20	40	40
Electric heating	No	Yes	No	Yes
Power (W)	560	2 660	1 148	3 248
Weight (kg)	114	114	312	312


B0026/B

Two-rotation mixer for coated materials

According to NF P98250-1 / EN 12697-35

B0026/FB2	25 l tank.
B0026/FB	45 l tank.

Mixers to prepare homogeneous samples of hydrocarbonated products in laboratory.

- Electric heating of the tank to keep samples at 200°C + /- 5°C.
- Mixing by Archimedes screw with planetary rotation.
- Rotation speed adjustable between 32 and 128 rpm for planetary rotation and 105 and 420 rpm for tool rotation.
- Hatch for loading materials during mixing.
- Tank with dismountable wear plate.
- Elect. supply: 400 V - 50 Hz - 6 kW.
- Two capacities: 25-litre tank for 5 to 15 kg of material or 45-litre tank for 15 to 30 kg of material.


B0026/FB2

Indispensable accessory
Tank elevator / tipper

B0026/FB/1

Stability, reactivity, and control of lime spreading

Lime reactivity test

According to EN 459-2

D1095/T

Used to determinate the reactivity of lime with water in liquid phase.
The apparatus includes: a 1-litre Dewar flask Ø 77 mm, with lid for passage of thermometer and mixing blade shaft.

Accessories

Thermometer

D1211.10

-50 to +150 °C/0,1 °C.

Propeller stirrer

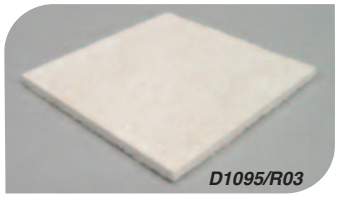
T0052.1/R98

For adjustment at 300 rpm ± 10 with stand and tightening yoke (without blade).

Mixing blade

D1095/R03

Ø 60 mm.



Hydrated calcium silicate plates

According to EN 459-2

D1097

Set of 10 absorbent plates, 100 x 100 x 6 mm.
- Density: ~1 g/cm3.
- Absorption time: ~10 minutes.

Tarpaulin device control of spreading of road surface binders and limes

D0628/R01

PVC coated polyester tarpaulin, 1 m2, with 4 lifting eyes.

Dynamometer

D0628.041

With digital display.
- Span: 50 kg / 50 g.
- Digital readout.
- Zinc-plated hook.

Making test specimens

Soil-cement mould

According to EN 13286-53

To prepare of fine sand or soil test specimens.
It is composed of the following elements:

C0260/1	Mould body Ø 50 mm (for test specimen H 50)
C0260/2	Mould body Ø 50 mm (for test specimen H 100°)
C0260/3	Upper or lower piston (2 per mould)
C0260/4	Set of shims, 25 mm
C0260/5	Set of shims 12,5 mm
C0260/6	Set of shims 6 mm
C0260/7	Unmoulding piston
C0260/8	Unmoulding base (H 55)
C0260/9	Unmoulding base (H 110)

Bichromated treated steel construction

Note :
Also exists in Ø 100 (to order, replace **C0260** by **C0262**).

Treated soil mould

According to NF P 94-100

1/2 hard steel construction including

C0269/1	Countermould, int. Ø 54.3 mm and H 150 mm
C0269/11	Stainless steel case, int. Ø 50 mm
C0269/2	Fabrication piston, Ø 49.8 mm
C0269/5	Set of 1/2 die, Ø 50.2 mm H 12.5 mm
C0269/6	Set of 1/2 die, Ø 50.2 mm H 6 mm
C0269/7	Unmoulding piston
C0269/8	Unmoulding base

Duriez test

Mould for normal Duriez test, Ø 80 mm and dilated 120 mm

According to NF P 98-251-1 to 4

All elements are of bichromated treated steel construction.
The mould bodies have rectified interiors.

Ref.	Normal Ø 80 mm	Dilated Ø 120 mm
Mould body	**B0090/1***	**B0091/1**
Unmoulding base	**B0090/2**	**B0091/2**
Upper or lower base piston (plan on 2 per mould)	**B0090/3**	**B0091/3** ①
Unmoulding piston hollowed out in 3 parts	**B0090/4**	**B0091/4**
Set of shims	**B0090/5**	**B0091/5**

① For cold test, plan on a grooved piston (add the letter **R** to the ref.)

Test specimens conservation

Climate chamber intended for conserving the Duriez test specimens

According to NF P98-251-1 à 4

D1380.2D

Intended for conserving DURIEZ test specimens at + 18°C ± 1 °C and 50% RH ± 1% (homogeneity ± 2%) + 50°C ± 1 °C and 50% RH± 1% (homogeneity ± 0.3°C and 2% RH).

- Volume 600 litres.
- Temperature range: from 10 to 60°C.
- 30% to 90% humidity depending on the operating temperature.
- Inside chamber: 304 grade stainless steel, in continuous weld, thereby ensuring perfect water and steam proofing.
- Processor and LCDS screen regulators with RS232 interface and security code.
- PT1 00 probe lined with unbreakable stainless steel 1/3 DIN B.
- High-precision capacitive probe for regulating hygrometry.
- External dimensions: LxDxH: 740 x 985 x 1980 mm.
- Internal dimensions: LxDxH: 530 X 650 X 1300 mm.
- Shelving dimensions: 600 x 530 mm.
- Power: 2500 W - 11 A.
- Maximum power dissipated in the premises: 1000 W.
- Power supply: 230 V 50Hz.
- Weight: 150 kg.

D1380.2D

Marshall test

Automatic Marshall compactor

According to EN 12697-30

F0241

Usable for samples dia. 100 and 150 mm.
Driven by a three-phase motor and chain operated drop-weight lifting device
The hammer is lifted and released by a special system from 2 sides ensures constant drop.
Cast iron anvil with fixed mould tensioner and hammer lifting device
The opening of system for maintaining the mold causes the automatic haul of the hammer.
The blow count is directly defined on the counter.
Automatic Switch-Off after a reach the preset blow count.

- The apparatus can be calibrate.
- Delivered with 100mm hammer.
- Delivered without set of mould.
- Falling weight: 4550 ± -20g, falling height 460 ± 3 mm.
- Electr. supply: 400 V 3 Ph, 50Hz.
- Power: 0,75 kW.
- Dimension: 610 x 610 x 2250 mm.
- Weight: approx. 280 kg.

F0241

Sound Absorbing cupboard compactor for F0241

F0241/R01

Solid wooden box,
with soundproofing.
Includes a lamp and a switch

- Dimension: 930 x 930 x 2400 mm.
- Weight: approx. 250 kg.

F0241/R01

Marshall automatic compactor

According to EN 12697-10 and EN 12697-30 / BS 598:107

B0039

Rammer: total weight of 4 535 g +/-15 g with foot, including a chamber with spring.
- Falling height: 457 +/- 5 mm.
- Frequency of blows: 55 in 55/60 seconds.

Wood base mounted on concrete base.
Mould held on a soft steel plate with quick fastening system.
Mobile device protected by metal bodywork.
Access by door with electric safety opening.
Separate electric control box with wall fixation with preselection of number of blows.
Supplied without mould.
- Elect. supply: 230 V 50 Hz 750 W.
- Dimensions: 500 x 500 x 1 890 mm.
- Weight: 220 kg.

B0039

Detail of mould fastening system

Measurement system

B0039/11

Electronic measurement system of compressing of the test specimen during compaction test, including a displacement sensor, 50 x 0.1 mm, with fixation system, interface and PC communication software.

B0039/11

Anti-corrosion treated steel Marshall mould for B0039

According to EN 12697-30

B0039/5

Mould body.
- Weight: 1.7 kg.

B0039/6

Cover.
- Weight: 1.5 kg.

B0039/7

Base with handles.
- Weight: 3.1 kg.

B0039/8

Spacer for use with ASTM mould.

B039/5/6/7/8

Batch of 100 paper filter discs

B0030/5M

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

Marshall test

Marshall automatic compactor

According to ASTM D1559, D6926 / NF P98 251-2
CNR N.30 / AASHTO T245

B0033MPT

Rammer, total weight: 4 536 +/-5 g.
Falling height 457 +/-5mm. Wooden base.
Rapid mould fastening system.
Separate electric control box with wall fixation with preselection of number of blows.
Protective screen with electrical safety.
Supplied without mould.

- Elect. supply: 230 V 50 Hz, 750 W.
- Dimensions: 540 x 400 x 1 600 mm.
- Weight: 95 kg.

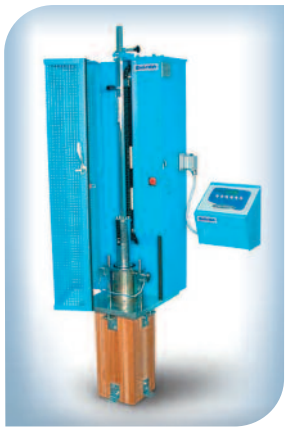
B0033M + B0039/1

Soundproofing case for Marshal automatic compactors

B0039/1

Metal construction with interior lining of soundproofing foam.

- Dimensions: 800 x 800 x 2 000 mm.
- Weight: 150 kg.



B0033MPT

Marshall automatic compactor

B0033M

Similar to model **B0033MPT** except:
Supplied with protective grid.

B0033M

Universal manual extruder

S0114

Engineered for extraction of test specimens having diameters of 4", 6", 100 and 150 mm, as well as Marshal test specimens. Composed of an hydraulic jack, 50 kN, with accessories.

- Dimensions: Ø 300 x 500 mm.
- Weight: 30 kg.

S0114

Rammer support

B0037M

Wooden base

B0036.1M

Marshall rammer with sliding weight

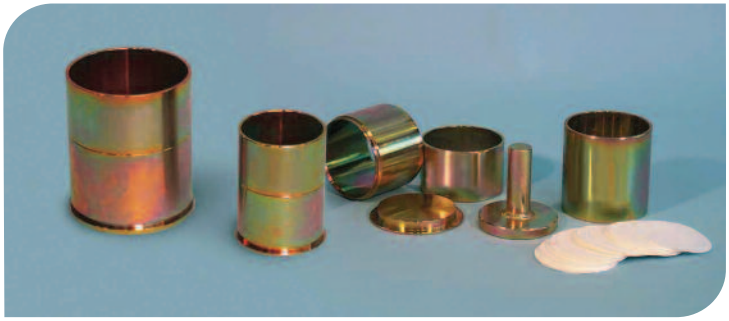
B0034M

Weight : 4.536 kg.

B0037M ***B0034M*** ***B0036.1M***

Anti-corrosion treated steel Marshall mould for B0033M and B0033MPT

Ask for info



Electrohydraulic Marshall Extruder with Marshall compressor specimen

F0235

For extraction of marshall specimen effortlessly
50 kN capacity, cylinder with return spring,
stroke of piston 150 mm, extruding plate and locking ring
for Marshall sample Ø 101,6mm.

- Dimension: 500 x 500 x 1200 mm
- Electr. supply: 3 Ph + N + PE 50Hz 400V,
- Power: 1,8 kW
- Weight: 105 kg

F0235

B0050M

Thermostatic bath

According to EN 12697-34, EN 13108 / ASTM D1559,D5581 / AASHTO T245

B0050M

For conservation of Marshal test specimens at 60 +/-1°C
according to EN or 37.8 +/- 1°C ***according to ASTM***.
Temperature adjustment by analogue thermostat.
Interior tank and cover of stainless steel construction.

- Interior dimensions: 615 x 505 x 150 mm.
- Exterior dimensions: 660 x 540 x 230 mm.
- Elect. supply: 230 V 50 Hz 1 500 W.
- Weight: 18 kg.

B0050ME

Similar to model **B0050M** except:
Temperature adjustment by digital display thermostat.

Stainless steel thermostatic bath with cooling device

According to EN 12697-34, EN 13108 / ASTM D1559,D5581 / AASHTO T245

D1409

For conservation of 12 Marshal test specimens.
Temperature adjustment between
+ 5°C and + 95°C +/- 1°C.

- Interior dimensions: 510 x 350 x 230 mm.
- Exterior dimensions: 680 x 420 x 950 mm.
- Elect. supply: 230 V 50 Hz 2 000 W.
- Weight: 60 kg.

D1409

Marshall test

Manual Marshall test machine, 50 kN

According to EN 12697-34, EN 13108 / ASTM D1559, D6927-06
AASHTO T245 / BS 598:107 / NF P98-251-2

B0042M

Adjustable-height upper cross-piece.
Safety at end of stroke and when maximum load reached.
Supplied with 30 kN proving ring.
Loading speed: 50 +/- 2 2 mm/minute.
Delivered with creep indicator, dial gauge and stability mould with crushing jaws
for Ø 101.6 mm test specimens.
- Elect. supply: 230 V 50 Hz, 750 W.
- Dimensions: 410 x 400 x 1 110 mm.
- Weight: 110 kg.

B0042M

Stability mould

B0046M

Creep indicator

B0047M

Dial gauge, 10 x 0.01 mm

B0047/1M

Automatic Marshall test machine, 50 kN

According to EN 12697-34,12697-23,12697-12, EN 13108 / ASTM D1559, D6927-06
AASHTO T245 / BS 598:107 / NF P98-251-2

B0042MS

Adjustable-height upper cross-piece.
Safety at end of stroke and when maximum load reached.
Load measurement by electronic force cell and detection of creep by electronic displacement sensor, 50 mm.
Loading speed: 50 +/- 2 mm/minute.
Delivered with creep indicator, dial gauge and stability mould with crushing jaws for Ø 101.6 mm test specimens.
Acquisition and display of the load in kN and of the creep in mm on Cyber-plus unit, with possibility of transfer on to PC and printing via RS232.
- Elect. supply : 230 V 50 Hz, 900 W.
- Dimensions: 650 x 400 x 1100 mm.
- Weight: 120 kg.

B0042MS

B0042M/4

Identical to model **B0042M/2** except:
Supplied with two electronic displacement sensors, 10 mm.

Two-speed CBR/Marshall press

S0213S

Multi-speed CBR/Marshall press

S0212

Tensile splitting device

According to EN 12697-23 / ASTM D4123

B0042M/2

Supplied with 2 sets of steel loading strips to measure indirect tensile strength of 101.6 or 152.4 mm cylindrical test specimens.
Anti-corrosion treated metal set.
Equipped with 2 mechanical dial gauges, 10 x 0.01 mm.
- Dimensions: Ø 248 x 270 mm.
- Weight: 14 kg.

Universal testing machines

50 kN Multi-speed universal test machine

S0216

- Maximum capacity: 50 kN.
- Load rate: from 0.01 to 51 mm/minute or from 1 to 15,000 N/sec.
- Piston approach speed: 51 mm/min.
- Piston maximum stroke: 100 mm.
- Built on 2 columns 380 mm apart
- Upper cross-bar adjustable to a maximum of 850 mm.
- Display and co-ordination on integrated unit enabling 5 sensors or a stress cell to be connected.
- Memory up to 100 tests.
- High / low stroke end safety elements
- Supplied without either sensor or accessories.
- Power supply: 230 V 50 Hz 150 W.
- Dimensions: 500 x 450 x 1750 mm.
- Weight: 130 kg.

Accessories Charge cell

S0337/31	2,5 kN
S0337/32	10 kN
S0337/33	25 kN
S0216/01	50 kN

S0216

Softwares :

Ciment compression test

S0217/COMP/CIM

Compression test specimen 40x80

S0217/COMP

CBR test

S0217/CBR

Ciment bending test

S0217/FLEX/CIM

Brazilian test

S0217/BRES

Bending test

S0217/FLEX

Marshall test

S0217/MARSH

C12002-60

60 kN computer-controlled universal traction/compression test machine

C12002-60

60 kN universal electro-mechanic tester for traction/compression testing controlled by computer at constant load rate and moving at a constant speed.

General characteristics:

- Speed range 10 pm to 100 mm/min.
- Working stroke: 150 mm.
- Distance between columns: 460 mm.
- Adjustable upper cross-bar.

The standard machine is delivered with 1 force sensor of 1 00kN, 1 LVDT 20 mm movement sensor with magnetic support, 1 ball-and-socket, 1 PC with printer, 1 special software to carry out the tests and trace the curves at:

- Test at a constant load rate.
- Test at a constant speed.
- Machine delivered with CBR piston.
- Other tools to be ordered separately.
- Power supply: 230V- 50 Hz - mono + earth.
- Dimensions: 710 x 500 x 1 600 mm.
- Weight: 300 Kg.

Home screen of Soils and roads software
For more information on this tool, refer to the software section in the catalogue.

Compression/traction tests

C12004

PC-controlled 250 kN or 350 kN universal traction/compression testing machine Class A

C12004

- Electromechanical.
- Piloting by synchronous engine with variable speed drive.
- Regulation of speed displacement of the crosspiece or of test specimen deformation.
- Speed range from 0.01 to 100 mm/minute.
- Possibility of control in load rate (kN/s) or in displacement speed (mm/minute.
- Jack stroke: 400 m.
- Guiding on ball casings.
- Measurement of force by sensor with electronic gauges or of displacement by induction displacement sensor.
- Distance between columns: 400 mm.
- PC card and specific software for control, acquisition and processing (see page 17).
- Elect. supply: 380 V, three-phase
- Power: 2 000 W.
- Dimensions: 2 100 x 800 x 600 mm.
- Weight: 800 kg.

PC-controlled 200 kN universal testing machine

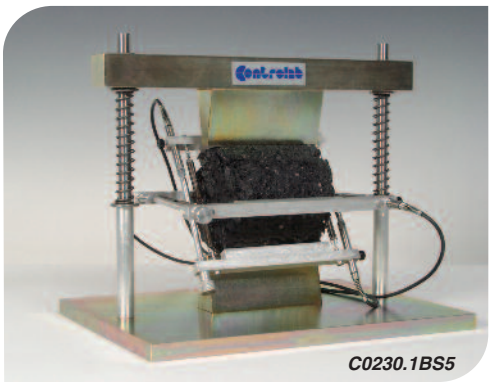
C12004-200

The Multi-Tester is supplied complete with electric load cell 200kN, crosshead displacement transducers, software for Duriez, Marshall, CBR tests, PC with LCD monitor, keyboard, mouse, connection cables, upper and lower compression platens.
Printer and accessories for the specific tests that must be ordered separately (see accessories).

Technical specifications:

- Max. load: 200kN (compression/tensile).
- Max. vertical daylight with compression platens: 700 mm.
- Compression platens diameter: 180 mm.
- Distance between columns: 610 mm.
- Crosshead travel: +/- 200 mm (400 mm total).
- Testing speed range: from 0,01 to 100 mm/min.
- Load rate: from 1 N/s to 5 kN/s.
- Displacement resolution: 0,01mm with accuracy better than 0,2%.
- Machine class: 1.
- Power supply: 230 V 1ph 50 Hz 850 W.
- Dimensions: 1350 x 510 x h 2250 mm.
- Weight : 850 kg approx.

C12004-200



C0230.1BS5

Clamping collar for modulus of elasticity in diametral compression test

According to NF P98-232-3

C0230.1BS5

- For 4 sensors on test specimen Ø 5 H 5 cm.

C0230.1BS10

- For 4 sensors according to new standard for test specimen Ø 10 H 10 cm.

Mechanical test

Slab compactor

According to EN 12697-33

B0563

Slab compacting makes it possible to produce asphalt slabs with properties closest to those recorded on the roads.
The slabs may be compacted to target mix densities by using loads equivalent to those of a compacting appliance.
Even though the main function is to produce slabs for rutting tests, the slabs may be cut into beams or cored to provide the test specimens used in a whole variety of other tests (4 stress points on universal test appliances).

- Segments of steel wheel roller.
- Model for compacting slabs of:
  - 320 x 260 up to 180 mm.
  - 305 x 305 x 25 up to 100 mm.
  - 400 x 305 x 25 up to 100 mm.

The compactor's moulds may be mounted on the rutter so that the compacted slabs may be rutted without being removed from the mould.

- Maximum compacting loads 38 kN (8 bars).
- Electronic control box, colour screen.
- Polycarbonate protection in compliance with the EC Directive.
- Power: 230 V 50/60 Hz 1 ph 550 W.
- Dimensions: 2200 x 1030 x 1880 mm.
- Weight: 1300 kg.

B0563

New generation gyratory compactor

According to EN 12697-10, EN 12697-31 / AASHTO T312 / SHRP M-002

B0530

The gyratory compactor was designed to simulate and reproduce the site's compacting conditions, including the asphalt's characteristics of ease of handling and compactness.
The test data are also of use for the asphalt's volumetric and mechanical characteristics.
Apart from the classic hot-mix asphalts, the appliance can prepare the bitumen emulsions with a mould with perforations adapted to the water discharged during compacting.

B0530

Characteristics: :

- Vertical pressure: adjustable from 90 to 1000 kPa
- Rotation angle: adjustable from 0 to 1.5°, internal or external.
- Rotation speed: 30 ± 0.5 rpm.
- Number of rotations : adjustable from 1 to 999.
- Two operating modes:
  Compacting with a set number of rotations.
  Compacting with a target sample height.
- Data: number of rotations, height of the test specimen, rotation angle and value of the shear stress.
- Data transfer: USB and RS232.
- Unit of measure: IS.
- Internal memory: facility of recording up to 20 tests.
- Dimensions : 1740 x 760 x 650 mm.
- Weight: 227 kg.

Mechanical test

Rutting Test

According to EN 12697-22 / BS 598:110

B0570

This equipment makes it possible to measure the asphalts' resistance to rutting under traffic. A test specimen is subjected a wheel repeatedly running over it under specific conditions of load, speed and temperature.
During this test, the development of the deformation profile is continuously monitored. The rutting machine enables test methods A and B specified in standard EN 12697-22 to be carried out.
Procedure A requires the test to be carried out on six test specimens.
Procedure B: only two slabs have to undergo the test, but the depth of the deformation must be measured over more points along the deformation's lengthwise profile PC – an essential accessory (not supplied)

The machine is comprised of:

- A robust structure in aluminium alloy supporting a thermal chamber.
- A heating wheel and tyre unit repeatedly passing over the test specimen and applying forces of 700 or 520 N to the test specimen.
- A table moving back and forward at a rate of de 230 mm on the linear bearings at a speed of 26.5 rpm.
- A movement sensor to measure the deformation.
- Large double-glazed doors to give easy access and to observe the test.
- Acquisition and data processing software is managed by a micro-processor.
- Multifunction keyboard with encoder for rapid parametering.
- Graphic display 320 x 240 pixels.
- RS 232 port for PC connection.
- Electric power supply: 230 V 50/60 Hz 1 ph 2200 W.
- Dimensions: 1580 x 650 x 1790 mm.
- Weight: 400 kg.

B0570

In-Situ test

Road macrotexture

Apparatus for stain volumetric technique

According to EN 13036-1

B0061

Used to measure the macrotexture depth of the surface of a coating.
Including
- A 25 cm3 calibrated cylinder.
- A cutting-edge disk.

B0061

As option: certificate of verification of the calibrated cylinder

Accessory
Glass balls

According to EN 13036-1

B0061/R031	1 kg
B0061/R032	25 kg

For stain volumetric technique *according to standard EN13036-1*
Alternate normalised sand.
For calibrated balls of which at least 90% of the weight passes through in 0.25 mm sieve and are retained by the one of 0.18 mm. Delivered with certificate of verification.

Density test

T0198

Electromagnetic pavement density meter

T0198

Thanks to a non destructive measurement method that does not use a radioactive source, the apparatus is used to determine the density of a coated material on site. The measurement time (3 seconds) permits a large number of results so decisions can be made rapidly.
Density display in kg/m3 and % of the surface temperature and relative humidity.

Main caracteristics:
- Measurement depth: 25 to 100 mm.
- Max. coated material temperature: 180°C.
- Elect. supply: rechargeable batteries included.
- Autonomy: more than 13 hours.
- Recording capacity: 99 measurements.
- Dimensions: 270 x 270 x 280 mm.
- Weight: 5,5 kg.

Wear resistance test

Surface friction test

According to EN 1097-8, EN 1338, EN 13036-4
ASTM E103

B0190

For determination of the roughness of a surface (*according to P 18-578*) and of the accelerated polishing coefficient of fine gravels (*according to EN 1097-8*) with optional accessories.
The basic equipment includes:
- The pendulum.
- A measurement ruler.
- Tool and thermometer -10°C +110°C.
- Transport carrying case: 730 x 730 x 330 mm.
- Weight: 32 kg.

B0190

Accessories

Metal base with vise

According to EN 1097-8

B0190/4

Set of 2 "roughness" shoes

According to EN 13036-4

B0190/1

- Dim. : 76,20 x 25,4 x 6,3 mm.

Set of 2 "CPA" shoes

According to EN 1097-8

B0190/2

- Dim. : 31,75 x 25,4 x 6,35 mm.

In-Situ test

Work site drainometer

According to NF P98–254-3

S0257

To measure properties linked to the permeability of materials in bitumen mixtures. The test consists in determining the percolation rate by measuring the mean flow time of a determined quantity of water, with low variable head, through a specified measurement surface.
The apparatus is composed of:
- 1 work site permeameter.
- 1 electronic package with digital time display.
- 1 hydraulic system with hand pump and 2 jacks.
- Weight: 20kg

Work site drainometer

According to EN 12697-40

S0258

S0257

S0223*

Benkelman beam

According to NF P98-200-2

S0223*

Particularly intended for measurement of deflection on roadways.
Composed of 2 light alloy parts, 3 adjustable stabilisation feet and 1 level.
- Distance between end of measurement and rotation axis: 240 cm.
- Distance between rotation axis and comparator: 120 cm
- Measurement by digital comparator **MT575113** supplied.

Delivered in transport carrying case.
- Dimensions: 2120 x 300 x 420 mm.
- Weight: 42 kg.

Other version Benkelman beam

S0223

With mechanical comparator **MT2050E** supplied.

Sampling of test specimens

C0320.2

Portable core cutter with gasoline motor

According to EN 12697-27

C0320.2

Particularly suitable for road samples.
- Maximum core diameter 200 mm, depth 550 mm.
- The core cutter head moves vertically with great precision by means of a rack on lapped shaft.
- Two stroke gasoline motor, 5 hp, Briggs and Stratton.
- Core cutter head supplied in water.
- Dimensions: 800 x 580 x 1 230 mm.
- Weight: 135 kg.

Diamond rings

And expansion fixation couplings (supplied separately).

Accessories
Diamond rings for bitumens

Ref.	C0340/5	C0340/6	C0340/7	C0340/8	C0340/9
Interior Ø mm	50	75	100	152	200
Exterior Ø mm	57	83	108	160	210
Length mm	500	500	500	500	500
Coupling	**C0343/0**	**C0343/1**	**C0343/2**	**C0343/4**	**C0343/5**

Roads auscultations

CONTROLAB, together with its exclusive partner ROMDAS (one of the best experts in the field of auscultating roads), has developed a full range of systems for acquiring road auscultation data.

This is innovative and high-technology modular equipment, designed to be installed on any type of vehicle, which particularly enables the investment to be limited.

They offer substantial flexibility by enabling users to select the modules appropriate to their specific needs for collecting data.

More than 200 units are already in use in more than 60 countries.
The data can be exported to the majority of road management systems (including HDM-4).

The main applications of our systems are:

- Measurement of deflection (by falling weight deflectometer - FWD or HFWD).
- Measurement of longitudinal friction coefficient.
- Measurement of the universe - surveys roughness (by laser profilometer or bump integrator).
- Records of surface texture.
- Cross Sections / records rutting (by ultrasound or laser system).
- Records of laser damage (automated system), video, or manual (keyboard).
- Geo-location by GPS / GNSS or odometer (linear data).
- Surveys and 3D modeling of pavement surface.
- Detections automated cracks.
- Travel time and congestion surveys.
- Inventory and asset surveys.
- Recording locations with digital photographs.

Falling weight deflectometer- FWD / HFWD

R0201

The falling weight deflectometer (FWD / HFWD) is a non-destructive test apparatus designed to simulate the passage of a truck with the aid of an impact on a disk in contact with the ground, and simultaneously measuring the deflections generated on the tested surface.

These measurements are used to calculate the bearing capacity of a platform or leveled, modules elasticities of each layer of the pavement structure, and their residual life, and then calculate the thickness of the layers reinforcement.

- Number of deflection sensor: from 7 to 23.
- Sensor head: Ultrasound precision.
- Repeatability: less than 1%.
- Dimensions: 3900 x 1700 x 1400 mm.
- Power supply: 12 V DC.
- Total weight: 450 kg.

The lengthwise Laser Profilometer

R0202

The Laser Profilometer is a Class I inertial profiler. It uses a laser and accelerometer combinaOon to measure the longitudinal elevation profile of the road with very high degrees of accuracy at highway speeds.
The profile is analysed to calculate the InternaOonal Roughness Index (IRI) in m/km.

- Laser Class Class 3B.
- Laser speed:16kHz.
- Wavelength 780nm.
- Power Output: 80 mW (max).
- Interface :10 BaseT.
- Ethernet: RS232 Analogue.
- Resolution: +- 0.025 mm or 0.01% of full scale.
- Resolution IRI: +/- 0.01 m/km.
- Noise: 0.05 mm RMS.
- Environment: IP65 (MEMA4).
- Power: 12V DC 1.2A nominal, 4A peak.
- Dimensions: 355 mm x 240 mm x 140 mm.
- Weight: 6 kg.

R0202

R0203

Bump integrator

R0203

This is a mechanical instrument that measures the releave displacement of a vehicle's suspension in relation to the body of the vehicle.
The BI readings are used to analyze the linear profile and calculate the 'roughness' of a road's surface.
Depending upon the type of vehicle that the BI will be otted to either one or two BI's may be used.
The Bump Integrator excels in rough, unpaved or wet condiOons where laser based profiling equipment is unusable and thanks to its low minimum speed (10km/h) it can also be operated areas of high congesOon unlike accelerometer based equipment.

- Encoder resolution: 850 pulse per revolution.
- Vertical resolution: 1 pulse per 0.25 mm of suspension up movement.
- BI wire breaking strain: 95 kg.
- Weight: 2.5 kg.

Transverse Profile Logger

R0204

The TPL is used to measure the transverse profile (across the lane) of a pavement surface using 24 high quality Ultrasonic sensors.
The straight edge length is user definable between 1.0 to 3.0 m in 12.5 m increments.
There is a 2.2 m main section and two 'wings' which extend beyond the main section (0.6m).
The transverse profile data is analysed to determine the rut depth under the straight edge for both the left and right wheel paths.

- Scan Rate 100 Hz.
- Number of Sensors: 24.
- Sensor Spacing: 125 mm.
- Sensor Resolution: ± 0.2 mm.
- File Format: Post Processed Microsoft Access MDB File.
- PC Connection: Ethernet.
- Environment: IP68.
- Dimensions: 2.2 m (2.8 m with wings extended).
- Weight: 25 Kg.

R0204

Metals / Wood

Table of contents

Universal hardness tester

Universal hardness tester for laboratory

According to EN ISO 6506, 6507, 6508 / ISO 4545, 4546 / ASTM E92, E10

Ask for info

- Testing Rockwell, superficial rockwell, Brinell, Vickers, Knoop.
- Depth measuring testing: Brinell, Vickers and Bille.
- Digital display of the hardness and track on 15" high definition touch screen.
- Motorized optical zoom (x0.7 to x1000 magnification).
- 5 Megapixels high resolution camera.
- Automatic reading of the track by image analisis or manual.
- Test loads from 0.5 t 250 kg, 3 to 750 kg or 10 to 3000 kg aplication of loads by strengh cells.
- 6 position motorized turret (3 indentors, 3 objectives).
- Manual or motorized X-Y table.
- LED illumination or LED ringlight.
- Maximum Testing height: 450mm.
- Maximum testing depth: 220mm.
- Included stat: 1000 Valors on memory.
- Data recovery by USB2 ort COM.
- Dimensions: 1400 x 420 x 640 mm.
- Weight: 242 kg.

Universal hardness tester for control in production

According to EN ISO 6506, 6507, 6508 / ISO 4545, 4546 / ASTM E92, E10

Ask for info

- Testing method Rockwell, superficial rockwell, Brinell, Vickers, Knoop.
- Test loads from 1kg to 250 kg, 3 kg to 750 kg, 5 kg to 3000 kg.
- Manual LCD display of track via camera and LCD 5MG screen.
- Autofocus calcul and digital display of hardness LED light and color display.
- 1 objective for all the test.
- Optical zoom adjustable on 10 positions, about 1:6,5 magnifications.
- Test force application on Closed loop controlled load motor.
- 200 configurables program.
- Test height: 320/560/700/800mm (as the option).
- Dial tchickness gauge depth: 250 mm.
- Accessories: plate anvil and V anvil, Manual or motorized X-Y table.
- Possibility to control with PC+Software.
- Weight: 220 to 450 kg.

Brinell

Brinell hardness tester

According to EN ISO 6506

Ask for info

- 30 kg to 3000 kg load range.
- Brinell tests (balls of 1, 2.5, 5 and 10 mm).
- Load by cell force application, precision < 1%.
- Automatic test procedure.
- Scanning by microscope or by camera
- Automatic scanning possible.
- Digital enlargement x10, x25, x100.
- Loads selected and the hardness value displayed on an LCD screen.
- Conversion to other scales.
- Resolution 0.1 HB.
- Application time adjusted from 1 to 99 secs.
- Statistics.
- RS232, USB outputs, data exported in csv or Excel.
- Motorised advance screw
- Power supply: 220 V / 1 single-phase.
- Test height: 220 mm (450 mm as an option).
- Gooseneck depth: 135 mm (250 mm as an option).
- Weight: 130 kg.

Hardness and micro-hardness

Rockwell

Machine de dureté Rockwell

According to EN ISO 6508

Ask for info

Machine enabling Rockwell tests to be carried out, both in the laboratory and during production.

- Rockwell and Rockwell superficial tests.
- Preload application: Manual with LED indicator.
- Main load application: automatic by motor.
- Conversion to other hardness scales.
- Rockwell scales: B,C,D,A,G,F,K,E,H,P,M,L,V,S,R.
- Preloads: 3,10 Kg.
- Loads: 15, 30, 45, 60, 100, 150 Kg.
- Choice of loads: by rotary selector.
- Load application time: Adjustable from 1 to 9 secs.
- Tests on plastics: possible.
- Maximum test height: 155 mm (260 mm in XL version).
- Gooseneck depth: 155 mm.
- Data retrieval via RS 232 C port.
- Power supply: 220 V 50 Hz single-phase.
- Machine dimensions: 190 x 443 x 675 mm.
- Weight: Approximately 75 Kg.

Vickers

Micro / Macro Vickers hardness tester

According to EN ISO 6507-2

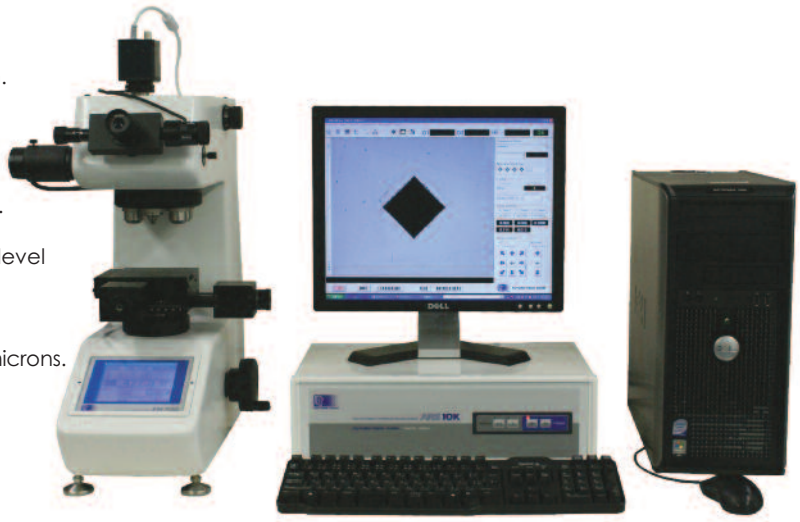
Ask for info

Application of the load by dead weight.
Scanning by microscope and digital counter. The results are displayed directly on the control panel.

- Process: Vickers (Knoop as an option).
- Loads: Micro Vickers: from 1 g to 2 kg,
  Macro Vickers from 300 g to 50 kg.
- Choice of loads: by rotary selector.
- Load application: automatic by motor.
- Load application speed: 60 m/s / 120 m/s.
- Load application time: Adjustable from 5 to 99 secs.
- Turret up to 6 positions: 2 penetrators 4 lens.
- Turret rotation: Manual or Motorised.
- Penetrator positioning: Manual or Motorised.
- Maximum test height: 95 mm / 210 mm.
- Gooseneck depth: 115 mm / 165 mm.
- Table X/Y 100 x 100 mm movement 25 x 25 mm or flat anvil.
- Power supply: 220 V 50 Hz single-phase.
- Machine dimensions: 186 x 450 x 504 mm / 215 x 517 x 690 mm.
- Weight: Approximately 40 kg / 55 kg.

Vickers / Knoop automatic indent measuring systems

Ask for info



- USB 1.3 Mpx camera.
- Motorised table X/Y 110 x 110 mm movement 50 x 50 mm.
- Control box.
- Software for the automatic scanned measurement.
- Memorisation of the specimen profiles.
- Programming the hardness relations: vertical, horizontal, random, according to angle, along the edge and matrix.
- Up to 60 simultaneous relations.
- Automatic measuring method by image processing and level of contract (0.3 sec / indentation).
- Repeatability of the values: +/- 0.5%.
- Manual measurement: measuring crosshairs.
- Min diagonal that can be measured by the software: 10 microns.
- HV, HK measuring scales.
- Conversion into other scales.
- Processing results: display of curves, conversion of values, max/min, average values, processing depth.

Leeb

Portable rebound hardness tester

According to ASTM A956 / DIN 50156

D0027.3/G

Ideal for all metals and perfectly suitable for on-site controls for large and heavy specimens.
Practical for places difficult to access or confined control sites
Easy and rapid to use.
Display of the hardness on large backlit screen according to all scales (HL, HV, HB, HRC, HRB, HS, Rm).

- Precision +/- 4HL (Leeb hardness).
- Maximum hardness: 72 HRC.
- LCD screen.
- Memory up to 100,000 values.
- Data transferred to PC by USB, Ethernet COM port.
- Equolink software for data studies and updating.
- Autonomy of 10 hours.
- Dimensions: 170 x 200 x 45 mm.
- Weight: 900g.


D0027.3/G

Rockwell


D0027ST

Portable hardness tester by micro-indentation

According to ISO 18265 / ASTM B724, ASTM E140 / DIN 50157

D0027ST

Testing method by micro-indentation similar to the Rockwell process.
Measurement of the hardness of thin test specimens (up to 2 mm). µm results and conversion into HV, HB, HRC, HRB, HRA, Mpa, m.

- Accuracy: +/- 1.5 HRC.
- Maximum hardness: 70 HRC.
- Preload: 10 N.
- Load: 50 N.
- Tests possible in all directions.
- Standard magnetic foot.
- Holding clamp for small specimens and round specimens.
- All types of anvils.
- Dimensions: 170 x 200 x 45 mm.
- Weight: 900 g.

Shore

Shore analog hardness tester

According to NF EN ISO 868 / DIN 53505 / ASTM D 2240

NT1016	**Shore A**
NT1017	**Shore D**

- Test method available: Shore A and Shore D.
- Materials: (hard rubber, hard synthetic materials, thermoplastics, densified wood).
- Measuring extent: 0-100.

Digital Shore hardness tester

According to NF EN ISO 868 / DIN 53505 / ASTM D 2240

NT1018	**Shore A**
NT1019	**Shore D**

Test method available: Shore A and Shore D.

- LCD 8 mm display
- Resolution: 0.1 per unit.
- Measuring extent: 0-100.
- RS232 output.
- Power supply: lithium 3V button battery.
- UKAS calibration certification.

NT1019

Metallography

Automatic or manual high-capacity wheel cutters

Ask for info

- Digital display of the cutting parameters.
- Disk max. diameters: 250/300/350/400/500 mm.
- Specimen max section: 85 x 225 mm.
- Specimen maximum diameter: up to 200 mm.
- Fixed or variable rotation (from 1700 to 2800 rpm).
- Adjustable grinding wheel advances by hydro-pneumatic or chopping system.
- LED motor load indication.
- Manual or motorised X-Y table.
- Aluminium cast frame.
- Safety locking.
- 2 lubrication nozzles.
- Cooling fluid circulation system with integrated filtering tray in the cabin.
- Power supply: 380 V three-phase.
- Weight: from 60 kg to 340 kg.

Precision wheel-cutters

Ask for info

Slow speed machines with counterweight or motorised enabling all types of specimens to be cut (metals, ceramics, electronic components).

- Disk diameters: 100/125/150/200 mm.
- Cutting capacity: up to 60 mm.
- Variable speed: from 0 to 5000 rpm.
- Digital micrometer and motorised table as an option.
- Accuracy: 2 microns.
- Lubrication oil pan.
- Motor power : 50 W.
- Power supply: 220 V 50 Hz.
- Dimensions: 420 x 380 x 310 mm.
- Weight: 25 to 45 kg

Automatic hydraulic hot coating presses

Ask for info

For metallography specimens, compact, safe and easy to use.

- Coating machine with a single or double coating chamber.
- Coating machine automatically controlled by microprocessor.
- Temperature control up to 190°C.
- Water cooled (fast or slow).
- Coating pressure up to 300 bars.
- Mould diameter 25 to 50 mm.
- LCD screen 5.7 inches.
- 25 memorisable programs.
- Sound alarm.
- Power supply: 230 V 50 Hz single-phase.
- Dimensions: 360 x 560 x 470 mm.
- Weight: 38 kg

Manual or automatic digital polishers

Ask for info

For pre-polishing and fine polishing your specimens.

- Single or double plate polisher: Ø 200, 250 or 300 mm.
- Fixed or variable plate rotation speed: from 20 to 1200 rpm.
- LCD digital screen display.
- Adjustable spraying device.
- PVC or aluminium plate.
- Protective hoop.
- Integrated automatic lubricator.
- Cast aluminium frame.
- Automatic head with central and individual pressure.
- Automatic head speed: 150 rpm.
- Power supply: 220 V 50 Hz.
- Auto head dimensions: 250 x 430 x 550 mm.
- Dimensions: 420 x 760 x 360 mm.
- Weight: approx. 40 kg / 55 kg

Electro-mechanical drive

Universal single-screw testers

Ask for info

Working equally in traction or in compression, this range covers capacities from 3 to 300 kN.

These particularly robust machines are ideal for all types of repetitive tests at high rates.

Note: The electro-mechanic driven machines may be considered being without maintenance.

Double-column universal testers

Ask for info

Working equally in traction or in compression, this range covers capacities from 5 to 600 kN.

The movable cross-bar, guided by two chrome-plated rectified columns, which provides excellent rigidity, is driven by two lateral ball screws.

A test zone height greater than 1000 mm is available above or below the cross-bar (depending on capacity).

These particularly robust machines are ideal for all types of tests to be easily parametered from the guidance software.

They are delivered equipped with locking electro-magnetic protective screens.

Note: The electro-mechanic driven machines may be considered being without maintenance.

Universal traction / compression / bending machines

Hydraulic drive

Universal hydraulic machines specifically for laboratory use

Ask for info

Working equally in traction or compression, these full and varied ranges cover capacities from 100 to 1200 kN.
Movement is provided by a high-pressure hydraulic generator which also activates the jaws.
The speed of the jack's movement is regulated in a loop by means of a servo valve.
These major inertia machines are perfectly appropriate for testing metal strong section test specimens with high breaking energies such as prismatic tractions, reinforcement bars, etc.

Universal servo- hydraulic machines specifically for use in production control

Ask for info

A 2 or 4 column frame with fixed or movable cross-bar, loads up to 3000 kN.
These machines are particularly suitable in the static domain for all possible tests, when the size of the test specimen and the material resistance require large loads.
They meet the requirements of the steel industry, metal, mechanical, automobile, aeronautical and aerospace constructions.

Dynamic tests

Universal dynamic testing systems

Ask for info

Crossbar that can be moved by an electric or hydraulic jack
with passive clamping, an available grooved table in T. Ideal
for dynamic, fatigue, crack spreading tests, LCF and TMF,
and static, traction, compression, bending tests, on plastics,
aluminium, steel, elastomer components and constituents.
As an option: twist unit for bi-axial twist tests in traction-compression.

Vibrophores

Ask for info

Also called electromagnetic resonators, these appliances are extremely
highperformance tools enabling fatigue tests to be carried out
under the best economic conditions possible (Wöhler curve, etc.)
on all "hard" materials (with a particular resonance frequency).
Through a counterweight system and electromagnets,
this resonance frequency may be adjusted up to 300 Hz).
A tensioning device generates the solicitation stress.
Guidance and data acquisition is carried out on the PC
on which the operating software is installed.
The available capacities range from 50 to 700 kN.

Resilience tests

Charpy and/or Izod pendulum impact testing

Ask for info

These machines are used to determine the materials' rupture energy (resilience).
Completely enclosed to meet the latest, changes in the EC directives,
these machines' safety level is very high.
They are available with capacities ranging from 25 to 750 Joules.
They can be connected to PCs due to latest developments in acquisition
electronics so that both raw values and results can be recorded
and directly processed.
As an option, the hammers may be instrumented
(a force value acquired at the time of impact.

Microscopy

Inverted trinocular microscope

Ask for info

This range of microscopes is ideal for studying metals, and enables surface states to be checked and metals to be analysed in detail.

- Inverted trinocular stereomicroscope.
  (option: addition of a video-camera or still camera).
- Enlargements: 1 00x - 1 000x.
- Lens: 10x/0.25, 25x/0.40. 40x/0.65, 100x/0.25.
- Eye-pieces: WF10x (field ø 16 mm).
- Plate: 200 x 152 mm movement 15 x 15 mm.
- Sharpness: coaxial stroke and end adjustment with a 2-micron graduation per division.
- Lighting: Adjustable halogen 6 V 20 W lamp.
- Protective cover.
- Dimensions: 540 x 195 x 320 mm.
- Weight: 9 kg.

Direct display binocular microscope

Ask for info

This range of microscopes is ideal for studying metals
and enables the surface states to be checked and the metals analysed in detail.

- Direct reading binocular microscope
  (option: addition of a cine-camera or a still camera).
- Enlargements: 6,5x - 45x.
- Lenses: 6,5x - 45x.
- Eye-pieces: WF 10x, pair.
- Sharpness: scaled-down command.
- Lighting ring.
- Protective cover.
- Dimensions: 555 x 170 x 250 mm.
- Weight: 6 kg.

Thermal treatment

Thermal treatment ovens

Ask for info

We have thermal treatment ovens suitable for all types of metals
and materials intended for laboratory use.
Ceramic heating plates with integrated resistances, protected against projections and escaping gas.

- Plates easy to change.
- Highly-resistant hardened vacuum fibrous module.
- Frame in stainless steel plates with a structured surface.
- Double-walled frame for low external temperatures and great stability
- Adjustable air inlet opening in the door.
- Air evacuation in the oven's rear wall.
- Silent electronic relays.
- Controller (programming of access ramp, recommended and time-at temperature).
- Three-phase connection.

Large gooseneck micro meters

Ask for info

Large gooseneck micro meters enabling the thickness of various materials (metal, plastic, rubber, carton, paper, etc.) to be measured, even if they are far from the edge.

The appliance comprises :

- Micrometer with digital or needle comparator.
- Measuring range: 0 to 5 or 0 to 10 or 0 to 20 or 0 to 3 or, 0 to 50 mm.
- Measuring resolution: 0.1 to 0.001 mm.
- Gooseneck depth: 50. 100. 200. 300 or 400 mm.
- Delivered with a set of 2 keys among the following diameters.
- Ø30. Ø20. Ø10 or Ø5.

Wall thickness measuring device

Ref.	For wall types
TT0130	Steel
TT0131	Higher-temperature steel (max 300°C)
TT0132	All materials (resolution 0.1 mm)
TT0133	All materials (resolution 0.01 mm)

Enables parallel metal walls in Steel, Iron, aluminium, Copper, Zinc, Bronze, Titanium and also technical Ceramics, Plastic, Glass, etc. to be measured

The appliance comprises

- A measuring unit with LCD 4-digit digital display.
- 90° standard probe with 5 MHz frequency and 10 mm diameter.
- Measuring range: 1.2 to 225 mm in the steel.
- Measurement on tubes of diameter > 20 mm and thickness > 3 mm.
- Simple calibration at zero on steel block integrated into the keyboard.
- Ultrasound speed: 1000 - 9999 m/s.
- Memorisation of 5 ultrasound speeds.
- Memorisation of the last measurement
- Power supply: 2 AA batteries.
- Autonomy 250 h.
- Temperature of the specimen to be measured: -10 to 60 °C.
- Dimensions: 126 x 68 x 23 mm.
- Weight: 250 g.

Equipment delivered with:

- Small 50-ml bottle of contact gel.
- Case for appliance and accessories.

TT0130

Accessories

7 MHz mini-probe Ø 6 mm

TT0130/R01

Measurement range:
0.75 to 60 mm in the steel.
Measurement on tubes of a diameter > 15 mm and a thickness of > 2 mm.

2.5 MHz mini-probe Ø 14 mm

TT0130/R02

Measurement range:
3 to 100 mm in the steel.

Non-destructive tests

Measuring the thickness of the walls with integrated memory

TT0320

Enables the parallel metal walls in Steel, Iron, Aluminium, Copper, Zinc, Bronze, Titanium and also in Technical Ceramics, Plastic, Glass, etc., to be measured

The appliances comprises:

- Measuring unit with digital display.
- 4-digit LCD display with possibility of rear lighting.
- Resolution as the operator chooses: 0.1 or 0.01 mm.
- Standard probe at 90° of 5MHz frequency, Ø 10 mm.
- Measurement range: 1.2 to 225 mm in the steel.
- Measurement on tubes of diameter > 20 mm and thickness > 3 mm.
- Simple calibration at zero on steel block integrated into the keyboard.
- Ultrasound speed: 1000 - 9999 m/s.
- 5 ultrasound speeds memorised.
- Memory of 500 measurements.
- Possibility of programming limits with beep in the event of overrun.
- Power supply: 2 AA batteries.
- Autonomy 100 hours without backlighting, 60 hours with backlighting.
- Temperature of the specimen to be measured: -10 to 60 °C.
- RS 232 output to export measurements to a printer or a PC.
- Dimensions : 152 x 74 x 35 mm.
- Weight: 370 g.

Equipment delivered with :

- Protective rubber shell for the unit.
- Small 50-ml bottle of contact gel.
- Case for appliance and accessories.

TT0320

Accessory

2 MHz mini-probe Ø 22 mm

TT0320/R01

To measure the cast iron.
Measurment range:
5 to 40 mm in the cast iron.
Measurement on tubes of a diameter of > 15 mm and a thickness of > 2 mm.

Accessories common to the thickness measurers

High-temperature probe

TT0130/R03

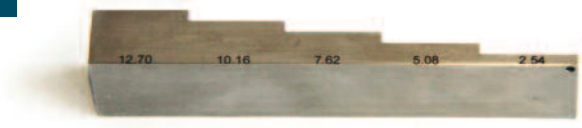
From -10 to 300°C, 5 MHz, Ø 12 mm with insulating sleeve.
Measurement range: 5 to 80 mm in steel.

100-ml bottle of contact gel

TT0130/R04

Gauge blocks in stepped graded steel without or without certificate

TT0130/R05

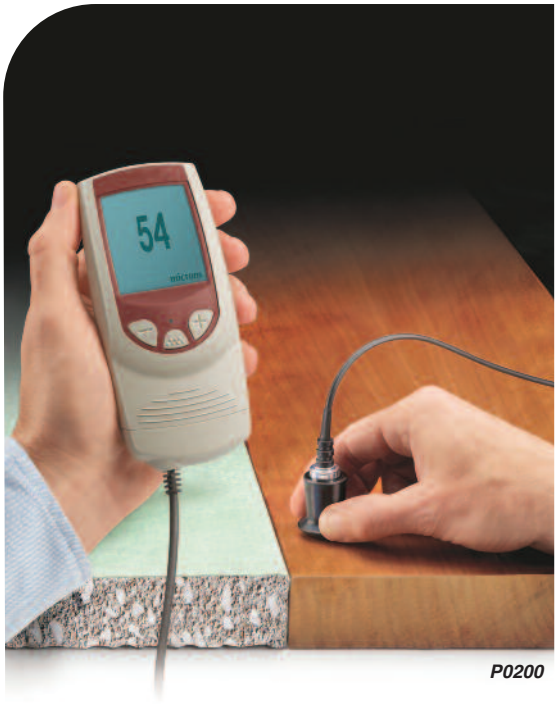


TT0130/R05

Measuring the thickness of the polymer coatings by ultrasound

P0200	***Standard***
P0201	***Advanced***

On composite, metal, wooden and concrete substrates with external probe. The Standard model can measure the total layer and the Advanced model can measure up to 3 layers of coatings.



P0200

The appliance comprises:
- Selected probes not interchangeable:
  - Probe B - Ø 8 mm with a measurement range of: 13 - 1 000 µm and minimum thickness of each layer 13µm.
  - Probe C - Ø 8 mm avec with a measurement range of: 50 - 3800 µm and minimum thickness of each layer 50µm.
- Measuring unit with backlit digital LCD display.
- Precision: ± 2µm ± 3% of the measurement.
- 10,000 in the memory with statistics.
- Power supply: 3 1.5 V type AAA batteries.
- Appliance's dimensions: 146 x 64 x 31 mm.
- Weight: 165 g.

Equipment delivered with:
- Zero bases in steel and aluminium.
- Plastic precision gauges.
- Bottle of contact gel.
- Case for the appliance and probe.

Appliance to measure the thickness of coatings on metal substrates with Type 1500 integrated probe

B0172

Enables coatings to be measured that are:
- Not magnetic (paint, enamel, chromium, zinc, copper, galvanised, nonmagnetic stainless steel, non-magnetic chemical nickel plating, etc.) on ferromagnetic substrates (steel, iron).
- Insulating materials (paint, varnish, enamel, etc.) on non-ferrous metal conductors (aluminium, zinc, brass, copper, special non-magnetic steels, etc.).

The appliance comprises:
- A measuring unit with digital LCD display.
- 5 mm Fe and NFe probes (reversible appliance) - probe at 90° of the unit. Measurement range: 0 to 5 mm on the steel and on non-ferrous metals.
- Resolution: 0.1 µm from 0 to 99.9 µm.
1 µm from 100 to 999 µm and 0.01 mm from 1 to 5 mm.
- Precision: ± 1 µm ± 2% of the measurement.
- Minimum dimensions of the specimen: 20 x 20 mm^2.
- Radius of external / internal curvature: mini 5 mm / mini 30 mm.
- Thickness of the medium: Fe: mini 0.20 mm - NFe: mini 0.05 mm.
- Power supply 19V battery.
- Dimensions: 166 x 64 x 34 mm.
- Weight: 130 g.

B0172

Equipment delivered with:
- Zero bases in steel and aluminium.
- Case for the appliance and accessories.

Type 1500M

B0173

Identical to the **B0172** but with:
- Memory for 3900 measurements with statistics.
- RS232 output to export the measurements to a PC.
- Software and USB linking cable.

Non-destructive tests

Appliance for measuring coatings on metal substrates with an external probe

B8500

Enables coatings to be measured that are:

- Non-magnetic (paint, enamel, chromium, zinc, copper, galvanised, non-magnetic stainless steel, non-magnetic chemical nickel plating, etc.) on ferromagnetic substrates (steels, iron).
- Insulating material (paint, varnish, enamel, etc.) on non-ferrous metal conductors (aluminium, zinc, brass, copper, non-magnetic special steels, etc.).

The appliance comprises:

- Choice of probe:
  - Standard Fe 2 mm probe.
    Measurement range: 0 to 2 mm on steel substrates.
  - Standard NFe 2 mm probe.
    Measurement range: 0 to 2 mm on non-ferrous metals.
  - Combined Fe/NFe 2 mm probe.
    Measurement range: 0 to 2 mm on steel and on non-ferrous metals.
    Resolution: 0.1 Nm from 0 to 99.9 Nm.
    1 Nm from 100 to 999 Nm and 0.01 mm from 1 to 2 or 5 mm (depending on the probe).
- Measuring unit with LCD digital display.
- Precision: ± 1 Nm ± 2% of the measurement.
- Memory for 100 measurements with statistics.
- USB output without cable to export the measurements to a PC.
- Minimum dimensions of the specimen: 20 x 20 mm^2.
- Radius of external / internal curvature: mini 5 mm / mini 30 mm.
- Thickness of the support: Fe: mini 0.20 mm - NFe: mini 0.05 mm.
- Power supply 2 piles AA.
- Dimensions: 124 x 67 x 33 mm.
- Weight: 120 g.

Equipment delivered with:

- 1 m probe cable.
- Zero base in steel and/or aluminium (depending on the probe).
- Case for the appliance and accessories.

B8500

Accessory for B01712-B0173, P0200-P0201, B8500

Gauge block plastic thickness

CP0001

11, 25, 50, 100, 200, 500 µm.

Accessories for P0200-P0201

200 ml bottle of contact gel

CP0002

USB or IR output to export to a PC

CP0003

Accessories for B8500

Fe 5 mm Probe

B8500/R01

Measurement range 0 to 5 mm on the steel.

Software with USB link to the PC without a cable

B8500/R02

Tests on wood

Universal Material Testing Machines for Wood and Timber Tests

Ask for info

We offer a large range of different universal testing machines, which can be configured with electromechanical or servohydraulic testing fixtures with force ratings from 20 to 300 kN or higher. These testing machines can also be used for a wide range of other tests.

Fixtures for Wood and Timber Testing

Ask for info

For the field of wood and timber testing there is a wide range of different fixtures available.
For example:
compression platens, 3- and 4-bending fixtures, indentation hardness, shear, screw pull-out, tensile adhesion and cleavage fixtures according to EN, ASTM, BS and other international standards. The fixtures are designed to directly fix into universal testing machines.

Electromechanical Panel Testing Machines 5500 Nm

According to ASTM D3043

Ask for info

This electromechanical testing machine is used to determine the flexural properties of structural panels 4 x 8 ft tested both parallel and perpendicular to the long dimension of the panel in accordance with ASTM D3043 Method C, Pure Moment test. This method is ideally suited for evaluating effects of knots, knot-holes, areas of sloping grain, and patches for their effect on standard full-size panels.

Pull-Off Testing System 50 kN

Ask for info

This test system is specially designed to test the pull-off force of different types of anchors, nails, pins, screws or other fixing components.
The pull-off tester is equipped with precision load cell and displacement transducer for measuring accuracy class 0.5.

Water analysis

Table of contents

Pocket digital pH-meter

D1850/W1

- Scale 0 - 14 pH (sensitivity 0.1 pH).
- Temperature 0 - 60° C (sensitivity 0. 1 °C).
- Calibration in 1 or 2 points (or automatic at 4-7-10 pH).
- Self-extinguishing.
- Automatic temperature compensation.
- Autonomy: 350 hours.
- Power supply : 4 x 1.5 V.

D1850/W1

D1850/A

Digital portable pH-meter

D1850/A

- Scale: 0 -14 pH.
- Sensitivity: 0.01 pH.
- Temperature : 0 - 60 °C (sensitivity 0. 1 °C).
- Automatic temperature compensation.
- On/off button.
- 2 two bottles of pH4 and 7 buffer solution delivered.
- Autonomy: 100 hours.
- Power supply : 3 x 1,4 V.

Accessories
Calibration kit

5 20-ml sachets.

- pH 7 / pH 10.

D1850/W/R02

- pH 4 / pH 7.

D1850/W/R01

Waterproof digital pH meter with microprocessor

D1853

- Measuring range 0 to 14 pH ± 0.01 pH.
- Indicator of the measurement stability, enabling accurate and reproducible results to µ be obtained.
- Automatic temperature compensation from 0-60°C.
- Automatic calibration by recognition of the 2 buffer series (4.01 – 7.01 - 10.01; 4.01 – 6.86 – 9.18).
- Dimensions: 150 x 80 x 28 mm.
- Weight: 210 g.

Delivered in a case with pH/°C electrode, 1 m cable, 4 x 1.5 V batteries.

D1853

Replacement electrode

D1853/R02

Protective shell

D1853/R01

laboratory pH meter

D1850/L

Nouveau pH meter fitted with a very highperformance microprocessor.

- Measurement range 0 -14 pH ± 0.01 pH.
- Temperature 0-100 °c ± 0. 1°C with automatic correction.
- 5 buffers memorised: 4.01 - 6.86 - 7.01 - 9.18 - 10.01 with automatic recognition system.
- Control keyboard with waterproof keys and screen display in large liquid crystal figures.
- Delivered with a double junction combination glass, for filling, BNC adaptor plug and 1-m cable and temperature probe.
- Power supply: 12 V and adaptor for use on 230 V mains.
- Weight: 1.1 kg.


D1850/L

Accessories
Buffer Solution

D1850/4T	**pH 4**
D1850/7T	**pH 7**
D1850/10T	**pH 10**

- 460 ml.

Combination spare electrode

D1850/L.2

Combination electrode

D1850/L.4

For the emulsions (extremity pointed for easier maintenance).

Water analysis

Portable turbidity meter with microprocessor

D1850/T

Measures the water's turbidity therefore the concentration of undissolved matter.
- Measuring range:
  0 to 50 FTU (NTU) / 50 to 1000 FTU (NTU).
- Precision: ± 0.5 FTU or 0.5% VM.
- Dimension: 220 x 82 x 66 mm.

D1850/T

D1850/C4

Pocket analyser

D1850/C4

Makes it possible to measure:
- pH: 0 à 14 / 0.01 pH.
- Conductivity: 0 to 20 mS/cm / 0.0 1 ms/cm.
- The quantity of dissolved solids (TDS):
  0 to 10 g/L / 0.1 g/L.
- Temperature: 0 to 60°C / 0.1 °C.
- Waterproof unit.
- Power supply by 4 x 1.5 V battery: 100 hours working.
- Weight: 85 g.

Portable digital conductimeter

D1850/C

For measuring conductivity with temperature compensation.
This appliance is particularly recommended to take rapid measurements of conductivity in the field.

Measurement range:
0.0 to 199,9 µ.
0 to 1999 µ.
0 to 19,99 µ.
0 to 199,9 µ.
- Precision ± 1%.
- Manual or automatic compensation from 0 to 50°C.
- Measuring probe: PVC body with steel electrode.
- LCD display.
- Power supply 9 V.
- Waterproof keyboard with sensitive keys.
- Dimensions: 180 x 83 x 40 mm.
- Weight: 370 g with probe.

D1850/C

"Concrete mixing" water analysis case

According to EN 1008

D1866.2

Strong case, designed for intensive use in a difficult environment.
Rubberised coating, aluminium angle with reinforced corners,
high-density foam padding creating places specific to the working elements.
- Dimensions: 475 x 340 x 165 mm.
- Weight: 2 kg.

D1866.2

Drop by drop methods:
- Chlorides.
- ALCALIS: TA and TAC 2 at 60°F.
- Sugars (presence / absence).

Comparator methods:
- Phosphates: 0.7 to 80 mg/l.
- Zinc: 3 to 2 mg/l.
- Nitrates: 0 to 200 mg/l.
- Copper: 0.5 to 5 mg/l.

Methods using semi- transparent colours' colorimetry correspondence card:
- Sulphates test kit: 0 to 200 mg/l.

Methods using strip colorimetry:
- pH.
- Lead 20 to 500 mg/l (scale 20 - 40 - 100 - 200 – 500).

(Possibility of replacing the strips with the D1850/W1) digital pocket pH meter.

Analysis of drinking water

D1866.22

Enables the distribution networks, the water table, etc. to be monitored. Measurement principle: comparison with a reference disk of the water colour with the addition of a reagent tablet. Simple and rapid, the colorimetric method is suitable for measurements in the field and in the laboratory.

Measurement range:
Total chloride: 0.02 to 0.3 mg/L, pH: 0 -14.

Full kit comprising:
- 1 comparator.
- 2 tanks of 40 mm.
- 3 batches of tablets enabling 100 analyses to be made.
- 2 reference colour disks.

Delivered in its transport case.


D1866.22


D1860

5 metres of pH paper

D1860

pH 1 – 11 with plastic distributor and colour code to determine the pH to the closest unit.

Box of 100 strips

D1866.2 / R01

pH 0 –14 paper at ± 1 pH with colour scale.

D1866.2/R01

Tel +33(0)1 49 48 94 50 - Fax +33(0)1 40 11 12 46 - www.controlab.net

Table of contents

Universal testing machines

Universal test stand Didactic

SDB3600/A

Specially designed for teaching.
With the same base unit, by simple change in position of the cylinder and in adding the accessories corresponding to the desired tests, this test stand replaces classical compression, traction, flexion, shear and pull-out machines for construction materials, metals, wood and composites.
An interface permits acquisition and visualisation of curves, in real time, on a compatible PC.
Measurement by electronic pressure sensor.
Jack stroke: 160 mm.

Equiped with 1 or 2 stroke, depends of the type of trial (Force 200 kN in thrust, 150 kN in traction. and/or 50 kN in thrust and 36kN in traction).

Separate control desk with integrated PC.
Standard software: display of measurement of pressure sensor vs. time.
- Elect. supply: 380 V, three-phase+ neutral.
- Power: 1 kW.
- Dimensions: 960 x 1 040 x 140 mm.
- Weight: 80 kg.

SDB3600/A

Training on Universal Testing Lifting Equipment:

Automatic bench 2 jacks (200 kN/50 kN)	SDB3600/A2V
Automatic bench 200 kN	SDB3600/A
Automatic bench 50 kN	SDB3600/AB

Tests that can be carried out with the bench:

- Test on cements

Compression test 4 x 4 x 16	SDB3603/1
Bending test 4 x 4 x 16	SDB3624

- Tests on concrete

Bending test 3 supports	SDB3605/2
Bending test 4 supports	SDB3605/4
Elasticity measuring test	SDB3603/2
Traction test with jaws (max. 5 mm steel)	SDB3610/1
Test on embedded beam	SDB3615/1

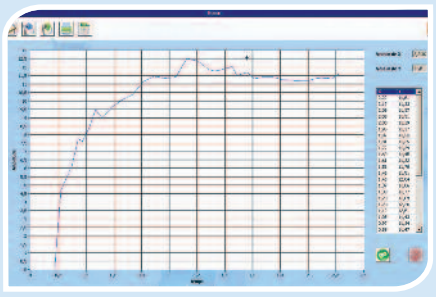
- Tests on wood

Bond test	SDB3602/1
Bending test 4 supports	SDB3605/4B
Shearing test	SDB3606/1
Traction test	SDB3611/1
Pull-out test	SDB3614/1
Shearing test on structure	SDB3608/1

Contact us for other tests

DidacLab bench software

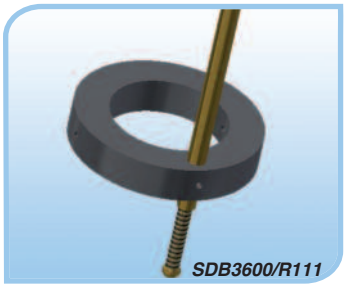
see software pages


A test's overall curve

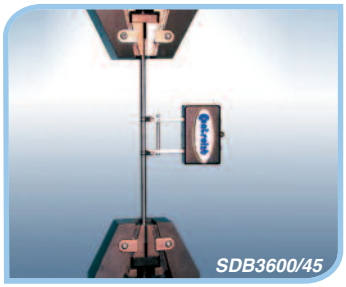
Modernisation of your old machines for automatic data acquisition and processing.

According to your hardware:
- Possibility of adapting software and acquisition system on your old hardware.
- Automation of the data acquisition process.

Accessories :


SDB3600/R111

LVDT sensor and conditioning electronics. Stroke: 10 mm.
Precision lower than 0.5%.


SDB3600/45

Blade-type extensometer with gauge bridge and conditioning electronics.
- Base length: 50 mm.
- Capacity: ± 0.2 mm (A=2%).


SDB3600/44

Sensor with gauge bridge and conditioning electronics.
Capacity: 5 kN.
Precision class: 0.05.

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Universal testing machines

Examples of possible applications :

Test on cement

Test of compression 4 x 4 x 16

Test on cement

Test of flexion 4 x 4 x 16

Test on concrete

Test of flexion in 3 points

Test on concrete

Test of flexion in 4 points

Test on concrete

test of traction with jaws

Test on concrete

Test on embedded beam

Test on wood

Test of flexion in 4 woods points

Test on wood

Tearing test

Test on wood

Shear test on wood

Universal testing machines

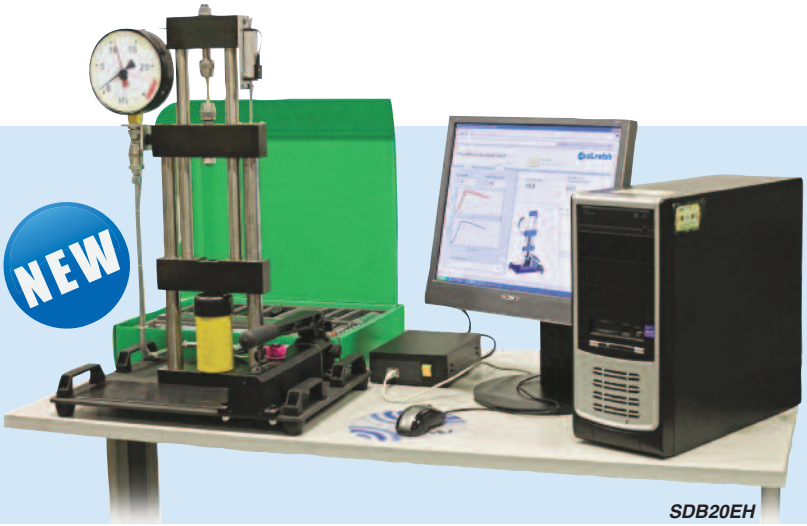
Universal 20 kN universal table for materials tests

SDB20EH

For tests on small test specimens.
Testing machine intended for introduction to tests on materials for teaching.
Manual pump.

Possible tests with this appliance:
- Traction test - DIN 50125.
- Compression test - DIN 50106.
- Shearing test - DIN 50110 et 52186.
- Bending test - DIN 50141.
- HBS Brinell hardness test - EN 10003.
- Deep drawing test - Erichsen.

- They can be carried out with or without a PC.



SDB20EH

Technical characteristics

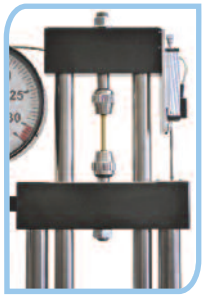
Dimensions	500 x 380 x 705 mm
Weight	48 kg
Max. force test.	20 kN
Piston max stroke	54.0 mm
Force sensor	Pont complet DSM
Dilation sensor	Linear potentiometer 0-50 mm
Gauges	Up to 20
Oil	VG46
Interface	USB2
Software	included
Power supply	None or 230V/50Hz

SDB20EH software screen

Options

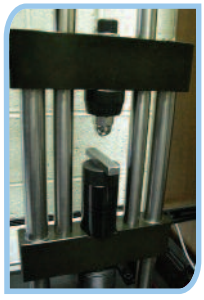
- 30. 50 or 100 kN.
- Mechanical tracer.
- Measuring unit electronic with 2 screens for tests without any PC support.

Accessories included with the SDB20EH :

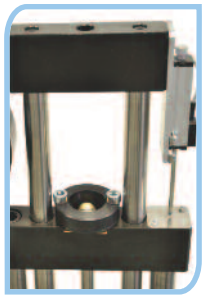

Traction test


Compression test


Shearing test


Brinell Hardness test


Bending test


Drawing test


Unit containing all the accessories (ref : **SDB20EH/R06**)

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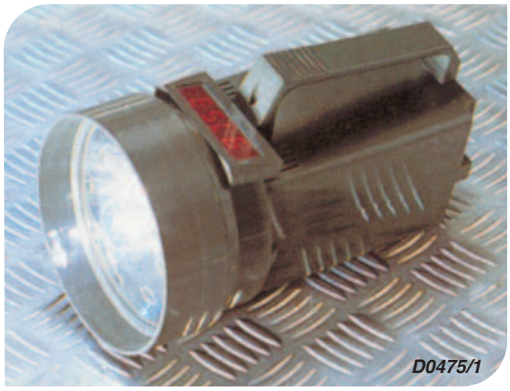
Table of contents

Electronic stroboscope

D0475/1

Observation of moving objects, determination of oscillation frequencies and rotation speeds.


D0475/1

- Display: 10,000 pt (LED), shows the number of revolutions or the number of lightning flashes/min.
- Frequency: 100 to 1,000 lightning flashes/min and 1,000 to 10,000 lightning flashes/min.
- Precision: ± 1 pt de 100 to 5,000 lightning flashes / min ± 0.5 % above that.
- Duration of the lightening flash: 60 to 1,000 µs.
- Angle of the lightening flash: 80°.
- Power supply: 220 V - 50/60 Hz.
- Dimensions: 210 x 120 x 120 mm.
- Weight: 1 kg.

Radiation meter

E0082.2

Appliance for monitoring radiation producing a loud and clear sound signal and when a predefined dose of Gamma or X rays is reached.
Simple and robust with easily read display when the appliance is in a shirt pocket.
Sound signal frequency :
- Background radiation: a signal every 20 - 50 seconds.
- 10 Sv/h (1 mR/h): a sound signal every 20 seconds.
- 1 mSv/h (100 mR/h): a continuous sound signal up to about 60 Sv/h.

Energy level: 45 keV to 1.2 MeV.
Temperature field: -20 to 50°C.
- Dimensions: 152 x 35 x 16 mm.
- Weight: 110 g.

Digital display tachometer combined with and without contact

D3040.5

For linear mesurement in m/mn or rev/min.
- Memorisation of the maxi/mini values.
- Measuring range:
  - By photoreflection of 5 to 100,000 t/mn.
  - By contact : of 0.5 to 20,000 tr/min and of 0.5 to 2,000 tr/min.
- Response < 5 seconds.
- Power supply: 4 1.5 V batteries.
- Autonomy 50 h.
- Dimensions 65 x 38 x 218 mm.
- Weight: 300 g.

Delivered with conical end cap and wheel 10 cm circumference (for linear speed).


D3040.5

Digital sound level meter

According to CEI 651 (class 2) / EN 60651

D3040.3

To check noise.
- LCD display.
- 2 response curves: dBA (noise) and dBC.
- 2 measuring ranges low 35 to 100 dB - high 65 to 130 dB.
- Memorisation maximum sound level.
- 2 integration times: 0.2 s (rapid) and 1.5 s.
- Indication of battery overflow and wear.
- Calibration: internal sinusoidal oscillator 1 kHz - 94 dB.
- Power supply: 9 V battery.
- Analog output: 10 mV/d B.
- Dimensions: 240 x 68 x 25 mm.
- Weight: 215 g.

D3040.3

Manual pocket counter

D1235.3

For counting objects, traffic, etc.
Is held easily in the palm of the hand, four digits with reset to zero.
Adds a unit each time the key is pressed.
A stand may be supplied for table-top use.

D1235.3

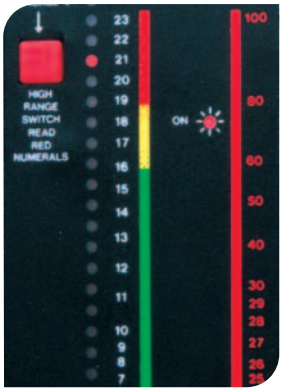
Humidity

Electronic humidity meter with pins

E0045.1

Intended to indicate the relative humidity level in plaster, wood, concrete.
- 2 pins are inserted into the materials.
- The % humidity (between 0 and 100%) is displayed on a scale of light diodes.
- Power supply: 9 V battery.
- Weight: 320 g.

E0045.1



Digital display electronic humidity meter with pins

E0045.4

Intended to indicate the relative humidity level in construction materials and wood.
Similar to model E0045.1 with more precise measurement **with digital display** of humidity level.

- Resolution: 0.1 %.
- Power supply: 9 V battery.
- Weight: 320 g.

E0045.4

Electronic humidity meter with pins on two scales

E0045.5

Measurement of the materials' humidity directly displayed in percentage in relation to an overall mass thanks to the characteristic curves of the construction materials and wood memorised in the appliance.

E0045.5

- Two pins are inserted into the material to be examined.
- Characteristic curves of the construction materials and wood (7 channels).
- Backlit screen, Hold function.
- Self-test function with accessory integrated into the protective cover.
- Incl. 2 AAA batteries, wrist-strap and belt case.
- Measurement of relative ambient humidity dew point.
- Delivered with wrist-strap, belt case, protective cover and batteries.
- Measuring extents:
  - Wood : 6 to 44%.
  - Materials 0.2 to 2%.
- Precision:
  - Wood: ± 1%
  - Materials: ± 0.05%.
- From 5 to 95% RH from 0 to +50°C with precision ± 3% RH and ± 0.5°C to 25°C.

Concrete master humidity meter

E0045.7

Intended to measure humidity in concrete or other materials.

E0045.7

Two possible uses :

- **With a hygrometer**

With RH reading from 0 to 100% either on the surface under a bell, or at depth, thanks to pegs driven into the material.

- **With a conductivimeter**

With humidity rate reading in relation to the material's dry weight. In this case, the pegs and program keys corresponding to the materials' cement dosing should be used. Direct reading of the humidity rate between 3 and 12%.
The appliance is delivered with 10 pegs, 3 program blocks, transport case and accessories.
- Power supply: 9 V battery.
- Weight: 750 g.

Humidity

Surveymaster humidity meter

E0045.8

Intended to measure the relative humidity in concrete, wood or other materials.

Two uses possible :

Resistive method :
2 pins are inserted into holes. The humidity reading is shown on a liquid crystal screen from 0 to 100% ± 0. 1%.

Capacitive method :
The humidity meter case is brought into contact with the material, the humidity is displayed by means of 20 light diodes (green, orange, red) showing the material's level of humidity (dry, danger zone, damp).

E0045.8

- Extruded aluminium casing.
- Power supply: 2 R6 1.5 V batteries.
- Weight: 200 g.

Options

- Long electrodes.
- Movable electrodes.
- Specific electrodes.

Non-destructive electronic humidity meter

E0045.32

Humidity detector for wood and construction materials.

- Gives an instantaneous and non-destructive digital indication of the humidity (in % of water weight compared with the material's dry mass).
- Resolution : 0.1 %.
- Equipped with 10 calibration curves (developed in co-operation with the LPI Institute): softwood, hardwood, cartons, anhydrite screeds, cement screeds, aerated concrete, concrete, hollow bricks and solid bricks.
- Enables a measurement up to 5 cm.
- Hold/min/max function.
- ABS/TPE/metal casing.
- Power supply: 9V battery (supplied).
- Autonomy: 60 hours.
- Dimensions 234 x 70 x 58 mm.
- Weight 260 g.

E0045.32

Aquanostic humidity meter

E0045.9

This appliance enables the humidity rate of a paving, a screen, etc. to be immediately determined, at various depths, without either drilling or preparation, by simple application of the humidity meter to the surface to be tested.

- High-frequency capacitive measurement and digital reading.
- 3 measurement channels:
  - Concrete 0 - 12%.
  - Cement 0 - 15%.
  - Free (enables the appliance to be calibrated according to a known material)
- Precision ± 0.5%.
- Adjustment of the measuring depth between 10 and 40 mm.
- Sound alarm that can be programmed to detect a humidity threshold.
- Weight: 600 g.

Delivered in a case **E0045.9**

Electronic humidity meter
see aggregates pages

Hygrometry / Temperature

Pocket hygrometer for site

D3020.3

- Temperature 0 °C to 50 °C.
- Humidity 25 % à 98 % HR.
- Mini-maxi memory reminder.
- ABS casing – 357 battery.
- Dimensions: 145 x 30 x 24 mm.
- Weight: 65 g.

D3020.3

Digital hydrometer with separate digital probe

D1223.6

Enables rapid hygrometry reading between 10 and 95 % RH. ± 0.1 % and the temperature between 0 and 60 °C ± 0.1 %.

- Response time: 6 to 15 seconds.
- Dimensions: 180 x 83 x 46 mm.

D1223.6

Digital hydrometer with separate probe and dew point calculated

E0045.12

Liquid crystal display.

- Temperature: - 20°C + 80°C.
- Humidity: 5 - 95% RH.
- Precision: ± 2.5% RH, ± 0.3°C.
- Weight: 190 g.

E0045.12

E0045.11

Pocket hygrometer

E0045.11

For rapid and precise measurement of relative hygrometry (RH), the ambient temperature and dew point.

- Liquid crystal display.
- Detachable probe.
- Power supply: 2 LR6 batteries (not supplied).
- Weight: 150 g.

Accessory
Contact temperature probe

E0045.11/R01

Thermometer / hygrometer recorder with fixed external probe

D1224.82

- Programmable rate with a measurement step between 2 s and 24 h.
- Possibility of memorising 1 million values and retrieving them on a PC.
- LCD display.
- Autonomy > 3 years (for a 15-minute measuring rate).
- IP54 protection.
- Port for SD card (not supplied).
- USB cable and software supplied.
- Dimensions: 89 x 53 x 27 mm.
- Weight: 130 g.

D1224.82

Hygrometer

D1224.80

For continuously measuring the humidity, the temperature and the dew point.

- Display: LCD 2 lines
- Storage temperature: -40 ... +70 °C.
- Working temperature: 0 ... +50 °C.
- Type of batteries: 9V battery.
- Autonomy: 1 year.
- Dimensions: 111 x 90 x 40 mm.
- Weight: 168 g.

D1224.80

Ambient thermohygrograph

Enables two diagrams to be recorded simultaneously on a drum recorder.

- Hygrometry from 0 to 100 %.
- Temperature from - 35 to + 45 °C.
- 2 speeds: 1 drum rotation in 1 or 7 days.
- Dimensions: 375 x 290 x 230 mm.
- Weight : 5 kg.

Two models :

Mechanical movement

D3020.1

Quartz movement

D3020.1/Q

- Power supply: 1.5 V battery.

Accessories

Spare sheets

D3020.1/R01

Marker

D3020.1/R02

Delivered with 50 skeets of paper D3020.1

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Weather

Cylindrical rain gauge with direct display

D3000.11

- Capacity 40 mm/m^2.
- ABS.
- Attached to a rod (not included).
- Dimensions: 200 x 125 mm.
- Weight: 160 g.

D3000.11

Rain gauge

D3000.1

Standard rain gauge made up of a zinc bucket with sieve: Ø 226 mm (surface area 400 cm2) and a test tube, graduated in mm of rainfall.

- Weight: 3 kg.

D3000.1

Drum recording rain gauge

D3000.2

Enables atmospheric precipitation to be recorded.
Very robust instrument intended for site use.
The water of captured by a calibrated funnel Ø 1 000 cm2, it is sent into the recorder and passes through the sensor (floating container).

- Scope: unlimited.
- Sensitivity: 0.2 mm.
- Autonomy: 3,000 hours.
- Drum rotation 1 and 7 days.
- Power supply: 1.5 V batteries.
- Weight: approx. 5 kg.

D3000.2

Accessory
Spare sheets

D3000.2/R01 5 u.

Digital air thermohygrometer

D3020.5

With two screens

- 1st interior display shows the temperature from 0 to 50 °C and hygrometry from 25 to 95 % RH.
- 2nd peripheral display linked to a probe and a 3-m cable, shows the temperature at the end of the probe – 50 to + 70 °C at 0.1 °C.

Memory function

- Memorises the mini/maxi temperature at the probe end.
- Uses 2 batteries AA 1.5 V.
- Dimensions: 154 x 80 x 25,5 mm.
- Weight: 140 g.

D3020.5

Electronic digital weather station

D3020.10

- Extra-large backlit screen.
- Multi-display: clock/alarm clock, temperature and humidity on several paths (station and sensor(s), atmospheric pressure, moon cycle, barometric trend and weather forecasts.
- Delivered with a sensor (92 x 60 x 21 mm) and its base.
- Transmission frequency: 433 Hz.
- Power supply: 4 batteries 1.5 V.
- Dimensions: 182 x 133 x 28 mm.
- Weight: 306 g.

D3020.10

Thermo-anemometer

D3040.20

Enables the air flow speed and temperature to be measured.

- Calculation of the flow up to 99,990 m3/h
- Ideal for measurements in a sheath.
- Easily read thanks to the pivoting head.
- Telescopic handle up to 300 mm.
- Probe protective cap, 300 mm long, telescopic handle.
- Storage temperature: -20 ... +70 °C.
- Working temperature: 0 ... +50 °C.
- Type of batteries: 3 AAA mignon batteries .
- Autonomy: approx. 20 h.
- Dimensions: 490 x 37 x 36 mm.
- Weight: 115 g.

D3040.20

Impeller anemometer

D3040.19

Impeller anemometer with air temperature measured (CTN), protective cap, belt case, wrist-strap, batteries and calibration protocol.

- Calculation of the time average.
- Hold /min./max. function
- Calculation of the wind speed (Beaufort scale).
- Backlit screen.
- Storage temperature: -20 ... +70°C.
- Working temperature: -10 ... +50°C.
- Type of batteries: 2 AAA mignon batteries.
- Autonomy: 100 h.
- Dimensions: 133 x 46 x 25 mm.
- Weight: 110 g.

D3040.19

MT543122B

MT3417022

MT3416010

Digital comparator

Output for PC or printer with acquisition software .

Ref.	Stroke mm	Display mm
MT54312B	12	0,01
MT543122A	Identical to the MT543122B but with mini/maxi function	
MT543122B/R02	Interface	
MT543122B/R03	Software	

Support with pneumatic base

MT3417022

For smooth and polished surface. Manual pump enabling the suction pad to be fixed in place.

Support with magnetic base

MT3416010

Suitable for any type of comparator.
- Force of attraction: 80 kg.
- Stem Ø 16 mm.

MT81403

MT2046FE

MT575113

Digital comparator

To order with rear foot add the letter "P" to the ref.

Réf.	Stroke mm	Display mm
MT81401	12	0,01
MT81403	25	0,01
MT81409	50	0,01
MT814035	12	0,001

Comparator with magnetic face

To order with rear foot add the letter "P" to the ref.

Ref.	Ø Face mm	Stroke mm	Display mm
MT2046FE	58	10	0,01
MT2050E	58	25	0,01
MT3058E	77	50	0,01
MT3062E	77	100	0,01
MT211950	58	5	0,001

Digital comparator

MT575113

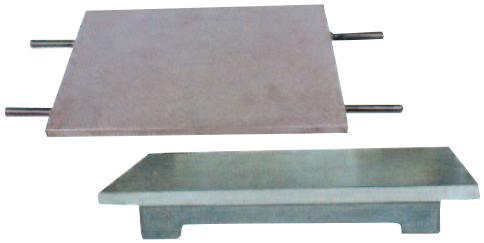
- LCD 4-digit display.
- 25 mm/0.01 stroke.
- Body fastening Ø 8 mm.
- Output to printer or PC.
- Power supply: standard battery.

MT575113/R05	Interface
MT575113/R04	5M cable

Cast-iron bed

C0125/1

Precision 1/50th
Planed, scraped with feet.
- Dimensions: 600 x 400 mm.
- Weight: 50 kg.

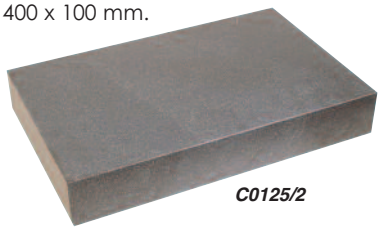


C0125/1

Granite bed

C0125/2

Class 0.
- Dimensions: 600 x 400 x 100 mm.
- Weight: 120 kg.



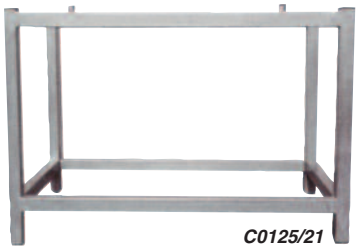
C0125/2

Marble support

C0125/21

Adjustable machine-welded support.
- Dimensions: 630 x 400 mm.

Contact us for other dimensions and precisions

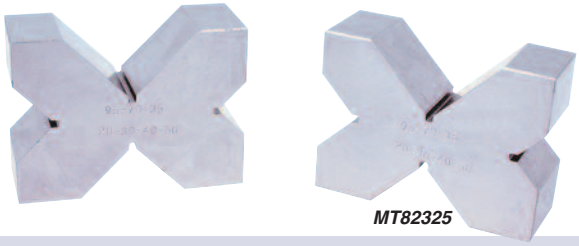


C0125/21

V-blockss

MT82325

Pair of cast-iron V-blocks, 4 rectified notches
- Dimensions: 95 x 70 x 35 mm.



MT82325

Ruler for swells and hollows

According to EN 1340

T0099/2

Intended for checking that footpath borders are straight.
Comprising :
- Ruler with 2 fixed hemispherical supports, 96 cm apart.
- Adjustment screw in the centre.
- Comparator mounted on slider.
- Weight: 1.7 kg.

T0099/2

Gauge block

MT81613

From 1.005 to 100 mm.
47 blocks numbered Class 1.

MT81613

Measuring tapes

MT313023 30 m

MT313025 50 m

- Steel tape covered with polyamide.
- Width 13 mm.
- ABS reinforced handle.
- Zero at the buckle, hook at the end.
- Graduated in mm.
- Two lengths: 30 m and 50 m.

MT313023

Support table for precision comparator

MT814210

Rectangular measuring table in finely ground steel.
- Dimensions: 70 x 70 mm.
- Maximum height: 150 mm.
- Length of the horizontal arm: 95 mm.
- Weight: 3.5 kg.

MT814210

Mechanical sliding caliper square

Mat chromium

Ref.	Cap. mm	L Lip mm	Display mm
MT81101 (1)	150	45	0,02
MT81132 (1)	200	60	0,02
MT81105 (2)	500	90	0,02
MT81110 (2)	1000	125	0,02

Digital caliper square

Mat chromium

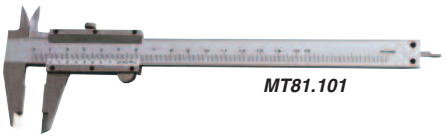
Réf.	Cap. mm	L Lip mm	Display mm
MT81100 (1)	150	40	0,01
MT81120 (1)	200	50	0,01
MT81141 (2)	500	100	0,01
MT81145 (2)	1000	120	0,01

(1) Double lip with gauge. (2) Single lip.

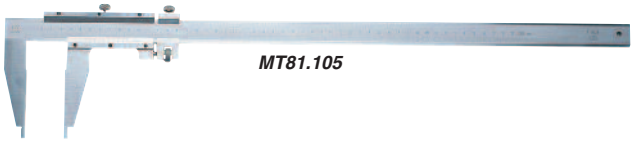
IP65 Caliper square

MT811100

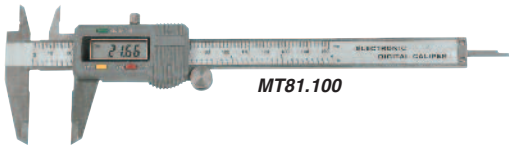
Perfect protection against dust and water splashes
- Capacity: 150 mm.
- Display: 0.0 1 mm.



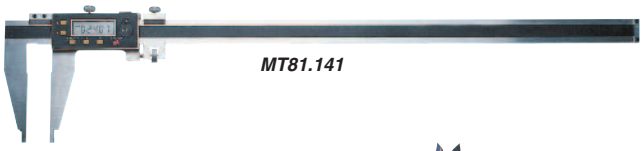
MT81.101



MT81.105



MT81.100



MT81.141

MT811100

MT811265

Mechanical depth gauge

Mat chromium

Réf.	Capacité mm	Lecture mm
MT81530	200	0,02
MT81536	300	0,02
MT81538	500	0,02

Digital depth gauge

Mat chromium

Ref.	Capacity mm	Display mm
MT81550	200	0,01
MT81551	300	0,01

Delivered in a box

MT81530

MT81550

Digital caliper square with giant screen

MT811265

Perfect legibility (x 1.5).
- Capacity: 150 mm.
- Display: 0.01 mm.

All the caliper squares are delivered in a wooden or plastic box.

COFRAC calibration certificate for a caliper square. Contact us.

Mecanical micrometers

MT81241 Jeu de 4

- Carbide key with adjustment gauge.
- Precision 0.01 mm.
- Set of 4 micrometers:

Capacities 0-25, 25-50. 50-75, 75-100 mm.
Delivered in a wooden box.

Digital micrometer

Carbide key with adjustment gauge.
Precision 0.01 mm.
Delivered in a box.

Ref.	Capacity
MT81259	0 - 25
MT81260	25 - 50
MT81261	50 - 75
MT81262	75 - 100

MT81201

MT81241

MT81259

Precision meter 0 - 24 hours

D1235.1

- Up/down counter chronometer with an alarm at cycle end .
- 1 second resolution.
- After the alarm, the time elapsed is displayed.

D1235.1

Quartz down counter 0 - 60 mins

D1235.2

With powerful alarm at cycle end.

- Dimensions: 58 x 58 x 23 mm.
- Weight: 67 g.

D1235.2

Mechanical chronometer

D1230.1 15 min at 1/10 s

D1230.2 30 min at 1/5 s

With metal casing.

- Exists with two functions : 15 min at 1/10 s or 30 min at 1/5.

D1230.3 30 min at 1/5 s

With double metal / ABS protective casing.

- Function 15 min at 1 /10 s.

D1230.1 / D1230.2

Electronic chronometer

D1230.5

Professional type, withstands water splashes.

3 functions: :
Chrono, clock, calendar.

- Dimensions: 80 x 57 x 19 mm.
- Weight: 80 g.

D1230.5

Giant desk-top chronometer

D1230.9

- Display with large liquid crystal figures: 13 mm.
- Counting at 1/100 s up to 10 h.
- SPLIT function (part time) and LAP (display frozen but counting continues).
- Dimensions : 105 x 100 x 45 mm.
- Weight: 200 g.

D1230.9

Electronic table counter

D1230.7

Up / down counter with chronometer + clock.
Two giant adjustable displays:

- 1st display: chronometer from 0 s. to 23 h 59 m 59 s.
- 2nd display: 2 countdowns from 23 h 59 m 59 s to 0 s.
- 2 specific ring tones lasting 1 mm, 2 memories.
- Dimensions: 140 x 95 x 15 mm.

D1230.7

Counter-timer clock

D1230.8

- Down counting from 0 to 24 h at ± 1 s.
- Sound alarm lasting 1 min at the end of counting with time elapsed since the alarm displayed.
- Memory for time programmed.
- Face lighting.
- Large liquid crystal figure display.
- Autonomy: 12 months.
- Weight: 70 g.

D1230.8

Mechanical table counter

D1230.6

- Large size casing.
- Face Ø 110 mm.
- Duration 60 min / 1 s.
- Green push button = start, Red = stop, Black = reset.
- Weight: 200 g.

D1230.6

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Temperature

Thermometer probe with face

With steel stem Ø 8 mm, length 250 mm and display screen Ø 50 mm.

Ref.	Temp. °C	Subdiv. °C
D1210/A	0 + 60	0,5
D1211/A	0 + 100	2
D1213/A	0 + 250	5
D1200/A	- 40 + 40	0,5

D1210/A - D1211/A - D1213/A

Digital display thermometer probe

Particularly suitable for measuring the temperature in fresh concrete.

D1211.10

Model D1211.10

D1211.10

Stainless steel probe Ø 4 mm, L 200 mm.
- Rotating rectangular face.
- Digital display - 50 °C + 300 °C ± 0.5 °C.

Model D1211.1

D1211.1

Stainless steel probe Ø 4 mm, L 120 mm.
- Face Ø 50 mm.
- Digital display: - 50 °C + 150 °C ± 0.1 °C.

D1211.1

High-precision pocket thermometer Check temp type

D1223.34

Temperature: -50°C à +150°C.
- Resolution: 0.1°C.
- Measurement accuracy : +/-0.5°C.
- Fixed probe: 160 mm in stainless steel with a 1- m cable.
- CAL CHECK function to check the internal calibration and the accuracy of the instrument's measurement.
- Battery: 1x1.5V AA.
- Dimensions : 106 x 58 x 19 mm.
- Weight: 80 g.

D1223.34

Digital display thermometer probe - 50 °C + 300 °C

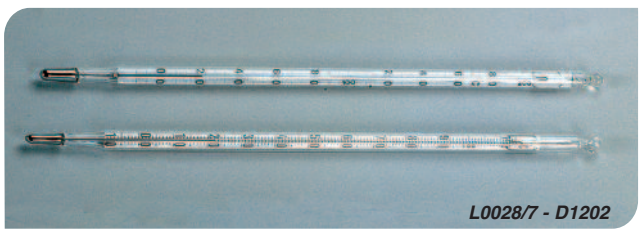
D1223.33

- Resolution: ± 0. 1 °C.
- Memory function.
- Mini maxi alarm: a sound alarm is triggered when the threshold is reached.
- Delivered with steel probe and 1-m cable.
- Dimensions: 107 x 59 x 20 mm.
- Weight: 100 g.

D1223.33

Glass laboratory thermometer

Ref.	Temp. °C	Subdiv. °C	L mm
L0028/7	0 + 50	0,5	300
D1201/1	- 10 + 110	0,5	298
D1200/1	- 2 + 80	0,2	354
D1200/2	+ 30 + 200	0,5	395
D1200	- 10 + 150	1	300
D1202	- 10 + 200	1	245
D1203	0 + 300	1	305
D25918	- 1 + 51	0,1	460



L0028/7 - D1202

LCD thermometer with maxi-mini alarm, - 50 °C à + 300 °C

D0926

Delivered with 25 cm removable stainless steel probe.
- Precision ± 0.1 °C.
- Precision of response time selection: normal 10 s, rapid 1 s.
- Shell, protective casing and waterproof probe included.
- Programmable alarm.
- ABS casing - R03 battery.
- Dimensions: 170 x 70 x 30 mm.
- Weight: 230 g.

D0926

D0925

Universal 1-channel thermometer - 50 °C + 1000 °C

D0925

For connecting to the type K thermocouple (not supplied).
- Resolution: 0.1 °C (-50 à +199 °C) and 1 °C beyond.
- Possibility of connecting a probe with data transmitted by radio (range20 m).
- Acoustic alarm when limits are overrun.
- LCD display with backlit screen .
- Min/Max. values displayed.

HOLD function key.
Data printed on site with printer (as an option).
- Infrared transmission.
- Power supply: 9 V battery .
- Dimensions: 182 x 64 x 40 mm.
- Weight: 171 g.

Accessory: Transparent carrying case

D0925/2

Digital display thermometer - 200 to 1300 °C

D0920

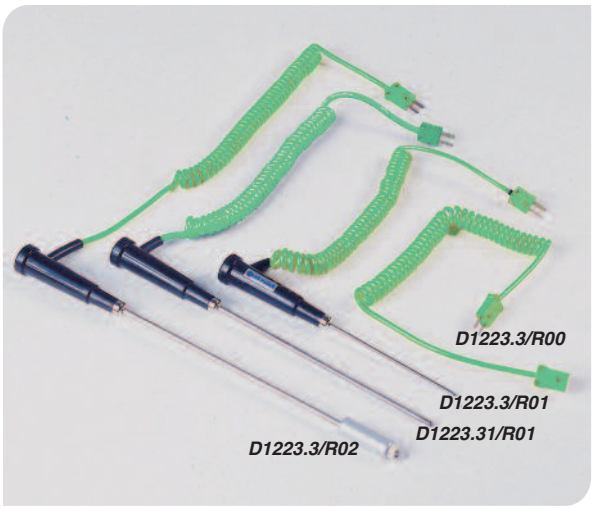
For connecting type K probe.
- Resolution 0.1 °C up to 1 000°C
- LCD display.
- Casting resistant to external aggression and blows.
- Memorisation of min/max value.
- Internal calibration enabling BNM calibration and connection .
- Delivered with protective shell, including small carrying case.
- Weight: 250 g.

D0920

Essential accessories Probe with handle, 1.5 metre twisted cable and connector

Ref.	Length mm	Ø mm
Penetration type :		
D1223.3/R01	122	3
D1223.31/R01	218	5
D1223.31/R03	300	5
D1223.31/R05	1000	6
D1223.31/R06	700	6
Contact type :		
D1223.3/R02	130	8
Coated type :		
D1223.31/R031	300	5

D1223.3/R00	***1 meter extension cord***




D1223.31/R031

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Temperature

Infrared thermometer with visible laser beam

D1223.12

Enables immediate and rapid measurement of a surface temperature.
- Field for use:
  - 50 °C + 400 °C à ± 0.5 °C.
- LCD display.
- Precision 2% of the value measured.
- Adjustment of emissivity.
- "HOLD" function and alarm.
- Response time < 2 sec.
- Delivered with protective case.

D1223.12

Universal infrared thermometer with integrated penetration probe

D1223.121

Same as **D1223.12** without laser scope but with stainless steel probe Ø 2 mm length 50 mm.
- Measuring scope probe side:
  - 50 °C + 230 °C to 0.1 °C.
- Response time: 10 sec.
- Delivered with protective case for the penetration probe.

D1223.121

Thermal imaging camera

D1229

This thermal imaging camera enables defects to be simply and rapidly located. Abnormal heating may be rapidly found and in this way corrected. When the air conditions (temperature and humidity) are entered manually, the camera will automatically display the areas where the dew point is critical, and therefore where mildew forms. The digital camera enables infrared and actual images to be captured for better recognition of the locations.

D1229

- Display: LCD 3.5" 320 x 240 pixels.
- Storage temperature: -30 ... 60 ° C.
- Working temperature: -15 ... 40 ° C.
- Battery: fast recharge, Li-Ion battery can be replaced in the field.
- Resting time: 5 h to 20 ° C.
- Casting material: ABS.
- Type of sensor: Infrared.
- Measuring range: -20 ... +100 ° C. / 0 ... +350 ° C.
- Precision: ± 2 ° C, ± 2% display.
- Dimensions: 152 x 106 x 262 mm.
- Weight: 900 g.

4-channel temperature recorder - 195 + 1000 °C

D1224.8

4 external channels for type K thermocouples type K (not supplied).
Of particular interest for measuring and memorising the temperature of concretes and assessing maturing. On-site measuring started by means of the GO key.
Frequency of the measurements may be programmed from 2 sec. to 24H.
The appliance is programmed and the values transferred to a PC by means of the software supplied which runs under Windows®.
Display of the values of a PC in the form of tables or diagrams.
- Resolution: 0.1 °C.
- Memory capacity: 48,000 values.
- Power supply: Lithium battery with 5 years' autonomy.
- Dimensions: 103 x 64 x 33 mm.
- Weight: 129 g.

Delivered without probe **D1224.8**

Electronic recording thermometer with display

D1224.75

Ideal for monitoring the ambient temperature:
- Temperature range from -30°C to 65°C.
- Measurement rate: from 1 mn to 4 h.
- Memory capacity: 3,900 values.
- Delivered complete with software and transfer box.

D1224.75

Accessories for D1224.8

Sheathed type K thermocouple

D1223.71B

Teflon sheath, maxi length between the recorder and measuring point: 70 metres.

Type K thermocouple

D1223.71

Teflon sheath, maxi length between the recorder and measuring point: 12 metres.

Connector

D1223.72

For thermocouple.

Connector **D1223.72**

Thermocouple K **D1223.71**

Automatic optical level

D7000.1

- Exact and effective.
- Enlargement: 32 times.
- Automatic offsetting.
- Lens opening: 36 mm.
- Precision: ± 0.3"/min.

Delivered complete in a shockproof case.
With aluminium tripod and 4 x 1 sight.

Accessories

Prism

D7002.6

Mini prism

D7002.8

Flat prism with double-sided reflector

D7002.9

Reflective strips

D7002.10

Automatic motorised laser for horizontal or vertical shots

D7020

- Head tilt: 9 °.
- Range: 300 m.
- Precision: Horizontal: ± 0.10 mm/m and vertical: ± 0. 15 mm/m.
- Rotation speed: 200 or 700 rpm.
- Angle point.
- Scanning mode.
- Tilt function.
- Remote control with a 50 m range.
- Power supply: rechargeable NiMh battery pack (autonomy 24 hours).
- IP 54 waterproof casing.
- Delivered complete with case, tripod, sight, rechargeable battery, charger, reception cell and pair of laser viewing scopes.

Fully electric station

D7002

This appliance enables aiming at distant points using a scope and to measure horizontal and vertical angles in grades by means of graduated circles.

LCD on both sides: 8 lines of 20 characters.
- Scope enlarging: x 30.
- Minimum sighting: 1 m.
- Precision on the angles: 2 or 5 ".
- Measurable distance:
  - without reflectiveness : 350 m.
  - with 1 prism : 4,000 m.
  - with 3 prisms : 5,000 m.
- Precision over distances: 2 mm + 2 ppmxD.
- Memory capacity: 30,000 values.
- Transmission port: RS232C, USB, SD card.
- Format of data transmitted: .XLS or .DXF.
- Battery: NiH rechargeable.
- Recharging time: 3.5 h.
- Using time: from 15 to 45 h depending on the method for measuring distances.
- Weight: approx. 6 kg.

Precision surveying by satellite

D7021

This positioning system is a high-precision satellite receiver and a communications unit specially designed for the survey market.
Simple and robust, it includes all the components for field studies and staking out.
·Channel configuration: 136 channels (dual frequency) for simultaneously following all the visible satellites.
- RTK Performances:
  - Horizontal precision: 1 cm + 1 ppm.
  - Vertical precision: 2 cm + 1 ppm.
- Static performances:
  - Horizontal precision: 2 mm + 0.5 ppm.
  - Vertical precision: 5 mm + 0.5 ppm.
- Bluetooth available.
- Waterproof casing: IP67.
- Dimensions: 198 mm x 99 mm.
- Weight: 1,5 kg.

Electronic theodolite

D7000/893

Extremely sturdy with a double digital screen for great simplicity in use. With integrated automatic vertical compensator.
- Precision: 2 or 5 ".
- 42 mm lens.
- Enlargement: 30 times.
- Power supply: 4 AA batteries (autonomy 80 h).

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Topography

Lead-free tracer, without CFC

Does not move, flushes out, empties out completely, dries rapidly.
To mark: concrete, asphalt, wood, gravel, grass, etc.
Delivered in cartons of 12 500-ml bottles of the same colour.

Ref.	Color
D7000/70	White
D7000/71	Yellow
D7000/72	Fluo red
D7000/73	Fluo orange
D7000/74	Fluo blue
D7000/75	Fluo green

Brilliant fluo colours — *D7000/70 à /75*

Delivered with carrying cover

D7000/3/5

Telefix

For internal or external vertical or horizontal measurements. Sliding tape inside the stick. Measurement easily read. Control of verticality and horizontality by means of 2 spirit levels. Elements in position automatically blocked

Ref.	Length	
	Unfolded	Folded
D7000/3	3 m	3 m
D7000/5	5 m	5 m
D7000/8	8 m	8 m

Accessories

Alu tripod

D7000/01

Wooden trip

D7002.1

Alu levelling staff of 4 x 1 m

D7000/10

D7000/01

D7000/10

Gradient level

D7000.05

Run-Mate map measurer

D7000/90

The special shape of the stylus makes it easy to follow the lines and curves.
Possibility of introducing any scale.

- Units of measure: mm, cm, m, km, mile.
- Integrated 8-digit calculator.
- Power supply: 3 x 1.5 V.
- Length: 213 mm.

D7000/90

Lasermeter

D1688

Range: from 5 cm to 60 m.

- Precision: ± 1,5 mm.
- Continuous measurement (tracking function).
- Measurement: Distance / Surface / Volume.
- Casing IP 54.
- Supplies with batteries, cover and wriststrap.
- Dimensions: 124 x 54 x 31 mm.
- Weight: 155 g.

D1688

Odometer

Approved by the DRIRE

D5000

Its 1-m circumference wheel enables measurements to be made of uneven ground or in high winds.

- Counter/decounter of 9,999.99 m reset by a simple touch of a lever, 1 cm display.
- 16-cm folding stand.
- Steel folding handle.
- Carrying bag or box.
- Weight: 27 kg.

D5000

Digital odometer

D5001

To measure distances in m or km and surfaces in m2.
8 memories possible.

- Distance measuring capacity: 999,999 m.
- Precision: ± 99.4 %.
- Power supply: 2 AA batteries (autonomy 720 h).
- Dimensions: folded: 78 cm / open: 109 cm.
- Weight: 1.5 kg.

Universal incline level

D7003

Enables the angle of an incline to be measured by means of a level to find the horizontal.
Display in degrees.

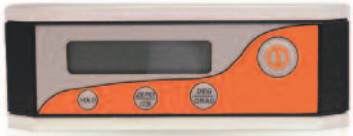
- Dimensions : 100 x 15 x 100 mm.

D7003

Electronic level

D7000.03

- Measuring capacity: 360 °.
- Resolution: 0.1 °.
- Memory function.
- Magnetic base.
- Thread for photo type tripod (1/4").
- Supplied with cover.
- Dimensions: 156 x 56 x 31 mm.



D7000.03

Density switch controller

Pressure controller

S0703/11

To control the gas pressure in the Density switch controller and to check securities with traceability of the operations.
Case equipped with:
- A digital controller with integrated sensor.
- A complete gas plate.
- A colour touch screen and operating software.
- A printer for reports.
- Measuring range = 10 bars, precision ± 0.2%.

The case is delivered with a COFRAC calibration certificate connected without accessories (see below).
- Power supply: 230 V 50 Hz single-phase.
- Weight: 12 kg.

Close-up view of the pressure controller

S0703/11

Pressure controller fitted with a gas recovery kit

S0703/11RECUPSF6

For connecting to the gas bottle.

Cases of Accessories


S0703/12

"SF6" for additional filling

S0703/12

Comprising :
- A pressure reducing gauge with STAUBLI RBE 08 female connection.
- An 8-metre blue tube for connecting to the Density switch controller with STAUBLI RBE 08.
- A 2-metre blue connection tube from the pressure reducing gauge to the controller.
- A cell linking cable fitted with IP2X retractable pins.
- An earthing cable.

"Azote" for pressure control

S0703/13

comprising :
- A pressure reducing gauge with STAUBLI RBE 08 female connection.
- An 8-metre orange tube for connecting to the Density switch controller with STAUBLIRBE 08.
- A 2-metre orange connection tube from the pressure reducing gauge to the controller.
- A cell linking cable fitted with IP2X retractable pins.
- An earthing cable.


S0703/13

Density switch controller

Accessories

SF6 Detector

S0704

SF6 Portable gas detector with microprocessor.
Enables the presence of SF6 gas to be detected with precision.
Sound detection with variable frequency.
Visual detection: 18 LED with 3 colours.
Instantaneous response time.
Detection head: 20 h life.
Function key: silent.
7 sensitivity levels selected by touch keyboard.

- Minimum sensitivity: 3 g/year.
- Pump enabling air to circulate through the detection head.
- Flexible probe with 35.5 cm stainless steel stem.
- Power supply by 2 LR 14 batteries.
- Function key: battery test / control.
- Autonomy approx. 30 h.
- Supplied with 2 detection heads.
- Dimensions: 229 x 65 x 65 mm.
- Weight: 560 g.

Delivered in a plastic case.

S0704

S0703/41

Thermometer and probe

S0703/41

Digital display thermometer.
- Temperature: -50°C +199°C.
- Sensitivity: 0.1°C.
- Type K probe with dimensions: Ø 3 mm, length 122 mm.

Delivered with 3-point COFRAC connected calibration and protective case.

12-litre recovery bottle

S0703/50/R08

SF6 gas recovery bottle.
Supplied alone in a case without the connection kit (tube/connection/gauge).
- Manufacture: steel.
- Capacity: 12 litres.
- Dimensions: Ø23 x (h)50 cm.
- Weight: 7.2 Kg

S0703/50/R08

Connection kit

S0703/50/R10

Connecting tube 1.2 m long with 0/ 10 bar pressure gauge, for connection between recovery gas bottle and control case already fitted with S0703/49 connection.

S0703/50/R10

SIEMENS coupler

S0703/R05

Connection on the control case side:
- Staubli RBE 08 self-sealing butt.

Connection on the Density switch controller side:
- Female compression flange M26 x 1.5 model DILO VK/F-02/8 PN 64 DN 8 in 2.040 aluminium.

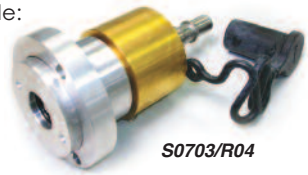
S0703/R05

MERLIN GERIN coupler

S0703/R04

MERLIN GERIN DN11 coupler for connecting to Density switch controller.
Connection on the control case side:
- Staubli RBE 08 self-sealing butt.

Connection on the Density switch controller side:
- Compression flange Ø 70 mm in aluminium with 3 equidistant holes Ø 7 mm



S0703/R04

Consumables

Designations	Ref.
Spare part for detector	S0704/R01
Thermal paper for "red' and "grey" cases	AC2001/R01
Thermal paper for "black" cases	S0703/R60/1
DN 20 coupler	S0703/R07
DN8 coupler connection + O-ring	S0703/R08
Cap for grooved element	S0703/R09

S0703/R60/1

AC2001/R01

S0703/R08

S0703/R09

S0704/R01

S0703/R07

Thermal conductivity

These devices are used to determine the thermal conductivity and thermal resistance of buildings, insulation and building materials.

Thermal Conductivity Measuring Instrument for 300 mm specimen

According to ISO 8301 / ASTM C518 / DIN 52616 / EN 1946-3, EN 12664, EN 12667, EN 12939

TA0300

- Measuring range: in dependence of sample thickness 0.01 to 1.0 W/m.K
- Sample dimensions: thickness in dependence of thermal :
  - conductivity 20 to 80 mm.
  - w x d : 100 x 100 or 300 x 300 mm.
- Mean sample temperature: in dependence of sample thickness and thermal conductivity of the sample 0°C to 60°C.
- Measuring inaccuracy: typically ± 1,0% (max. ± 5%, according ISO 8301).
- Reproducibility : typically ± 0,5% (max. ± 1%, according ISO 8301).
- Options: software Lambda 2010, USB- Connection cable, computeur, printer.
- Dimensions : 537 x 560 x 617 mm.
- Weight : 72 kg.

Guarded Hot Plate for 300 mm specimen

According to ISO 8302 / ASTM C177 / DIN 52612 / EN 1946-2, EN 12664, EN 12667, EN 12939

TA0301

The same as The **T0A300** but for guarded hot plate method.

TA0300

TA0500

Heat flow meter for 500 mm specimen

According to ISO 8301 / ASTM C518 / DIN 52616 / EN 1946-3, EN 12664, EN 12667, EN 12939

TA0500

- Measuring range: in dependence of sample thickness 0.01 to 0.5 W/m·K.
- Sample dimensions: thickness in dependence of thermal conductivity 20 to 160 mm. w x d: 300 x 300 mm or 500 x 500 mm.
- Mean sample temperature: in dependence of sample thickness and thermal conductivity of the sample -10°C - 60°C
- Measuring inaccuracy: typically ± 1% (max. ± 5%, according ISO 8302).
- Reproducibility: typically ± 0,5% (max. ± 1%, according ISO 8302).
- Options: software Lambda 2010, USB- Connection cable, computeur, printer.
- Dimensions: 790 x 930 x 1900 mm.
- Weight: 225 kg.

Guarded Hot Plate for 500 mm specimen

According to ISO 8302 / ASTM C177 / DIN 52612 / EN 1946-2, EN 12664, EN 12667, EN 12939

TA0501

The same as The **TA0500** but for guarded hot plate method.

Thermal conductivity

Guarded Hot Plate for insulating glass

According to ISO 10291, ISO 8302, ISO 52612 / EN 674, EN 1946-2, EN 12664, EN 12667, EN 12939

TA0800

- Measuring range: in dependence of sample thickness 0.01 to 0.5 W/m·K.
- Sample dimensions: thickness in dependence of thermal conductivity 20 - 100 mm w x d: 500 x 500 mm to 800 x 800 mm.
- Mean sample temperature: in dependence of sample thickness and thermal conductivity of the sample 0°C - 60°C.
- Measuring inaccuracy: typically ± 1,0% (max. ± 3%, according ISO 8302).
- Reproducibility: typically ± 0,5% (max. ± 1%, according ISO 8302).
- Options : Recirculation cooler Software Lambda 2010, PC, Printer.
- Power supply: 230 V, 50 Hz, max. 650 W.
- Dimensions: 1300 x 1100 x 1450 mm.
- Weight: 228 kg.

TA0800

Fire resistance

Burning Behaviour of Building Materials

According to EN ISO 11925-2, EN ISO 4102-1

TA0400

Determination of the Building materials of the material during direct flame effect,

- Sample dimensions : 250 x 90 x ≤ 60 mm or 250 x 180 x ≤ 60 mm.
- Burner: Vertically and 45° to the vertical axle inclinable with valve for the micro-adjustment of the flame.
- Power supply: 230 V / 50 Hz, max. 60 W.
- Dimensions: 700 x 400 x 970 mm.
- Weight: 59 kg.

TA0400

Thermal Resistance of Brickwork

According to EN 1934

TA4040

Determination of the thermal resistance of the steady masonry using the method of hot box with fluxmeter.

- Measuring range: R: 0.3 to 8.0 m^2.K/W
- Sample dimensions wall segments: 150 x 150 cm.
- Inaccuracy: typ. ± 3% (max. ± 5%)
- Reproducibility: typ. ± 1% (max. ± 3%)
- Temperature range:
  cold section: -10 °C - +40 °C.
  heat section: +10 °C - +40 °C.
- Power supply: 230 V / 50 Hz, 4000 W (3 x 230 V, 10 A).
- Total dimensions: 2700 x 2900 x 3200 m.
- Weight: 3185 kg.

NEW

TA4040

Thermal Resistance of Components

According to EN ISO 8990, EN ISO 12567 / EN 1934, EN 1946-4, EN 12412 / ASTM C1363

TA4240

Determination of properties of heat transfer of products and building component using the method of hot box with fluxmeter.

- Measuring range: R : 0.3 to 6.0 m^2 K/W.
- Sample dimensions: Standard window: 148 x 123 cm Standard door : 200 x 100 cm, Brick walls: 150 x 150 cm.
- Inaccuracy: typ. ± 3,0% (max. ± 5%).
- Reproducibility: typ. ± 1.0% (max. ± 3%).
- Temperature range:
  Cold section: -10 (-20 in option) °C - +40 °C.
  Heat section: +10 °C - +40 °C.
- Total dimensions: 3600 x 3800 x 4600 mm.
- Options: Test frame for brick walls and facade elements.
- Power supply: 230 V / 50 Hz, 3000 W (2 x 220 V, 10 A)
  400 V / 50 Hz, 2000 W (1 x 400 V, 10 A).
- Weight: 3480 kg.

NEW

TA4240

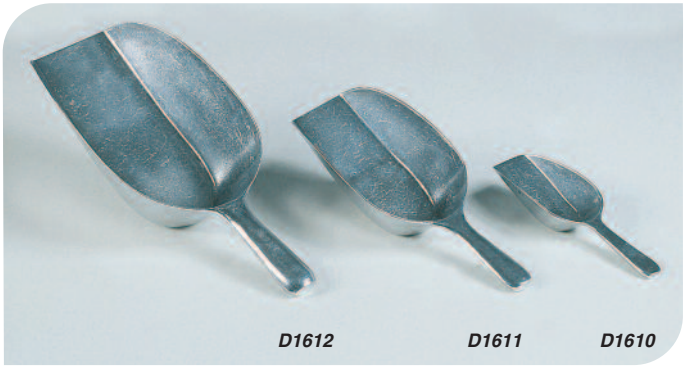
General Equipment

Table of contents

Scoop

Scoop In aluminium, with a rounded bottom and handle.

Ref.	Capacity CC	Dim. mm (L x l)
D1601	325	240 x 80
D1604	500	285 x 100
D1602	1 000	335 x 120
D1605	1 500	340 x 140
D1603	2 600	420 x 160



Scoop

In aluminium, with a flat bottom and handle.

Ref.	Capacity CC	Dim. mm (L x l)
D1610	165	210 x 70
D1611	450	310 x 110
D1613	750	340 x 130
D1612	1 550	400 x 130

Scoop

In poured type of stainless steel with handle.

Ref.	Capacity L
D1616	0,5
D1617	1
D1618	2

Stainless steel capsule

Ref.	Ø mm	H mm
V0116	240	80
V0116/1	300	90
V0116/2	350	140

Stainless steel beaker

Ref.	Capacity
D1072.4	100 ml
D1073.3	250 ml
D1074.4	500 ml
D1075.4	1000 ml
D1075.5	3000 ml

Metal Articles

Stainless steel D1322

Stainless steel tray, keeps shape and stackable

With reinforced corners to avoid becoming deformed with falls and impacts.
Projecting edges for ease of handling.
Thickness: 0.7 mm.

Ref.	Dim. mm (L x l x H)	Volume Litre
D1322/430	325 x 265 x 65	4
D1322/420	354 x 325 x 65	5,5
D1322/411	530 x 325 x 65	9
D1322/410	530 x 325 x 100	13,5
D1322/401	650 x 530 x 65	19
D1322/400	650 x 530 x 100	29

Stainless steel D1321/25/30/35/40

Stainless steel tray, keeps shape, with handles, stackable

Thickness: 0.45 mm.

Ref.	Dim. mm (L x l x H)	Volume Litre
D1321/25	250 x 180 x 50	2
D1321/30	300 x 225 x 55	3
D1321/35	350 x 250 x 60	4,5
D1321/40	400 x 280 x 65	6,5

Sterilisers see pages 250 to 252

Aluminium D1320 - D1321

Aluminium tray with handles

Thickness: 1 mm.

Ref.	Dim. mm (L x l x H)
D1320	315 x 230 x 60
D1321	975 x 265 x 60

Aluminium D1321/01/04/07/09

Thick aluminium tray, with handles, keeps shape

Thickness: 4 mm.

Ref.	Dim. mm (L x l x H)	Volume Litres
D1321/01	305 x 245 x 65	4,8
D1321/04	355 x 265 x 70	6,6
D1321/07	405 x 325 x 80	9,2
D1321/09	455 x 370 x 80	12,3

Plastic V0127 - V0127/1 - V0127/2

Stackable Containers

In rigid plastic.

Ref.	Dim. cm	Capacity Litres
V0127	38 x 28 x 20	20
V0127/1	58 x 33 x 25	46
V0127/2	66 x 40 x 30	72

Metal V0125/2 - V0125/1 - V0125

Metal box

Waterproof in tin with cover.

Ref.	Dim. Ø x H mm	Capacity Litres
V0125	100 x 80	0,5
V0125/1	100 x 125	1
V0125/11	135 x 150	2
V0125/2	200 x 200	5

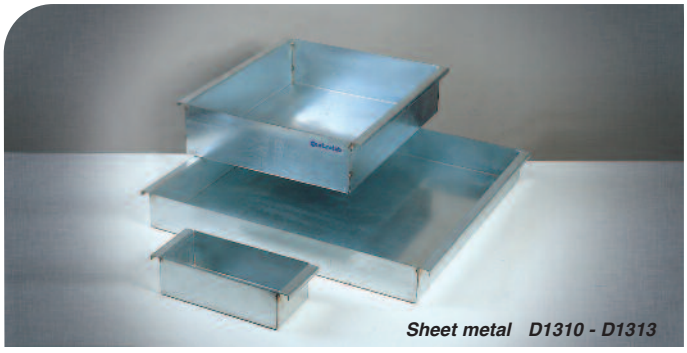
C0168CE - C0167CE

C0167/1

Steel cup for measuring density

According to EN 1097-3

Ref.	Capacity (L)	Materia
C0165CE	1	Inox
C0166CE	5	Inox
C0167CE	10	Inox
C0168CE	20	Inox
According to 12350-6 C0167/1	10	Painted steel



Sheet metal D1310 - D1313

Container in tin sheets

Ref.	Dim. mm (L x l x H)
D1310	600 x 600 x 80
D1311	500 x 400 x 120
D1313	250 x 120 x 80
According to 12697-18 B0022/21	160 X 160 X 10

Aluminium D1321/LCPC

Nestable container

In thick aluminium.

Bridges and Roads Type

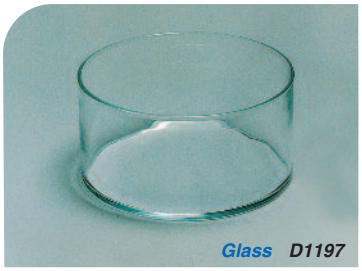
D1321/LCPC

- Volume 23 l.
- Removable handles and label holder.
- Dimensions: 640 x 440 x 101 mm.
- Weight: 1.7 kg.

Glass Articles

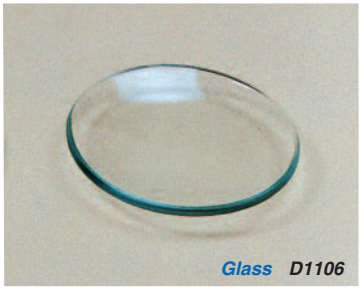
Crystallising dish in borosilicate glass without lip (with Lip add R to the Ref).

Ref.	Cap. Litre	Ø mm	H mm
D1195	0,5	115	65
D1196	0,9	140	75
D1197	2	190	90
D1198	3,5	230	100


Glass D1197

Watch glass

Ref.	Ø mm
D1106/2	60
D1106	100
D1106/1	120
D1106/3	200


Glass D1106


Glass D1041.2

Glass pycnometer

With large neck Ø 40/45 mm.

Ref.	Capacity ml
D1041.4	500
D1041.2	1 000
D1041.3	2 000

Gay Lussac pycnometer

According to pr NF EN 1880-1

For measuring specific density.
Neck Ø 8.5/10 mm.

Ref.	Capacity ml
D1125	25
D1126	50
D1127	100


Glass D1125


Glass D1042

Glass pycnometer

Standard type.
Neck Ø 26/39 mm.

Ref.	Capacity ml
D1040	500
D1041	1 000
D1042	2 000

Glass desiccator with tap

Delivered complete with stoppered cover or tap and perforated disk.

Ref.	Ø mm	Tap
D1110	200	
D1112	200	•
D1112/A	250	•
D1113/A	300	•


Glass D1110


D2010

Sucking pump

D2010

To be fixed on a tap.
To be used for a minimum water pressure of 0.7 kg/cm^2.

Fiole Erlenmeyer

Ref.	Capacity ml
D1030	125
D1030.1	250
D1032	500
D1033	1000

Glassmeasuring flask with stopper

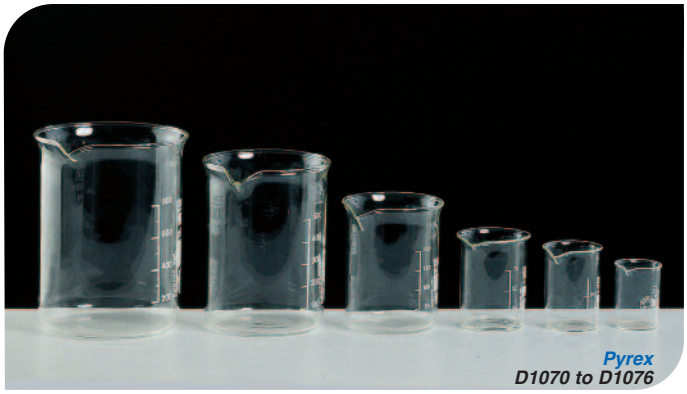
Ref.	Capacity ml
D1059	100
D1060	250
D1061	500
D1062	1000
D1063	2000


Glass D1059 to D1063


Plastic D1535 to D1538

Plastic overflow

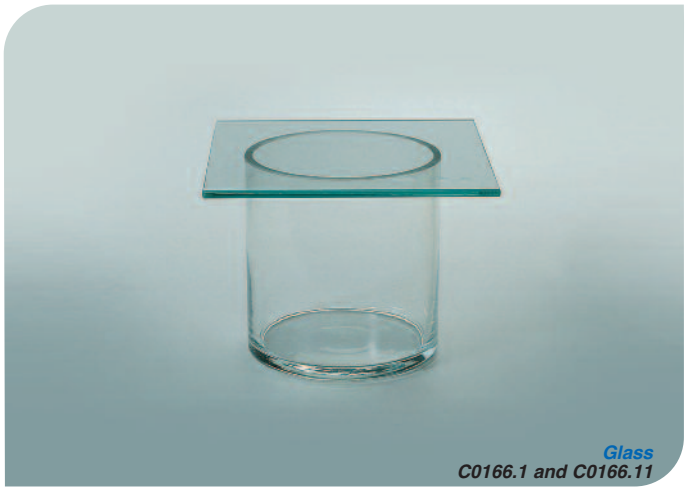
Ref.	Capacity ml
D1535	100
D1536	250
D1537	500
D1538	1 000



Pyrex
D1070 to D1076

Pyrex graduated beaker

Ref.	Capacity ml	Graduation ml
D1070	25	5
D1071	50	10
D1072	100	20
D1073	250	50
D1074	600	50
D1075	1000	100
D1075/1	2000	200
D1076	5000	500



Glass
C0166.1 and C0166.11

2-litre round jar

Glass with a grounded edge for aggregates true density.
Glass plate for jar.

C0166.1	Jar
C0166.11	Plate

Glass
D1067.4 - D1067.3 - D1067.2

Bottle with rounded ground bottom 29/32

Ref.	Capacity ml
D1018.1	100
D1018.2	250
D1018.3	500
D1018.4	1000

Bottle with flat ground bottom 29/32

Ref.	Capacity ml
D1067.1	100
D1067.2	250
D1067.3	500
D1067.4	1000

Glass
D1017.3

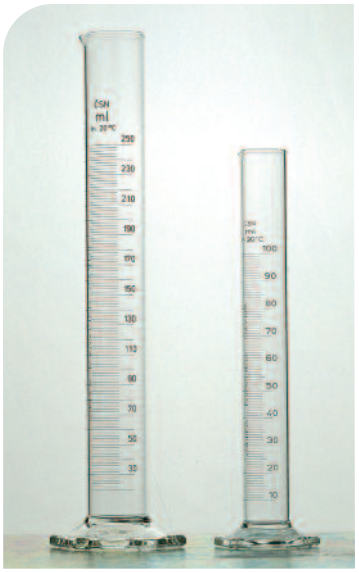
Bottle with ring and polypropylene cover

Ref.	Capacity ml
D1017.1	100
D1017.2	250
D1017.3	500
D1017.4	1000
D1017.5	2000
D1017.6	5000

Glass / Plastic Articles

Graduated glass test tube

Ref.	Capacity ml	Graduation ml
D1001	25	0,5
D1002	50	1
D1003	100	1
D1004	250	2
D1005	500	5
D1006	1 000	10
D1007	2 000	20



Glass *D1001 to D1007*

Plastic *D1020 to D1026*

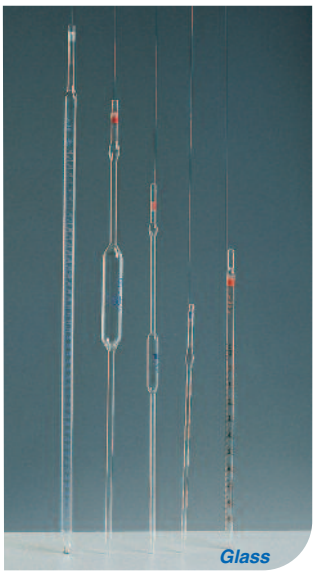
Graduated plastic test tube

Ref.	Capacity ml	Graduation ml
D1020	25	0,5
D1021	50	1
D1022	100	1
D1023	250	2
D1024	500	5
D1025	1 000	10
D1026	2 000	20

Graduated glass test tube with stopper

Ref.	Capacity ml	Graduation ml
D1011	25	0,5
D1012	50	1
D1013	100	1
D1014	250	2
D1015	500	5
D1016	1 000	10

Glass



Glass

Graduated glass pipette

Ref.	Capacity ml	Graduation ml
D1150	1	0,01
D1151	5	0,1
D1152	10	0,1
D1153	25	0,1
D1154	50	0,1

Standard ball pipette

D10501

Made up of a rubber ball to take pipettes of Ø 5 to 8 mm.

Lab

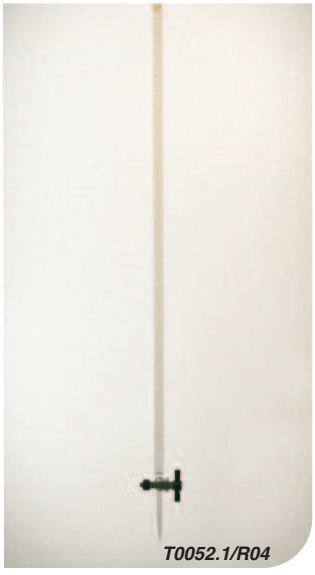
D10502

Same use as for the ball pipette.
The liquid is sucked up using one hand only by turning a thumb wheel.
Capacity 10 ml.
Valve for rapid evacuation.

D10501 *D10502*

Glass burette with Teflon tap

Ref.	Capacity ml	Graduation ml
D1162/1	10	0,1
D1162/2	25	0,1
T0052.1/R04	50	0,1



T0052.1/R04

Densimeter

T0060/A3

• Length 260 mm.

Densimeter

According to pr NF EN 1880-1

T0060/A

Particularly for sedimentation analysis.
Length 290 mm.

Ref.	Scale g/l	Division g/cm3
T0060/A3	1 000/1 500	5
T0060/A	995/1 030	0,5

Standard densimeter

• Length 290 mm.
• Division 2 g/l.

Ref.	Scale g/l
T0060/B1	800- 1000
T0060/B2	1 000-1 200
T0060/B3	1 200-1 400
T0060/B4	1 400-1 600

Plastic box with lid

In polystyrene crystal 1 mm thick.

Ref.	Ø int. mm	H mm	Set of
V0123T	40	100	25

Plastic ***V0123T***

Pyrex ***D1105***

Petri dish

D1105 ***ø 100 mm***

Pyrex glass

Plastic beaker

Ref.	Capacity ml	Graduation ml
D1073.1	250	10
D1074.1	500	10
D1075.1	1 000	20
D1076.1	2 000	50
T0052.1/R10	3 000	500
D1076.11	5 000	100

Plastic ***D1073.1 - D1074.1 - D1075.1 - D1076.1 - D1076.11***

Plastic beaker with handle

Ref.	Capacity ml
V0102/1	500
V0102/2	1 000
V0102/3	2 000
V0102/4	3 000
D1076.12	5 000

Translucent screw-top jar

Leak-proof polypropylene plastic and screwed lid with cardboard joint.

Ref.	Capacity ml	Ø mm	H mm	Lot de
D1370T	125	55	60	10 U
D1372T	250	65	80	12 U
D1374T	500	90	85	8 U
D1376T	1 000	110	120	15 U

Plastic ***D1370T - D1372T - D1374T - D1376T***

Porcelaine bowl

Ref.	Ø mm	H mm
D1170	100	25
D1171	120	32
D1173	210	60

Porcelaine pestle and mortar

Ref.	Ø mm
D1180/B	100
D1180/A	125
D1181/B	180

D1173 - D1170 - D1171 - D1179 - D1181/B

Accessory Rubber pestle

D1179

Consumables

❑ Consumables - **O** Chemical products

Products	Reference	Conditioning	Weight - Volume	Test	Standard
O Hydrochloric acid	**D0808**	Bottle	1 litre	Cement	*EN 196-2*
O Nitric acid	**D0809**	Bottle	1 litre	Cement	*NF P15-466*
O Pure sodium chloride	**D0827**	Bottle	1 kg	Aggregates	*EN 1744-1*
O Methylen blue	**T0052.11** **T0052.112**	Bottle Bottle	100 g 6 U.	VB/VBS VB/VBS	*NF P18-592* *NF P18-592*
O Bromine	**D0895**	Bottle	250 ml	Aggregates	*EN 1744-1*
O Calcium carbide	**T0021.1**	Bottle	450 g	Humidity	
O Barium chloride	**D0829**	Bottle	1 kg		
❑ Standard cement	**L0041/4.1S**	Sachet	20 g	Cement	*EN 196-6*
❑ Glue with hardener	**C0215/9.1**	Boxes	1 kg	Wafer bonding	*NF P18-853*
❑ Distilled water	**D2102**	Can	5 litres		
O Methyl red	**D0840/1**	Bottle	25 g	Aggregates	*EN 1744-1*
❑ Fine silica	**B0134/R022**	Bag	25 kg	Rupture ind.	*EN 13075-1 / EN 13075-2*
❑ Silica gel	**D0819**	Bottle	1 000 g	Desiccation	
❑ Mould oil	**C0139.1**	Can	10 litres	Concrete	*NF P18-422*
❑Sodium Hexametaphosphate	**D0802**	Bottle	1 000 g	Sedimentation analysis	*NF P94-057*
❑ Kaolinite	**T0052.12**	Bottle	500 g	VB/VBS	*NF P18-592*
O Virgin mercury	**D0881**	Bottle	1 kg		
O Silver nitrate (crystallised)	**D0814**	Bottle	25 g	Cement	*NF P 15-466*
❑ Filter paper Ø 90 Ø 185 Ø 150	 **T0052.1/R05.90** **T0052.1/R05.185** **D1800**	 Packet Packet Packet	 100 filters 100 filters 100 filters	 VB/VBS VB/VBS CBR	 *EN 933-9* *EN 933-9* *NF P 94-078*
❑ Paraffin oil viscosity at 170 cst ± 10	**D0805/GL**	Can	10 litres	Density	*NF P18-559*
❑Paraffin	**D0805/G**	Plate	5 kg	Aggregates	*EN 12697-6*

Toxicology sheets may be consulted on the French National Institute of Research and Safety Web site : www.inrs.fr section "Products and service > Data bases".

Consumables

❑ Consumables - **O** Chemical products

Products	Reference	Conditioning	Weight - Volume	Test	Standard
❑ Trimethyl 1 hexanol	**D0824/2**	Bottle	1 litre	Aggregates	*EN 1744-1*
O Potassium thiocyanate	**D0823/1**	Bottle	1kg	Aggregates	*EN 1744-1*
O Liquid phenolphtalein	**D0847.1**	Bottle	125 ml	Concrete carbonation	
O Powdered phenolphtalein	**D0847.2**	Bottle	250 g	Concrete carbonation	
❑ Ammonium thiocyanate	**D0853**	Bottle	1kg	Aggregates	*EN 1744-1*
❑ Standard sand	**L0007**	Sachet	1350 g	Cement	*EN 196-1*
O Sodium hydroxide (sodium)	**D0801**	Bottle	500 g		
❑ Wash solution	**T0050/7.1**	Carton 15 doses	15 x 125 ml	ES	*EN 933-8*
❑ Sulphur (pure)	**C0121/1.1**	Bag	25 kg	Concrete	
❑Sulphur (Mixture of) Type A	**C0121/1A**	Bag	10 kg	Concrete	
❑Sulphur (Mixture of) Type B	**C0121/1.20**	Bucket	20 kg	Concrete	
O Ammonium iron sulphate	**D0834G**	Bottle	1000 g		*EN 1744-1*
❑ Buffer (solution) pH 4 / pH 7	**D1850/W/R01**	Bottle	5 x 20 ml		
❑Buffer (solution) pH 7 / pH 10	**D1850/W/R02**	Bottle	5 x 20 ml		
❑Buffer (solution) pH 4	**D1850/4T**	Bottle	460 ml		
❑Buffer (solution) pH7	**D1850/7T**	Bottle	460 ml		
❑Buffer (solution) pH 10	**D1850/10T**	Bottle	460 ml		
O Pure toluene	**D0800/52**	Can	5 litres	% in water	*EN 1428*

Risks and safety recommendation/ Labelling hazardous products

Labels on chemical products and reagents carry symbols indicating risks, the nature of the particular risks and safety advice with regard to products considered to be hazardous, in accordance with French law and the recommendations by the European Community.

When there are no symbols or codes on risks to safety, this does not however mean that the product is not considered to be hazardous.

In any case, it is up to the user to take all customary precautions when using the products.

All the products supplied by our company are exclusively intended for laboratory use only. They may conform to certain pharmacopoeia but are never sold with the guarantee that they conform to these pharmacopoeia.

We decline any liability in the event that these products are used outside a laboratory, for instance, in the medical, pharmaceutical, food industry and other sectors.

The user alone is responsible for handling and experiments carried out with our products, as well as the storage conditions.

Distillers / Pump

Distiller in stainless steel Flow 5 l/h of distilled water

D2100

Automatic system for keeping water at a constant level.
- Power: 4 kW.
- Power supply: 230 V 50 Hz single-phase.
- Dimensions: L x H: 350 x 740 mm.
- Weight: 4 kg.

Flow 5 l/h of distilled water

D2101

Identical to the 5 l/h model.
- Power: 8 kW.
- Power supply: 220 V mono.
- Dimensions: 600 x 360 x 750 mm.
- Weight: 20 kg.

D2100

D2100.1

Distiller in Pyrex glass and stainless steel

D2100.1

Very compact make,quickly put into service and with minimum upkeep.
- Flow: 4 l/h of distilled water.
- On leaving cooker 50 °C.
- Power: 3 kW.
- Power supply: 220 V mono.
- Dimensions : 180 x 200 x 620 mm.
- Weight: 6 kg.

D2105

Automatic water bi-distiller without tank

D2105

Capacity: 4 L/h. Consumption: 120 L/h of water under pressure of between 3.5 and 7 bars. Distiller in stainless steel with primary cooler in stainless steel and secondary cooler in borosilicate glass.
With two separate distribution taps for once-distilled conductivity water.
2.1 µS/cm and bi-distilled conductivity water 1.6 µS/cm at 20°C.
Water level and overheating security. Warning light when impurities are detected. To be placed on the bench.
- Power supply: three-phase 400 V.50 Hz.
- Power: 6.5 kW.
- Dimensions: L 550 x P 280 x H 570 mm.
- Weight: 23 kg when empty, 45 kg when filled with water.

D2010

Sucking pump

D2010

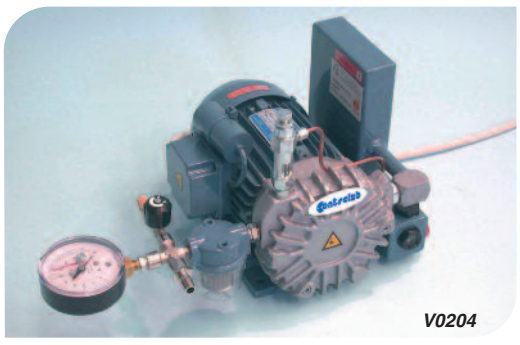
To be fixed to a tap.
To be used for a minimum water pressure of 0.7 kg/cm^2.

V0203/R011

Vacuum gauge

V0203/R011

Enables compliance with the vacuum laid down by the test standards.
Comprises :
- A precise regulating valve for adjusting the vacuum to the desired value.
- A controlling manometer graduated from 0 to 760 mm Hg.
- Weight: 500 g.



V0204

Vacuum pump

V0204

Enables a vacuum of 730 mm Hg to be obtained.
- Air flow : 5 m3/h.
- Intensity : 3 A.
- Power supply : 220 V mono.
- Weight : 15 kg.

Hammers

① Rubber block Ø 50 mm

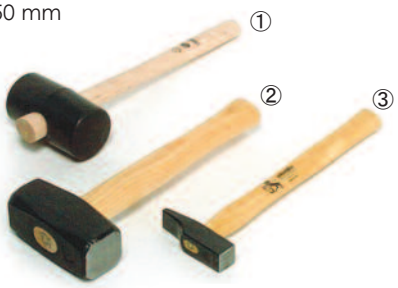
V0195

② 1 kg Mallet

V0194

③ 300 g hammer

V0193



Ear defenders

D1532.5

For workstations with a high level of noise.

- Attenuation:
  Low frequencies: 18 dB
  Medium frequencies: 27 dB
  High frequencies: 35 dB
- Weight: 195 g.

D1532.5

Helmet with visor

D1532.10

In high-density polyethylene effectively protects against projections and bad weather.

D1532.10

Half-mask in silicon with two removable filters

D1532.12

Particularly used to protect against trichlorethylene steam.

- Double rapid adjustment strap.

D1532.12

① Flexible stainless steel spatulas

Ref.	Blade length mm
D1630	100
D1631	150
D1632	200
D1633	300

② Rigid stainless steel spatulas

Ref.	Blade length mm
D1640	20
D1641	50
D1642	70

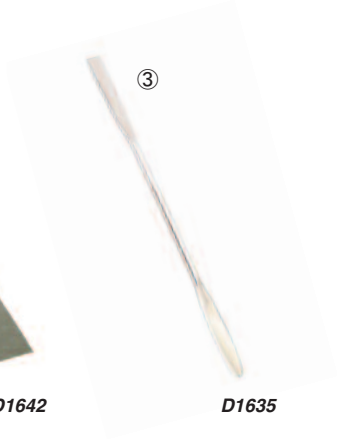
③ "Chattaway" type double spatula

D1635

Length 125 mm. – Width 5 mm.

D1630 à D1633

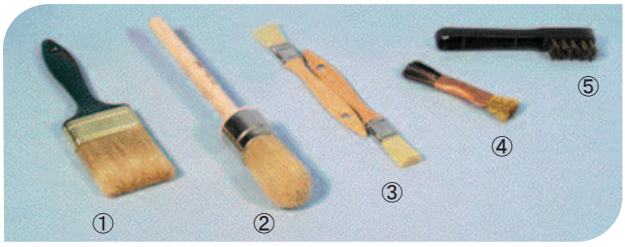
D1640 à D1642



D1635

Brushes specially intended for cleaning sieves

Ref.	
V0179/1	① Flat 62 mm nylon
V0179	② Round brush Ø 35
V0179/3	③ Set of 2 nylon brushes
V0179/2	④ Dual nylon / brass
V0179/4	⑤ Brass brush



Folding transport trolley load up to 250 kg

Steel tray with reinforced edge.

- Anti-slip mat.
- Safety bumpers.
- Strong wheels: steel rims, large running surface.
- Small volume when folded.

Ref.	Dimensions plateau in mm	Overall height in mm open	Overall height in mm folded	Weight kg
D1700.2	745 x 480 x 23	890	265	12
D1700.3	890 x 600 x 23	890	265	17,5
D1701.2	745 x 480 x 23	915	•	19,5
	(H between trays: 524)			

D1701.2

Fold-down handle, unlocking by foot

D1700.2 - D1700.3

Ovens / Hotplates

Microwave ovens
Ideal for drying aggregates rapidly.

Promaster type

D1424/5

Particularly robust industrial micro-wave oven, fitted with 2 magnetrons and and meeting the requirements of standard **NP 94-049-1**.

- Interior dimensions: 330 x 330 x 180 mm.
- Power output: 1,700 W (1 500 W minimun required by the standard).
- Power input: 2,700 W.
- 10 power levels.
- 20 programmes with 3 sequence options.
- Triple safety door.
- Safety thermostat.
- Weight: approx. 30 kg.

Fully stainless steel interior and exterior ***D1424/5***

D1424/3

Standard Type

D1424/3

- Interior dimensions: 350 x 350 x 210 mm.
- Power output: 1,000 W.
- Power input: 1 500 W.
- Digital timer with clock.
- 5 power levels.
- Safety system.
- Weight: approx 20 kg.

Hotplates

Ceramic hotplate

Main advantages of glass ceramic:

- Chemically resistant.
- Flat and non-porous surface for easy upkeep.
- Low thermal expansion.
- Resistance to thermal shocks, withstands being sprayed with cold water.
- Excellent energy yield.
- Temperature range for use + 50 to + 600 °C.
- Automatic built-in temperature controller.
- Power supply: 230 V 50/60 Hz.
- 3 models (see table below).

V0200/60

Site burner
(see aggregates page)

Ref.	Plate dimensions in mm	Heating dimensions in mm	Power in kW	Integrated stirring (100 at 1 000 rpm)
V0200/60	280 x 280	Ø 165	1,2	no
V0200/70	280 x 280	Ø 200	1,8	no
V0200/81	280 x 280	Ø 155	0,9	no

Steel hotplate

With multi-position heating adjustment.
(see table below).

Ref.	Dimensions en mm	Power in W
V0200	Ø 190	1 500
V0200/1	200 x 300	2 000
V0200/3	300 x 400	2 800

V0200

Laboratory oven
General use - Natural ventilation.

Complete galvanised steel construction with exterior stainless steel sheet covering.
Double partitioning with 60 mm thick glass fibre insulation.
Temperature range adjustable from ambient to + 200°C.

- Adjustment by analogue thermostat with engraved dial.
- Sleeve in upper part to house a thermometer (not supplied).
- ON/OFF switch with indicator lamp.
- Heating indicator lamp.
- Supplied with two galvanised steel shelves that can be positioned at different heights.
- Power supply: 230 V, 50 Hz, one-phase.

D1406/V.2

Ref.	Volume (L)	Internal dimensions L x p x H mm	External dimensions L x p x H mm	Number of doors	Power (W)	Weight (kg)	Shelf ref.
D1406/V.1	50	350 x 360 x 390	590 x 460 x 620	1	750	34	**D1406/V.1/R01**
D1406/V.2	100	400 x 420 x 600	640 x 515 x 805	1	1 200	40	**D1406/V.2/R01**
D1406/V.3	220	600 x 610 x 600	840 x 725 x 805	1	2 000	60	**D1406/V.3/R01**
D1406/V.4	440	900 x 700 x 700	1 140 x 815 x 905	2	3 600	85	**D1406/V.4/R01**

Laboratory oven
General use - Forced ventilation.

Galvanised steel frame construction, front face covered with a stainless steel sheet and completely stainless steel interior.
Double partitioning with 60 mm thick glass fibre insulation.
Temperature range adjustable from ambient to + 200°C.

- Adjustment by analogue thermostat with digital temperature display.
- ON/OFF switch.
- Power on and heating indicator lamps.
- Supplied with two stainless steel shelves that can be positioned at different heights.
- Power supply: 230 V, 50 Hz, one-phase.

D1406/V.8

Ref.	Volume (L)	Internal dimensions L x p x H mm	External dimensions L x p x H mm	Number of doors	Power (W)	Weight (kg)	Shelf ref.
D1406/V.5	100	400 x 420 x 600	700 x 515 x 910	1	1250	45	**D1406/V.5/R01**
D1406/V.6	220	600 x 610 x 600	900 x 725 x 910	1	2050	70	**D1406/V.6/R01**
D1406/V.7	440	900 x 700 x 700	1220 x 805 x 1010	2	3700	95	**D1406/V.7/R01**
D1406/V.8	720	1000 x 600 x 1200	1330 x 715 x 1555	2	4950	140	**D1406/V.8/R01**

Sterilisers

Drying oven

Especially well adapted for drying aggregates at 105°C.
All of our ovens are fitted with special equipment with forced draught ventilation and external exchange to eliminate condensation and much for a quicker aggregate or soil samples drying.
We also guarantee temperature homogeneity **according to NF X 15-140**.
Upon request, supply of a 9-point checking report.

D 1400/V.4

General characteristics :

- Digital temperature display at 1/10th and control by PT 100 Ohm sensor associated with a self-adjusting and self-adapting PID type regulator providing ± 1°C precision.
- Class 3.1 independent safety thermostat to avoid any overheating.
- Ventilation optimising homogeneity.
- Perfect insulation via double silicon seal and cellular glass wool ensuring a low exterior contact temperature.
- Supplied with stainless steel anti-tipping safety shelf.

Air Concept universal ovens
Volumes: 60, 120 or 240 l

- Temperature range: from + 10°C to 250°C.
- Electronic regulator with double display: real and advised temperature.
- Integrated programming function.
- Brushed steel interior, especially resistant to corrosion.

Large volume universal ovens
407 litres, 727 litres and 1 007 l

- Temperature range from 40°C to 200°C.
- 2 rear face orifices for air evacuation.
- Assembled on casters ñ Double doors. strengthened Shelves .
- Weight on shelves > 30kg.

Other Accessories
For ovens

- Chrono-switch timer.
- Time programmer.
- Digital communication by RS485 / RS232 to exploit data on PC.
- Extraction chimney.
- Passage in wall for temperature measurement for 407 l, 7272 l and 1 007 l.

D1400/V.6

Trays
See page 31

Ref.	Volume (L)	Int. dimensions L x p x H mm	Ext. dimensions L x p x H mm	Power voltage	Weight (kg)	Nbr stainless steel shelves supplied	Ref. Additional shelf ref.
D1400/V.4	60	400 x 370 x 390	530 x 540 x 640	1 000 W/220 V	39	2	**D1400/R5**
D1400/V.5	20	500 x 470 x 500	630 x 640 x 740	1 000 W/220 V	53	2	**D1400/R7**
D1400/V.6	240	500 x 470 x 980	630 x 640 x 1240	2 000 W/220 V	79	2	**D1400/R7**
D1402/V.3	407	980 x 500 x 740	1120 x 700 x 1160	4 500 W/380 V tri.	148	2	**D1402.4/R01**
D1404/V.2	727	1000 x 600 x 1140	1140 x 800 x 1540	6 000 W/380 V tri.	198	2	**D1403.2/R01**
D1403/V.2	1 007	1000 x 600 x 1500	1140 x 800 x 1900	6 000 W/380 V tri.	230	2	**D1403.2/R01**

V0240 - S0155/4

Immersion thermometer

V0240

Can be adapted on a tank and used to regulate the ambient temperature at 60°C.

- Stirring system.
- Heating: 1 000 W 220 V 50 Hz.
- Precision thermometer.
- Dimensions : 420 x 130 x 280 mm.
- Weight: 6 kg.

Accessory
Plexiglas tank

S0155/4

- Dimensions : 600 x 300 x 380 mm.

D1409

Stainless steel thermostatic bath with refrigerated unit

D1409

Temperature range adjustable from + 5°C to + 95°C ± 1°C.

- Capacity: 42 litres.
- Interior dimensions: 510 x 350 x 230 mm.
- External dimensions: 680 x 420 x 950 mm.
- Power supply: 230 V 50 Hz 2 000 W.
- Weight: 60 kg.

D1409.45E D1409.25E D1409.15E

Thermostatic bath

- Stainless steel tank.
- Temperature control (between ambient and 100°C) by mechanical or electronic regulation with digital display.
- Safety thermometer in case of lack of water. (See table below).

Accessory
Circulation beater

D1409P

Ref.	Volume (L)	Regulation	Int. dimensions L x p x H mm	Power (W)	Weight (kg)	Cover ref.
D1409.15 **D1409.15E**	15	Mechanical Electronic	300 x 160 x 280	1 000	10	**D1409.15F**
D1409.25 **D1409.25E**	25	Mechanical Electronic	490 x 160 x 280	1 500	13	**D1409.25F**
D1409.45 **D1409.45E**	45	Mechanical Electronic	590 x 160 x 480	2 000	20	**D1409.45F**

Weighing Scales

D0627.019-032-042

D0627.018-028-039-049-058

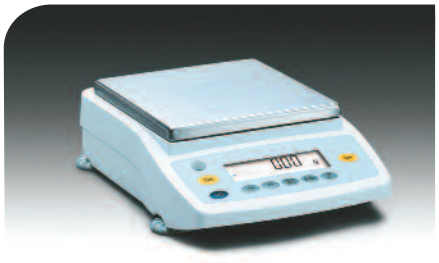
D0627.070

D0627.01/0261-0262

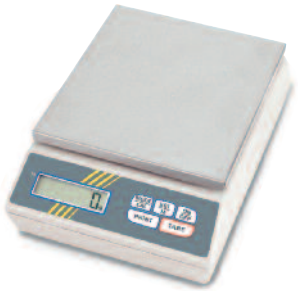
0 to 3 100 g

Range	Sensitivity	Stainless stell plate in mm	MB	MC	PC	Cal EX	Cal IN	COL	HW	PROTEC	Ref.
200 g	0,01 g	Ø 105	•		•	•					D0627.018
220 g	0,1 mg	Ø 75			•		•		•	•	D0627.01
220 g	1 mg	Ø 120			•		•	•	•	•	D0627.0261
410 g	0,01 g	Ø 116	•		•	•					D0627.019
420 g	1 mg	Ø 120			•		•		•	•	D0627.0262
600 g	0,01 g	Ø 140	•		•	•					D0627.028
610 g	0,01 g	Ø 116	•		•	•					D0627.032
1000 g	0,1 g	130 x 130	•		•	•					D0627.039
1 500 g	0,01 g	174 x 143	•		•	•					D0627.042
2 000 g	0,1 g	130 x 130	•		•	•					D0627.049
2 000 g	0,01 g	192 x 192			•	•			•		D0627.070
3 000 g	0,01 g	192 x 192			•	•			•		D0627.050
3 000 g	0,01 g	Ø 140			•	•					D0627.058

• *standard* • *in option*



D0627.191



D0627.061-11

D0627.190

6 000 to 10 000 g

Range	Sensitivity	Stainless stell plate in mm	MB	MC	PC	Cal EX	Cal IN	COL	HW	PROTEC	Ref.
6 000 g	0,2 g	320 x 240		•	•	•		•	•		D0627.194
6 000 g	1 g	170 x 150	•		•	•					D0627.11
6 200 g	0,01 g	180 x 180			•		•		•		D0627.191
6 500 g	0,1 g	200 x 1 60			•	•			•		D0627.061
7 500 g	0,1 g	Ø 232	•		•	•		•			D0627.190
10 000 g	1 g	140 x 145			•	•					D0627.113

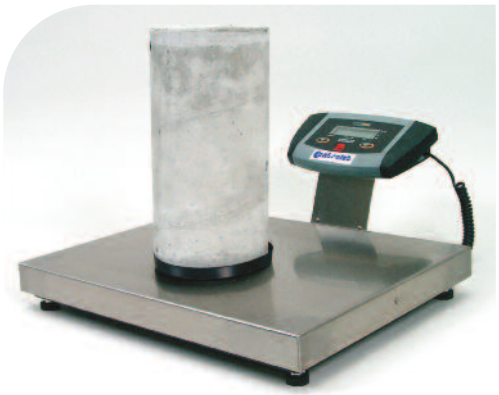
• *Standard* • *Optional*

MB : *Mains and battery*
MC : *Mains and cigarette lighter12 V*
PC : *RS232 plug for PC connection*
COL : *Display on column*

Cal EX : *External calibration weight supplied*
Cal IN : *Motorised internal calibration*
HW : *Hydrostatic weighing from below*
PROTEC : *Complete protection*

Weighing Scales

D0627.277-377

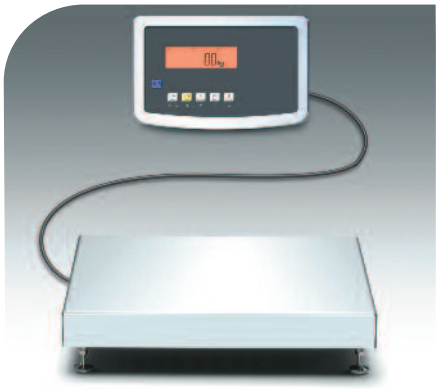


D0627.42/1

D0627.30

Reference standard weights with COFRAC certificate Class E1 - E2 - F1 - F2 - M1

D0627.40/1-42



D0627.394-494-594

D0627.294

15 kg and more

Portée	Sensibilité	Auto double scale	Stainless stell plate in mm	MB	MC	BAT	PC	Cal EX	COL	HW	HR	Ref.
15 kg	0,1 g/1 g	0-3 kg to 0,1 g 3-15 kg to 1 g	320 x 240		•		•	●	●	•	•	D0627.294
15 kg	0,5 g		200 x 240			●	•	•				D0627.277
24 kg	0,2 g		160 x 200			●	•	●				D0627.30
30 kg	0,1 g/1	0-3 kg to 0,1 g 3-30 kg to 1 g	400 x 300		•		•	●	●	•	•	D0627.394
35 kg	1g		240 x 350			●	•	●				D0627.377
50 kg	20 g		521 x 400	•				●	•			D0627.42/1
60 kg	10 g		310 x 274			•		●				D0627.40/1
60 kg	1 g/2 g	0-15 kg to 1 g 15-60 kg to 2 g	400 x 300		•		•	●	●	•	•	D0627.494
150 kg	20 g		310 x 274			•		●	●			D0627.42
150 kg	50 g		521 x 400*			•		●	●			D0627.42/2
150 kg	2 g/5 g	0-75 kg to 2 g 75-150 kg to 5g	500 x 400		•		•	●	●		•	D0627.594
200 kg	100g		660 x 545*			•		●	●			D0627.74

• *Standard* ● *Optional* * *Lacquered plate*

MB	*: Mains and battery*	**Cal EX**	*: External calibration weight supplied*
MC	*: Mains and cigarette lighter12 V*	**COL**	*: Display on column*
BAT	*: Mains and rechargeable battery*	**HW**	*: Hydrostatic weighing from below*
PC	*: RS232 plug for PC connection*	**HR**	*: High resolution sensitivity x 10*

Weighing Scales

Numbered calibration weights Class M1

Series of 6 100 g weights Class M1

D0799

Made of chrome-plated brass, numbered, in box composed of:
1 x 1 g - 2 x 2 g - 1 x 5 g - 1 x 10 g
2 x 20 g - 1 x 50 g - 1 x 100 g
2 x 200 g - 1 x 500 g - 1 x 1 kg
2 x 2 kg.


D0799

Other weights available Class E1 - E2 - F1 - F2

COFRAC certificate upon request

To order class M1 numbered weights individually :

Ref.	D0760	D0765	D0770	D0775	D0780	D0785	D0790	D0792	D0794	D0796
Weight g	50	100	200	500	1 000	2 000	5 000	5 000	10 000	20 000
Uncertainty in mg of COFRAC weight	1	1,5	3	7,5	15	30	75	75	150	300
Tolerance in mg	3	5	10	25	50	100	250	250	500	1 000
Chrome-plated brass	•	•	•	•	•	•	•			
Cast iron								•	•	•

Frame for hydrostatic weighing

V0084

To be used with a balance with hydrostatic weighing from below. A crank is used to raise the water tank and weigh the basket or the test specimen in the air or in the water.
- Dimensions: 510 x 510 x 1 150 mm.
- Weight: 50 kg.


V0084

Spirit level

D7004

Perfectly adapted for levelling precision balances. Ø 12 mm.


D7004

Perforated sheet basket Ø 3 mm

According to NF P18-554

D0440/1

- Dimensions : Ø 200 mm - H 180 mm.
- Weight : 580 g.


D0440/1


D0645.1

Anti-Vibration Table

D0645.1

This is designed for use in the laboratory or metrology room to provide suitable working conditions for devices that are sensitive to vibrations and shocks.

Characteristics :
- Large working surface of 400 mm x 450 mm.
- Ergonomic Styling for user comfort.
- Rugged construction for durability.
- Easy to set up light weight aluminium frame.
- Adjustable levelling feet to take care of un-even floor.
- New aluminium tubular frame for light weight.
- Scratch Resistant granite slab.
- Polished finish.
- Overall dimensions (w x d x h) : 800 x 600 x 782 mm.
- Work surface dimensions : 400 x 450 mm.
- Weight of work surface : 35 kg.
- Total weight : 55 kg.

Spring-type traction dynamometers

Ref.	Rabge / Graduation
D0628.01	5 kg / 20 g
D0628.02	10 kg / 50 g
D0628.03	25 kg / 100 g
D0628.04	50 kg / 200 g
D0628.05	100 kg / 500 g
D0628.06	200 kg / 500 g

D0628.03

D0628.041

Hook-type digital dynamometer

D0628.041

Especially intended for the control of surfacing of road binders and limes.
- Range: 50 kg / 50 g.
- Memorisation of weighed mass until the apparatus iS turned off.

Accessory Tarpaulin

D0628/R01

1 m^2, made of PVC, with eyelets.

Standards index

These standards could be revised, replaced or eliminated. It is recommended that it be verified that a standard is still in effect.

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Reference index

Reference index

Reference index

Reference index

Reference index

Reference index

Reference index

Analytical index

Analytical index

Analytical index

Analytical index

Analytical index

Analytical index

Limited liability company with capital of 585 750 € · RCS Bobigny B 316 015 007 · Siret 316 015 007 00032 · NAF 4669 B · TVA FR 13 316 015 007

Terms of Sale

Through his order, the Purchaser accepts these general terms and conditions of sale without reserve (hereinafter the "Terms of Sale") as well as the special terms and conditions of sale given in the order form and repeated in the invoice.
Unless formally accepted, in advance and in writing by CONTROLAB, no document and no special term can have the effect of waiving the Terms of Sale. By placing an order, the Purchaser therefore waives any condition to the contrary even if it is normally laid down thereby, (such as, in particular, his own general purchasing terms and conditions),
and irrespective of when CONTROLAB is informed thereof.

Description:

The illustrations and specifications appearing in the CONTROLAB catalogues, notices and price lists are only given on an indicative basis and without any commitment.
For instance, CONTROLAB reserves the right to make changes therein in accordance with improvements that CONTROLAB or its suppliers and sub-contractors may recommend.
The drawings, estimates, prices and projects drawn up by the CONTROLAB services shall remain its property and under no circumstances may be passed on to third parties.
CONTROLAB reserves the right to amend the Terms of Sale at any time abiding by a notice period of thirty (30) days.

Uses:

All equipment, goods, components and products supplied by CONTROLAB (hereinafter the "Products") are exclusively intended for laboratory use. CONTROLAB declines to accepting any liability in the case where the Products are used for any use other than their original intended use.
Only the users of the products are responsible for the manipulations carried out with the help of CONTROLAB equipment. In particular, they shall ensure that these uses comply with the legal and regulatory provisions, particularly with regard to the safety of the staff and, in general, with all provisions concerning working safety and accident prevention.

Prices (excluding after-sales service):

The unit prices mentioned in the CONTROLAB price lists, estimates and invoices are understood to be in euro, are exclusive of taxes and VAT, customs charges and insurance, packing and transport costs, must be added to them as well as any other duties, taxes or other obligatory levies, present or future, which, in any case, remain at the Purchaser's expense.
Orders for an amount greater or equal to 200 euro (excl. VAT) are delivered, in metropolitan France, free of carriage and packaging charges.
For orders to be delivered to metropolitan France CONTROLAB apply a flat rate for documentation fees, packaging and shipping.
The special packing and transport, in accordance with the Purchaser's instructions, shall, for all types of order and regardless of the amount, be invoiced in addition.

Establishment of orders:

The order forms, which must be established in written repeats necessarily the following elements:
- the references and descriptions in the CONTROLAB catalogues;
- the quantities ordered stated in number of sale units.

In the case where they are imprecise or contradictory, CONTROLAB refuses to accept any responsibility for errors in delivery which may occur as a result of the choice that CONTROLAB would be forced to make.

Acceptance of orders:

CONTROLAB is only committed to an order after its has confirmed it formally and in written
confirmation. Any change or cancellation of an order requested by the Purchaser may only be
taken into consideration if it is received in writing by CONTROLAB at least eight (8) calendar days prior to the date planned for shipping the Products and shall be only considered as accepted if CONTROLAB confirms it in writing. Any additional costs arising from the change in or the cancellation of the order shall be paid by the Purchaser.
CONTROLAB shall be released from its obligation to deliver and its liability shall not be sought for any occurrences originating, directly or indirectly, from a case of force majeure or events making it difficult to fulfil the order such as, without this list being limitative, fire, floods, natural disasters, machine damage, accidents, act or fault of the government, war, civil war, civil or social upheavals, strikes departure or work stoppage of the professional entity charged with carrying out the order, impossibility of obtaining supplies of raw materials, parts or components, sudden increases in the costs of the raw materials used, shortages, out of stock (hereinafter the "Cases of Force Majeure"), which prevent or reduce the manufacture or supply of the Products by CONTROLAB.
CONTROLAB shall inform the Purchaser with an order for Products in hand of the occurrence of having been made if a Case of Force Majeure arises.

Delivery times:

The delivery times specified in the CONTROLAB estimates, pro forma invoices and acknowledgements of receipt, although determined as accurately as possible, are indicative only and are not a firm commitment by CONTROLAB.
Under no circumstances shall a delay in delivery justify cancellation of the order placed with CONTROLAB unless the latter agrees in writing and in advance, nor shall it give rise to damages or any other compensation.
If the Purchaser cannot take delivery of the goods on the date they are made available, CONTROLAB shall take all steps to store them under the best conditions. The corresponding costs shall be paid by the Purchaser. This storage shall not change the date on which the goods are considered to have been delivered (in particular, the transfer of risks) and shall not extend either the guarantee, or the payment terms, and, more generally, shall not modify any provision of the Terms of Sale.
In the case of a change in the order, under the terms of the foregoing clause "Acceptance of Orders", the delivery times may be deferred at CONTROLAB's discretion.

Partial deliveries:

Unless there is a special mention on the order form, CONTROLAB can proceed with dispatch the articles available in its warehouses, the balance of the partial orders to be delivered at a later date.
The Purchaser shall be invoiced separately for each partial delivery which shall be paid on his due date. Delivery of the Products shall be considered as having been completed when all the partial deliveries have been made so that all the Products ordered by the Purchaser have been delivered to him. Any delay in carrying out the partial deliveries shall not release the Purchaser from its obligation to accept the deliveries remaining outstanding, CONTROLAB shall not incur cancellation of the order, nor payment of damages or any other compensation, in compliance with the provisions given in the foregoing clause "Delivery Times".
The risks for the Products delivered shall be transferred as the partial deliveries are made (in compliance with the provisions of the clause "Reserve of ownership clause / Transfer of risks" hereafter).

Payment terms:

A written invoice shall be issued for each delivery, the said invoice shall which has to be drawn up by CONTROLAB and which shall be payable to the CONTROLAB registered head office. Payment of any partial delivery becomes due on the due date specified in the invoice concerning each partial delivery and not on delivery of the remainder.
Purchasers who have opened an account with CONTROLAB shall pay the invoices within thirty (30) days from the date of delivery (even in the case of partial deliveries), unless a different agreement is indicated on the order form.
However, when it concerns new customers, the invoices shall

be entirely payable in full in cash when the order is placed. In any case, payment shall be made by cheque, accepted bill of exchange or bank transfer. The payment terms cannot be delayed for any reason whatsoever. Any amount unpaid by the Purchaser on the due date shall, ipso jure, and without any formal notice being necessary, notwithstanding article 1153 of the French Civil Code, incur interest for late payment, calculated from day to day, at a rate equal to one and a half times the legal interest rate in force, accruing up to the day the order is paid in full, without prejudice to other rights and claims by CONTROLAB to require the Purchaser to pay back all actual costs and additional costs incurred in collecting the debt, including legal fees. Furthermore, CONTROLAB reserves the right, at any time, particularly in the case where the Purchaser's financial situation changes, to request payment guarantees and the fulfilment of the Purchaser's commitments, even payment in full in cash at the time of placing the order. For the requirements of These Presents, the Purchaser undertakes to inform CONTROLAB within 24 hours in the event of deterioration in its credit situation, suspension of payments or court-ordered re-organisation or liquidation. Payment of the price in full shall be considered as having been effective and final when CONTROLAB has received the corresponding cheques or bills of exchange or when its bank accounts have been credited with the corresponding amounts.

Shipment of the Products:

In the absence of any precise instructions from the Purchaser, CONTROLAB shall select the method it considers the most appropriate for transporting the Products. In accordance with the foregoing clause "Price", any express or special shipment requested by the Purchaser shall be invoiced in addition. Prior to shipping the Products, the Purchaser must provide CONTROLAB and the carrier with the map, as well as the times and conditions for to get to the site where the Products must be delivered. In the event that any additional costs are incurred through difficulty in gaining access to the site, which in particular had not have been indicated to CONTROLAB and the haulier under the aforementioned conditions, these would be paid by the Purchaser.

Receipt of the Products:

It is up to the Purchasers not to accept a parcel before having checked the contents of the boxes and packing. Any complaints concerning visible defects, damage and the conformity of the Products on order (within the limits provided for in the foregoing clause "Drawing up Orders"), to be admissible, should be sent to CONTROLAB by the Purchaser, by registered letter with request for receipt, within a maximum of three (3) working days from the date the Product is delivered. Furthermore, the complaint shall be inadmissible if the reserves made are not entered on the delivery slip (carrier's copy). Should the Purchaser fail to comply with this procedure within the aforementioned time limit, the Purchaser shall be considered as having waived any complaint thereon. It is up to the Purchaser wishing to make a complaint, to provide all proof of the reality of the defects and anomalies noted. It should leave CONTROLAB every facility to observe these defects and to provide a remedy. The Purchaser shall refrain for having any third party intervene for this purpose.

Guarantee:

The Products sold by CONTROLAB are guaranteed against any hidden defect resulting from a defect in the material or the manufacture under the conditions hereafter.
The guarantee is valid for twelve (12) months, starting from the date the Product is delivered (including the case of partial delivery). In the event that problems arise during the guarantee period, the Purchaser shall send CONTROLAB a copy of the delivery slip, with the request for intervention, by registered letter with request for acknowledge. Any other compensation for any reason whatsoever is formally excluded. Repairs carried out under this guarantee, whatever their nature or the methods may be, shall not result in an extension of the guarantee period. This guarantee shall only be to the Purchaser's benefit and is limited to repairs of the parts it considers to be defective to be carried out in the CONTROLAB workshops or any other location designated by CONTROLAB. Any other part replaced shall become CONTROLAB's exclusive property. In the case where the repair work resulting from this guarantee leads to certain parts of the Product being replaced, only these parts shall be covered by a new guarantee. The cost of this guarantee can never exceed the cost of the Product from which the damage originated, determined by referring to the net price invoiced to the Purchaser and paid by him. This guarantee is the only one CONTROLAB grants to the Purchaser, he shall not be responsible for any other formal or tacit agreement. In particular CONTROLAB can never be held liable for any indirect damage, including, without this list being limitative, operating losses and loss of income in the following cases:
- breakage or damage resulting from the transport;
- poor handling;
- abnormal use or use not conforming with the manufacturers' instructions;
- bankruptcy or closure of CONTROLAB's suppliers or sub-contractors;
- damage resulting from overvoltage (max. +10%) frost, condensation, overheating or flooding; faults arising from outside events, whether they are accidents or due to wear of the Products;
- failure to maintain and/or repair the Products;
- modification, adaptation, intervention or repair work on the Products by a person not approved by CONTROLAB;
- visible anomalies covered by the foregoing clause 'Receipt of Products'.
Products called "consumables" are not covered by this guarantee.

Product returns:

The return of new Products or those under guarantee is accepted except for chemical Products and the said 'consumables' under the following conditions:
- formal written agreement in advance by CONTROLAB;
- the return of a Product never used by the Purchaser, in its new and complete state, and in its original packaging;
- return with charges prepaid to the CONTROLAB registered office
- return with deduction of a fixed amount of fifteen percent (15%) from the net price invoiced to the Purchaser and paid by it, particularly for restocking charges;
and subject to compliance with all the aforementioned conditions. A credit note shall be issued for the return, to be deducted by the Purchaser from future purchases.

Setting up and installation costs:

The Products are delivered to the Purchaser "carriage paid to ground floor of buildings where the laboratories are located". In the case where CONTROLAB is to set up or install the Products on the Purchaser's premises, the Purchaser should ensure, prior to delivery, that the premises are suitable for the awaited Product, in compliance with the technical caracteristics, the volume and weight, as indicated in the manufacturer's technical sheets. In particular, the supply of fluids and electricity should meet the requirements and safety standards and the specifications of the Products purchased. When access to the Purchaser's premises for installation is difficult (in the meaning of the foregoing clause "Shipment of the Products"), the Purchaser shall be responsible for having the Products installed by a specialised company and shall pay the cost thereof. The CONTROLAB technical service or commercial service must be specifically requested to install the Products on the Purchaser' premises.

Clause reserving ownership /Transfer of risks:

CONTROLAB shall retain ownership of the Products delivered

until the price thereof has been fully paid (according to the meaning in the foregoing clause "Payment Terms"), that the Purchaser owes for his deliveries (even in the case of partial deliveries). On the other hand, all the risks shall be transferred to the Purchaser as of the date the Product is delivered (even in the case of partial deliveries). It is up to the Purchaser to take out insurance to cover all possible risks which may affect the Products and particularly against fire and water damage.
The purchaser commits himself to inform the bailiff of the retention of ownership and to let CONTROLAB know of the seizure within 24 hours following it. The shall bear all the costs relating to the steps taken by CONTROLAB to recover its products, particularly the costs relating to the cancellation of the withdrawal of the seizure or the third party opposition.
Furthermore, the Purchaser shall abstain from pledging or transferring the ownership of the Products as guarantee.
In the case of either non-payment of part or all of the price on the due date for any reason whatsoever, or on any basis whatsoever, or in the case that the Purchaser's credit rating deteriorates, CONTROLAB may insist, and without any formalities, on the Products being immediately returned at the Purchaser's expense. The Products in stock on the Purchaser's premises or on the premises of any third party to which the Purchaser entrusted them, shall be considered as pertaining to the unpaid invoices. For the requirements of These Documents, the Purchaser undertakes to inform CONTROLAB within 24 hours in the case of a deterioration in its credit rating, suspension of payment or court-ordered compulsory/liquidation.
The deposits shall remain acquired by CONTROLAB and shall be successively charged to the difference of the monetary value of the Product taken back, then to the other unpaid CONTROLAB accounts. The balance shall be allocated to CONTROLAB as compensation.

Supply of Software:

CONTROLAB cannot be held liable for any bugs resulting from the environments in which its software is installed.
CONTROLAB does not guarantee either the computer softwares "features meeting the Purchasers" requirements, nor those which will run without interruption and without error. The Purchaser alone is responsible for selecting the hardware and software used to achieve a particular result, as well as the installation, operation and the results of the programs.

After-sales Service:

CONTROLAB shall provide the after-sales service (hereinafter "after-sales service") for its Products.
Nevertheless, CONTROLAB reserves the right to refuse to repair a product that is too old.
Any return of Products for after-sales service is subject to prior written agreement by CONTROLAB.
When drawing up an estimate for repair, the costs of disassembly/reassembly shall be paid by the Purchaser as well as the transport charges from the Purchaser to the CONTROLAB technical service.
This estimate shall be drawn up subject to anomalies observed during the Product's final test. The requests for interventions must be accompanied by a copy of the order form.
CONTROLAB guarantees the repairs and spare parts for three (3) months. The commercial terms and conditions negotiated on the supply of the products shall not apply to the provision of services and supply of spare parts, except with prior and written agreement. The CONTROLAB after-sales services can be provided either on the CONTROLAB premises, or on any third party premises designated by CONTROLAB, or at the Purchases place of work.

The invoices for the after-sales services issued by CONTROLAB shall cover:

- the time spent by the CONTROLAB technicians;
- fixed sums corresponding to the travelling costs, accommodation costs and the time spent by the CONTROLAB technicians (including overtime and/or other social services due to the technicians, according to the laws and regulations applicable in France and, in particular; according to the so-called Aubry Acts concerning the reduction of working hours;
- the parts provided by CONTROLAB within the scope of the after-sales service;
- land the costs of packaging, administration and transport of the Products.

In the event that the after-sales service shall be provided elsewhere than in metropolitan France, and in the event that the parts or Products which have not been used within the aftersales service, for any reason whatsoever, have not been all returned to CONTROLAB or the CONTROLAB technician when he returned to France, the Purchaser shall pay back the price of these parts or Products in full to CONTROLAB.
The parts sold outside an intervention shall not be taken back or exchanged.

Jurisdiction:

Any dispute or any lawsuit arising within the scope of the application of the Terms of Sale shall fall within the exclusive jurisdiction of the BOBIGNY Commercial Court.
Due to the nature of products and services commercialized by CONTROLAB, any reference to the implementation of the Vienna Convention of the 11th April 1980 will be de facto excluded in case of dispute or litigation.

Nullity:

If any one of the provisions of the Terms of Sale is declared null and void or inoperative, the validity of the other provisions and all the Terms of Sale shall not be affected or diminished.

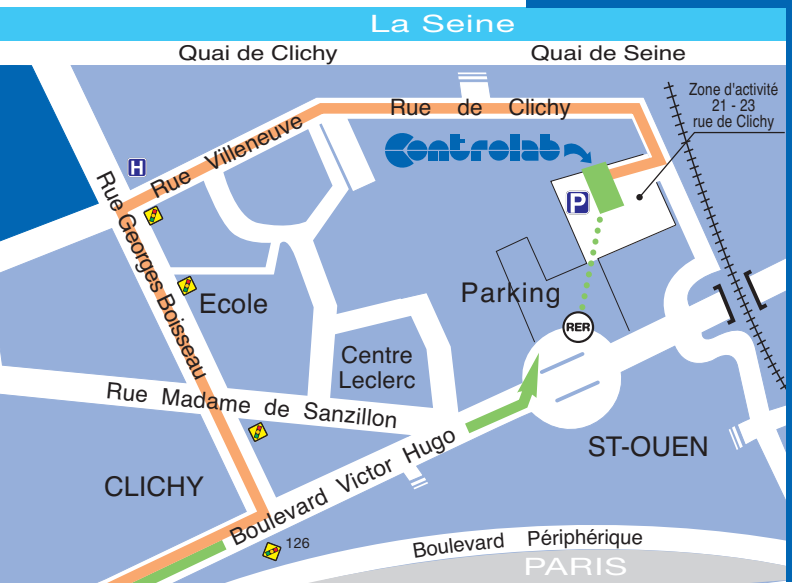
Controlab

21, rue de Clichy 93584 Saint-Ouen cedex FRANCE

Tel : +33 (0)1 49 48 94 50 | Fax : +33 (0)1 40 11 12 46 | Email : contact@controlab.fr

www.controlab.net

How to get to Controlab ?



Porte de Clichy
On Bd Victor Hugo at the No. 126 turn left on rue Georges Boisseau, then at the 3rd traffic lighton the right rue Villeneuve, rue de Clichy and Controlab Car park.

Either take Bd Victor Hugo far as the roundabout RER Saint-Ouen. Controlab Car park and door at the bottom right.

RER C train Gota «Station Saint-Ouen» Victor Hugo exit. Cross the car park RER then enter through screen door at the bottom right.

A showroom and a demonstration hall

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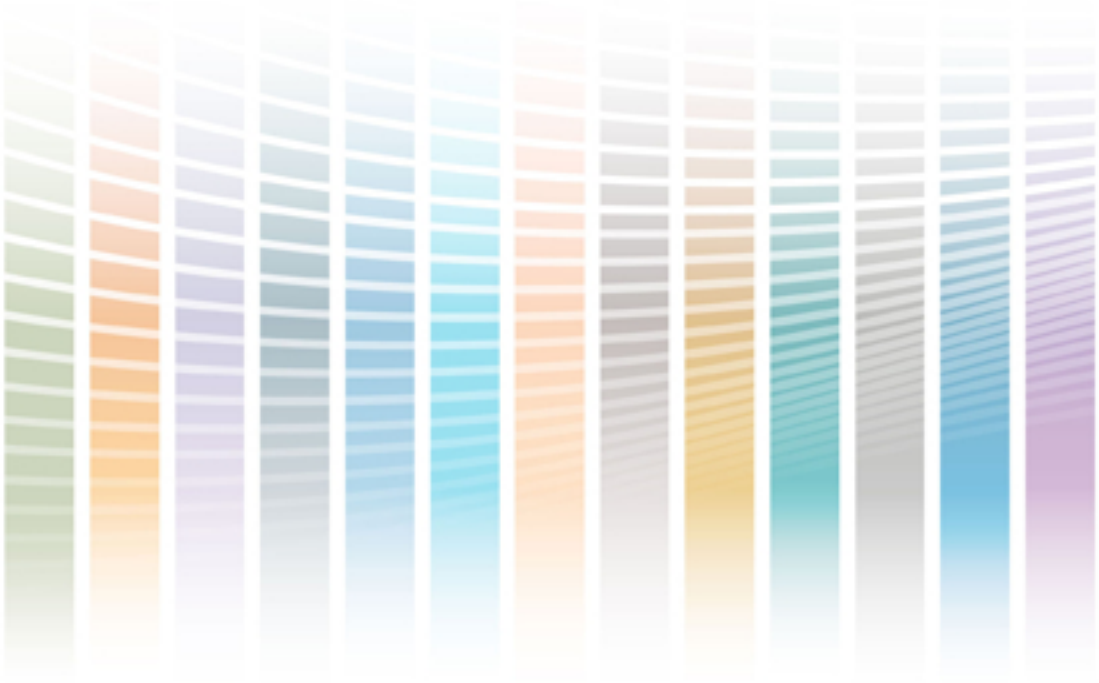
Find us on

www.controlab.net



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