MATÉRIAU INGÉNIERIE

INSTRUMENTS CATALOGUE

Designers of testing solutions

2013

MI-TECH™ POLYMERS & COMPOSITES RANGE

SODEMAT® TEXTILES & AUTOMOTIVE RANGE

MATÉRIAU INGÉNIERIE

Designers of testing solutions

WWW.MAT-ING.COM

SARL au capital de 7650 € , immatriculée sous le RCS Nîmes 435 279 237 00042
CE n° FR55 435 279 237 - APE 7490B

About us

Developing instruments dedicated to materials

Matériau Ingénierie unites several different activities into a single entity, with the aim of offering a complete range of products for the testing, measuring and characterisation of different materials.

Despite being a young company (created in 2001), Matériau Ingénierie represents more than 20 years of experience in the development of characterisation devices. Each measuring instrument is developed with three objectives in mind:

- Usability
- Reliability
- Easy integration into production

Skills to better support you

Matériau Ingénierie integrates the available skills needed to develop the measuring solutions that we offer. As our approach puts materials at the centre of our designs, our team consists of specialists in the field of materials (Doctors and University professors) and is completed by experienced technical engineers in signal conditioning and computing. In addition to developing measuring devices, our R&D support department works alongside research teams from partner organisations.

This partnership allows both researchers and clients to:

- Obtain quickly scalable prototypes of our devices.
- Modify certain devices according to the materials tested.
- Dedicate more time to conducting research

Some key dates

2001
Founding of Matériau Ingénierie

2005
Takeover of the JPS-MIE activities
Takeover of the Sodemat activities

May 2006
Integrating the Trimatec cluster

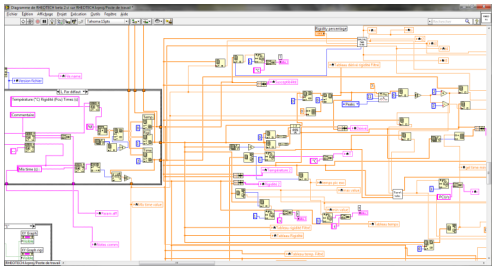
July 2007
Grouping activities on our site of Saint-Christol-lez-Alès (South of France)

August 2008
Creating brand Sodemat®

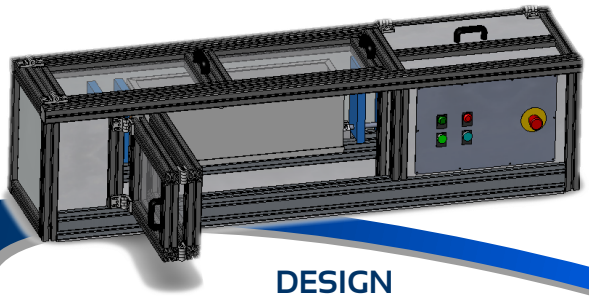
December 2009
Integrating the Pôle Tesla EIG

April 2013
Integrating the GRAM cluster

June 2013
Moving to Saint-Martin-de-Valgalgues to premises specially fitted



We use different IT development platforms with which we have gained solid experience in the acquisition and processing of signals.



DESIGN

IDEA

We develop specific benches specifications in partnership with industry or schools or universities. As an example, this bench of "Environmental Stress Cracking - Twist mode" for measuring the influence of a medium (pH, bacteria, water, etc.) by a slow torsion biased material.

PERFORMING

All our mechanical components are made in our workshop. This allows us to adjust our deadlines and gives us greater flexibility in the manufacturing of our specialist devices.

As an approved trainer, we provide training in different fields.

News 2013

NEW INSTRUMENTS & REDESIGN

Congotech

The measurement of the thermal stability of PVC method Congo red is long. But its design was adapted to stabilizing lead, which has a very specific behavior.

New stabilizers, less harmful, are used to this that involves a different behavior (release less frank and more diffuse). We have adapted the Congotech.

- **New software easier to handling**
- **Help tested (pH Paper status LED)**
- **Redesigned ergonomics** ■

Find new Congotech **page 17**

Martindale 4 posts

It is very difficult to innovate in Martindale. We simply rethink to make an ergonomic instrument, reliable and affordable!

Inspired by historical versions of Sodemat, this four positions version follows to version 2 positions dedicated to education.

- **Attractive design**
- **Touch interface**
- **Easy change between abrasion and pilling**
- **Robustness of the training and support plate**
- **Ergonomic** ■

Find new Martindale 4 posts **page 26**

Digital Bursting Tester

This version is based on the burst tester designed by Sodemat. We adapted our general design and made significant improvements:

- **Touch interface**
- **Software easier to use**
- **Electronic more precise measurements**
- **Easier maintenance** ■

Find new DBT **page 39**

INSTRUMENTS CATALOGUE - 2013

Complementary business activities

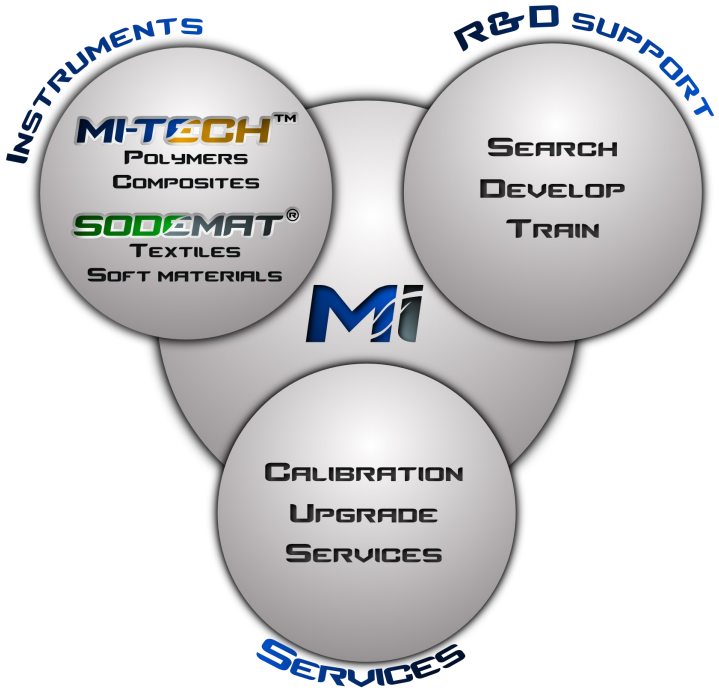
Matériau Ingénierie integrates essential skills to the development, the manufacturing, the expertise and the maintenance of the proposed measurement solutions. These skills result from different teams who joined us (JPS and Sodemat in 2005).
Each speciality measurement (products or services) is a commercial activity. All these activities are complementary: the development of a protocol specification to maintenance. Our mission is to decline our "know how to measure" for different needs at different levels of requirement, and for different applications.

Instruments
We purpose 2 ranges of intruments: MI-Tech, dedicated to polymers and Sodemat, dedicated to soft materials and textiles.

R&D Support
Thanks to our experience in instrumentation and materials, we offer various axes of accompaniments on skills that we have

Services
We offer full monitoring of instruments presented in this catalogue. The most important service is the calibration along with preventive maintenance and this, according to ISO 17025, our or other instruments.

In line with our mission to maintain your testing equipment, we offer upgrades to your specifications, on our old instruments, or from other manufacturers ■



Our products catalogue

The purpose of this catalog is to provide different instruments developed.
Each proposed instrument has a technical datasheet available on request. For readability, special benches are not completely presented, but documentation is available on request. Also, some control benches from Sodemat or JPS are absent because they are being updated or following the marketing shift of Matériau Ingénierie. We hope by this presentation giving the reader the most representative view of our activities. All measuring instruments are presented in alphabetical order and by brand ■

CONTENTS

Alphabetical and subject index 9-11

MI-TECH

Viscosity - Rheology 13-14
M3350 - Rheotech[TR]
Viscositech TXi

Mechanical Properties 15-16
Dart-Tester - Dynatech 1.5
Epsitech - Pendulum

Thermal and Thermomechanical Properties 17-20
Congotech - HDT-Vicat
Kinetech - P-Reactech
Retratech

Environmental and Durability Properties 21-23
EAC-Flexion - EAC-Torsion
Luminotech

Next ➲

CONTENTS

➲ *Next and end*

SODEMAT

Abrasion 25-26
Abrasimeter for Socks - Abrasimeter MIE
Abrasion/Pilling Tester - BTW - Martindale
Scratch Resistance Tester

Pilling and Hanging 27
Pilling-Box - RTPT

Wellness and Fitness 28-30
Wrinkle Angle Tester - Kink Angle Auto-Creasing
Hollow Cylinders Self Crease Recovery - Drape-Tester, simple version
Drape-Tester with mirror - Shapes Sock Control
Upper Body Shapes - Flexion Lenght - Trim-Tester

Thickness Measurement 31-32
Thickness Gauge 5084 - Thickness Gauge for leathers
Inductive Thickness Gauge - Thickness Gauge for Non-wovens

Permeability 33
Waterproof Resistance Tester
Blood Permeability Tester - QBT

Pollution and Dirt 34
Linting - Linting Blowing
Spray-Test

Tog 35
Tog-Meter for Fabrics
Tog-Meter for Duvets

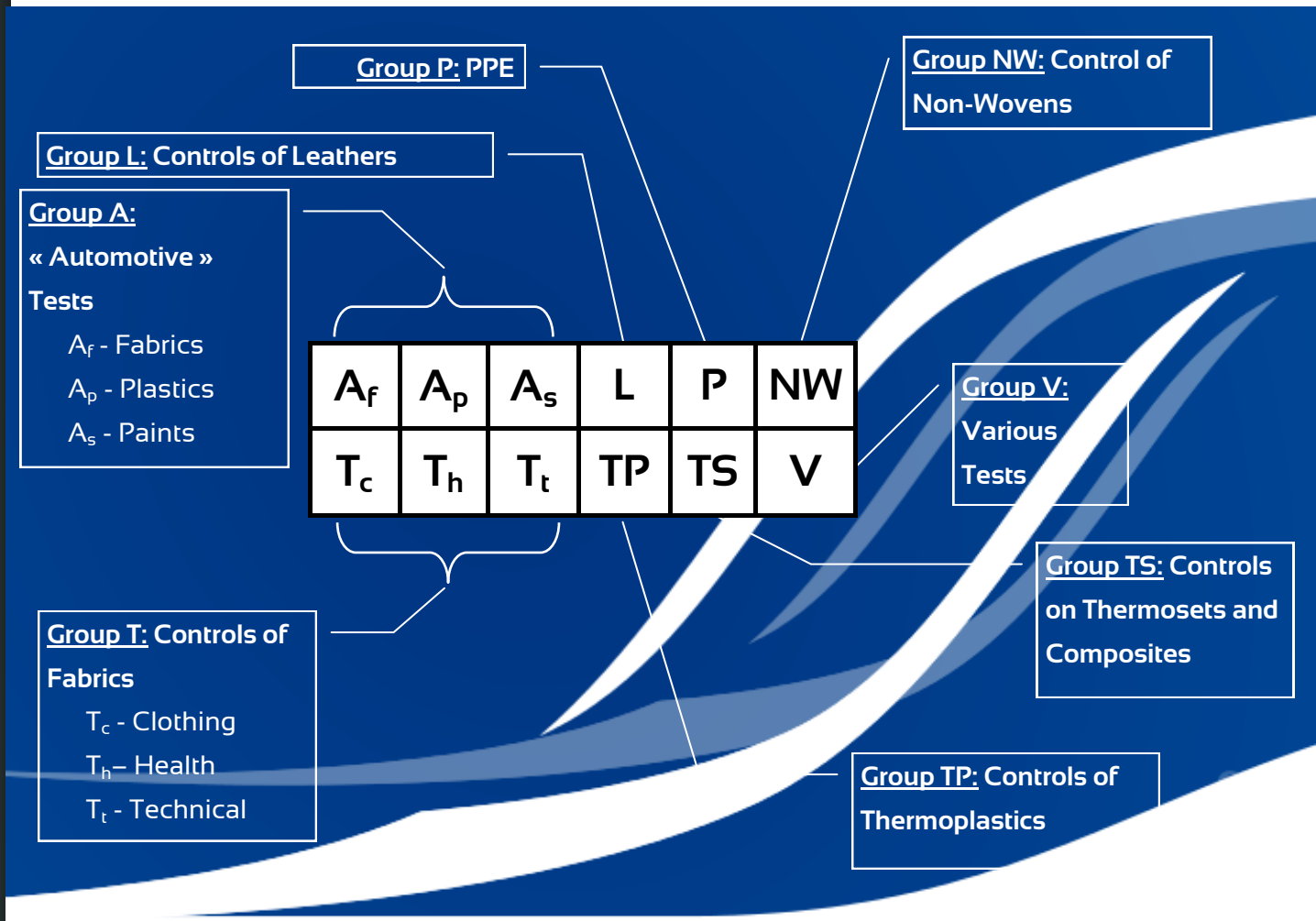
Sample Preparation 36
Sample Cutter for Weight per m²
Various Sample Cutters

Resistance and Elasticity 37-42
AgripTester - Compressive Force Scale - CoupTest
Elmendorf - Digital Bursting Tester - Esolab - Esotex
Indentation - Crimp-Tester - Mono-Impactor - Scrub-Tester
Stitch Damage Tester - Teethbrush Tester

Colour Fastness 43
Crock-Meter Manual Version - Crock-Meter Powered Operated Version
Crock-Meter « Automotive Textiles »

ALPHABETICAL AND SUBJECT INDEX

In order to simplify the search of measuring or control instrument relative to one type of material or a specific business sector, we purpose this thematic index:



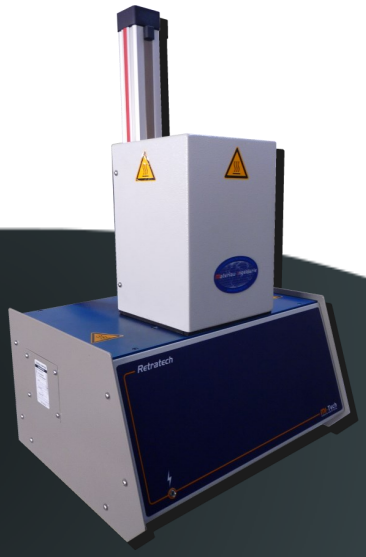
APPAREILS	GAMMES	T_c CLOTHING FABRICS	T_h HEALTH FABRICS	T_t TECHNICAL FABRICS	NW NON-WOVENS	L LEATHERS	TP THERMOPLASTICS	TS THERMOSETS/COMPOSITES	A_f AUTO./FABRICS	A_p AUTO./PLASTICS	A_s AUTO./PAINTS	P PPE	V VARIOUS TESTS	P.
Abrasimeter for Socks	Sodemat	■				■								25
Abrasimeter MIE	Sodemat			■		■			■					25
Abrasion-Pilling Tester	Sodemat	■	■	■		■								25
Agrip-Tester	Sodemat			■										37
Blood Permeability Tester	Sodemat		■											33
BTW	Sodemat			■					■					26
Compressive Force Scale	Sodemat	■	■	■										37
Congotech	MI-Tech						■							17
CoupTest QC	Sodemat			■								◢		37
CoupTest XP	Sodemat			■								◢		38
Crimp-Tester	Sodemat	■	■	■										41
Crock-Meter « Automotive Textiles »	Sodemat	■	■	■		■			■	◢	◢			43
Crock-Meter Manual Version	Sodemat	■	■	■	■									43
Crock-Meter Powered Operated Version	Sodemat	■	■	■	■									43
Dart-Tester	MI-Tech						■	■				◢		15
Digital Bursting Tester 20 Bar	Sodemat	■	■	■			■							39
Digital Bursting Tester 100 Bar	Sodemat	■	■	■			■							39
Drape-Tester, simple version	Sodemat	■	■	■	■	■								29
Drape-Tester with mirror	Sodemat	■	■	■	■	■								29
Dynatech 1.5	Mixte	■	■	■	■	■	◢	◢	■	◢	■	■	◢	15
EAC-Flexion	MI-Tech						◢	■						21
EAC-Torsion	MI-Tech						◢	■						22
Elmendorf Tear Tester	Sodemat	■	■	■	■	■	■							38
Epsitech	MI-Tech						■	■						16
Esolab	Sodemat	■												40
Esotex	Sodemat	■												40
Flexion Lenght	Sodemat				■									30
HDT-Vicat	MI-Tech						■	■						17
Hollow Cylinders Self Crease Recovery	Sodemat	■	■	■										28
Indentation	Sodemat		■						■					40

Next ➲

APPAREILS	GAMMES	T_c CLOTHING FABRICS	T_h HEALTH FABRICS	T_t TECHNICAL FABRICS	NW NON-WOVENS	L LEATHERS	TP THERMOPLASTICS	TS THERMOSETS/COMPOSITES	A_f AUTO./FABRICS	A_p AUTO./PLASTICS	A_s AUTO./PAINTS	P PPE	V VARIOUS TESTS	P.
Inductive Thickness Gauge	Sodemat	■	■	■	■	■	■	■	■	■				31
Kink Angle Auto-Creasing	Sodemat	■	■	■										28
Kinetech	MI-Tech						■	■						18
Linting	Sodemat			■		■			■					34
Linting Blowing	Sodemat								■					34
Luminotech	MI-Tech						■							23
Mace Snagging Tester	Sodemat	■	■	■		■								27
Martindale	Sodemat	■	■	■		■			■					26
Melt-Index M3350	MI-Tech						■							13
Mono-Impactor	Sodemat										■			41
Pendulum 4 joules	MI-Tech						■	■						16
Pendulum 50 joules	MI-Tech						■	■						16
Pilling Box	Sodemat	■	■	■										27
P-Reactech	MI-Tech							■						19
Quick Barrier Tester (QBT)	Sodemat		■											33
Retratech	MI-Tech						■							20
Rheotech[TR]	MI-Tech							■						14
RTPT	Sodemat	■	■	■	■									27
Sample Cutter for Weight per m²	Sodemat	■	■	■	■		■							36
Scratch Resistance Tester	Sodemat									■	■			26
Scrub-Tester	Sodemat	■	■	■		■			■					41
Shapes Sock Control	Sodemat	■												29
Spray-Tester	Sodemat	■	■	■	■	■			■					34
Stitch Damage Tester	Sodemat								■					42
Teethbrush-Tester	Sodemat												■	42
Thickness Gauge for Leathers	Sodemat					■								31
Thickness Gauge for Non-Woven < 20 mm	Sodemat				■									32
Thickness Gauge for Non-Woven > 20 mm	Sodemat				■									32
Thickness Gauge for Normal Non-Woven	Sodemat				■									32

Next ➲

APPAREILS	GAMMES	T_c CLOTHING FABRICS	T_h HEALTH FABRICS	T_t TECHNICAL FABRICS	NW NON-WOVENS	L LEATHERS	TP THERMOPLASTICS	TS THERMOSETS/COMPOSITES	A_f AUTO./FABRICS	A_p AUTO./PLASTICS	A_s AUTO./PAINTS	P PPE	V VARIOUS TESTS	P.
Thickness Gauge ISO 5084	Sodemat	■	■	■		■	■	■	■	■				31
Tog-Meter for Duvets	Sodemat	■	■	■										35
Tog-Meter for Fabrics	Sodemat	■	■	■										35
Trim-Tester	Sodemat								■					30
Upper Body Shapes	Sodemat	■												30
Viscositech TX*i*	MI-Tech							■						13
Waterproof Resistance Tester	Sodemat	■	■	■			■							33
Wrinkle Angle Tester	Sodemat			■										28



MI-TECH™

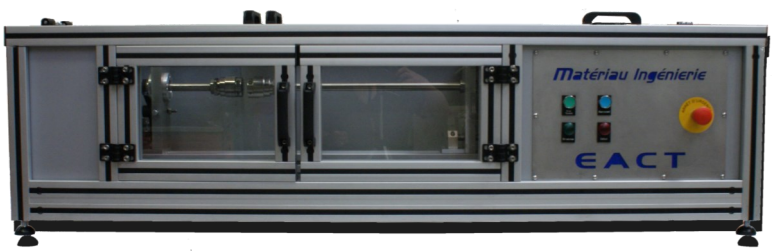
MI-Tech is the historical activity of Matériau Ingénierie. It is our "know how to measure" in the area of polymer materials: thermosets, thermoplastics & composites.

This is an original offer due to our various collaborations with companies, universities or leading expert schools.

All our devices have in common their usability, their ability to provide directly usable information and their robustness. These qualities enable our instruments to perform the control and/or the characterization into all types of laboratories (raw materials, quality control procedures, formulation, R & D).

They are also excellent teaching aids, they can highlight often complex to demonstrate phenomena.

MI-Tech also offers some measurement devices of SNE JPS/MIE polymers range (composites, thermoplastics and thermosets controls). The activities of the company SNE JPS has been taken over by Materiau Ingénierie in 2004 ■



M3350 — M014 — ISO 1133

Measurement of the thermoplastic melt flow

The **M3350** was developed in order to fully meet the different standards for determining the melt flow index of thermoplastics. It determines the MFR (Melt Flow Rate) and MVR (Melt Volume Rate) without detailed knowledge of the method.

An internal software manages the different options: the kind of test (low grade or high standard, multi-measurement), the volume, automatic calculation of the MFR (density hot-fill) and MVR, recall of the latest results ...

Different options are available:

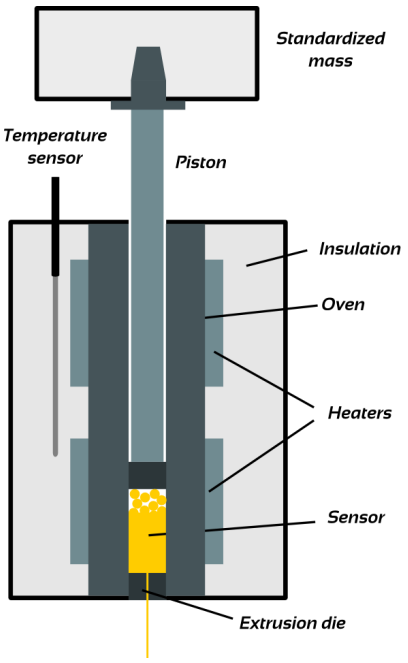
- Automatic up/down of masses;
- Standard or special masses;
- Software for data transfer.

NEW DESIGN!

Also complies with the following standards:

NF T51-120
ASTM D1238
ASTM D3364
BS 2782
JIS K7210
...

			TP		



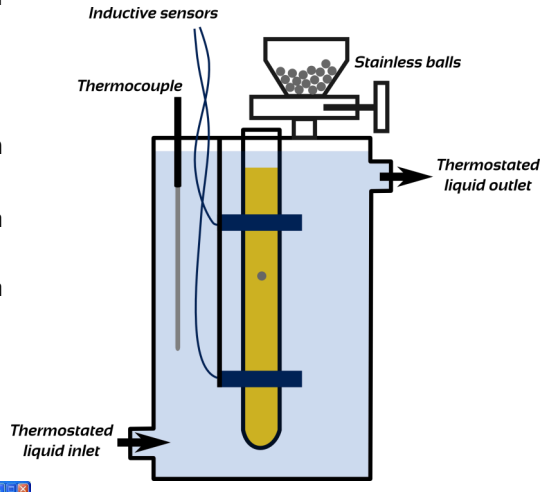
Viscositech TX$_i$ — M023 — ISO 12058-2

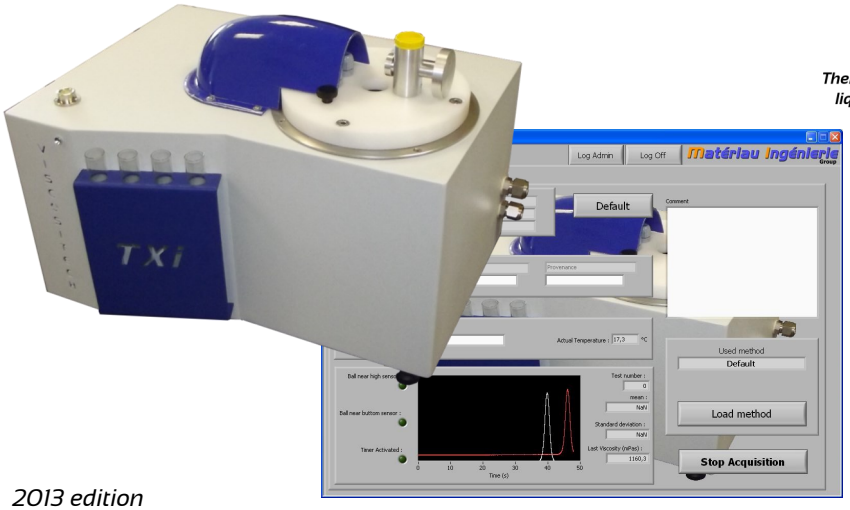
Measurement of dynamic viscosities of the resins, hydraulic oils, lacquers, etc.

Viscositech is based on the Noury method: the speed of a ball in a liquid is proportional to its viscosity.

- **Easy** to use;
- Robust (no mobile in contact with the liquid);
- **High accuracy.** His original measurement system provides quickly a value of viscosity.;
- A internal software manages options for the edition of a test report.

The **Viscositech TX** is assisted by computer and requires a thermostatic bath (supplied as an option).





				TS	

Rheotech^{TR} $_{QC}$ — M042 — ISO 2535

Rheometer dedicated to the control of the quality of the thermosetting resins crosslinking

The **Rheotech^{TR}** is the successor of Trombotech (Trombomat). This version is dedicated to the control of curable resins (and any other material having a pronounced liquid/solid transition phase) in laboratory and manufacture. It allows to determine reliably and without damaging the measuring system the characteristic points of a crosslinking resin.

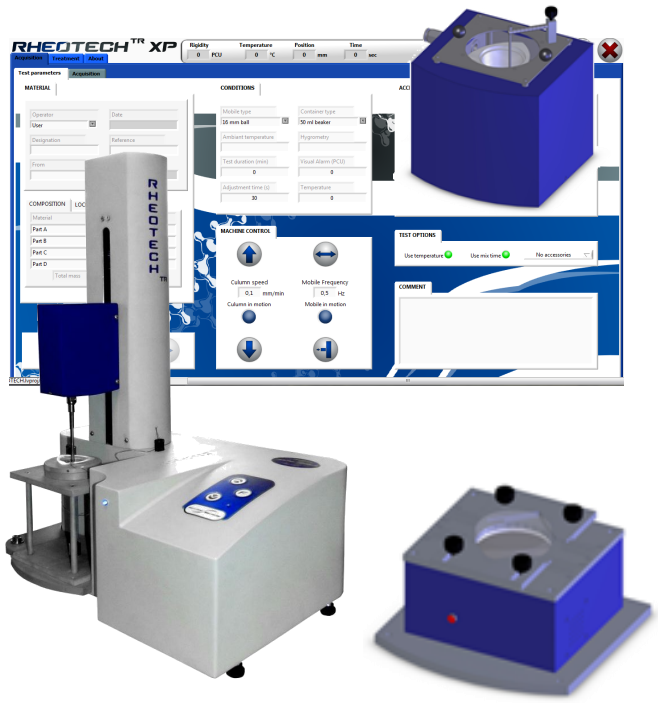
The results provided by the **Rheotech$^{TR}_{QC}$** are: the gel time (viscosity), conventional and thermal reactivity, the exothermic peak, and some other job characteristics.

This new version includes, among other innovations, and also a new design, the rise / fall of the sensor-driven PCs, fully integrated accessories (recirculation tank for better temperature control of the sample, for example).

				TS	

Rheotech^{TR} $_{XP}$ — M043 — ISO 2535

Rheometer dedicated to control the quality of the crosslinking thermosetting resins



The XP version is the advanced version of the Rheotech^{TR} proposed by Matériau Ingénierie. With his experience in this field, our development department has developed new products based on the rheometer range Rheotech^{TR}. This version "expert" to the research and development teams who need a more flexible and more accurate instrument as standard equipment.

This version comes with accessories for the characterization of resins in the form of thin layer, foam, etc. The accessories are : a thermoregulated plate (0°C - 80°C) by Pelletier effect, a precise positioning sensor integrated in the measuring « head ». Other accessories are planned in the coming months.

				TS	

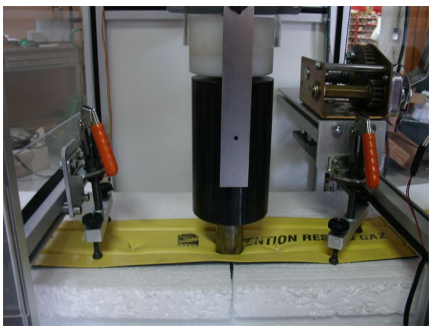
Dart-Tester — M030 — NF T54-109 / DIN 54841-5

Puncture resistance by falling striking pin

The Dart-Tester is an equipment for the evaluation of:

- the penetration depth of a punch;
- the cracking behavior of a rigid plate (plastic, composite, etc..).

The Dart-Tester was originally developed to test the hard covers cables and the pipes (sanitary, drinking water supply, gas, etc.) used as visual alarms.



The safety of the user was, in the design of this bench, important. So a controller manages all the operations (open door sensor, magnet of the punch permanent blocking, automatic ascent of the punch, etc.).

				P	
			TP	TS	

Dynatech 1.5 — M039 — ...

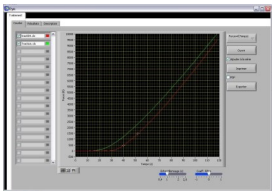
Universal Testing Machine, single column, 500 daN

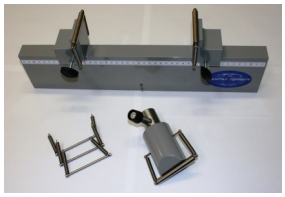
Thanks to our experience of materials, teaching, and modernization of universal testing machines, the Dynatech 1.5 is the ideal tool for quality control and education (technical education).

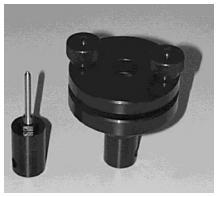
It is indeed an easy to use and powerful version. A test and its treatment does not require extensive training, which makes the 1.5 Dynatech easily integrated into a training program or a quality control laboratory.

The software was developed to best minimize the setup and the test treatment times. The software is made by technicians for technicians.

These features make the Dynatech 1.5 an unique tension/compression machine. Accessories are without limitation, our factory can design and manufacture optionnal tools you need.





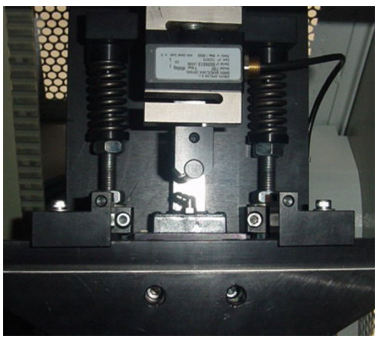


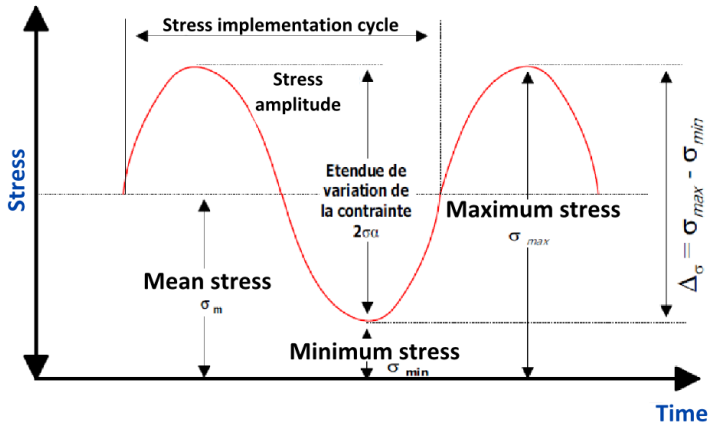
A_t	A_p	A_s	L	P	NW
T_f	T_h	T_t	TP	TS	V

Epsitech — M012 — ISO 13003

3-points/4-points bending fatigue tests

Indispensable tool for the deepening knowledge of materials performance in reinforcements, the Epsitech (single or multiple positions) is present in many research centers and universities. It allows testing of several million cycles up to 25 Hz without tying a universal testing machine.





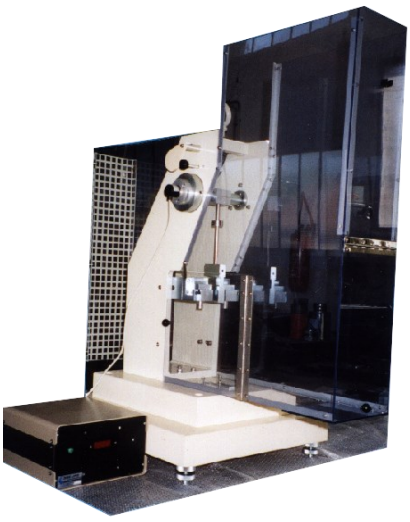
			TP	TS	

Pendulum — M035 — ISO 179, ISO 180

Impact pendulum: Charpy, Izod, other

The bench can produce impact resistance tests pendulum impact:

- **Charpy**
- **Izod**
- **Impact/traction**



We propose two complementary models:

- 4 joules pendulum (M027)
  Pendulum available: 0.5 J, 1 J, 2 J, 3 J. and 4 J.
  Mounts available: Charpy, Izod & impact/traction.

- 50 joules pendulum (M028) - Combined Version, as pendulums version "4 joules" can be adapted
  Pendulum available: 0.5 J, 1 J., 2 J., 3 J. and 4 J. (down position) and 5 J. 7.5 J, 15 J, 25 J and 50 J.
  Mounts available: Charpy and Izod impact / traction

Models available in single or computerized version.

Also meets standards: **ASTM D256, ISO 148, etc.**

			TP	TS	

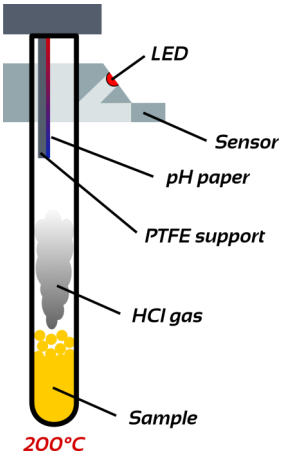
Congotech — M010 — ISO 182-2

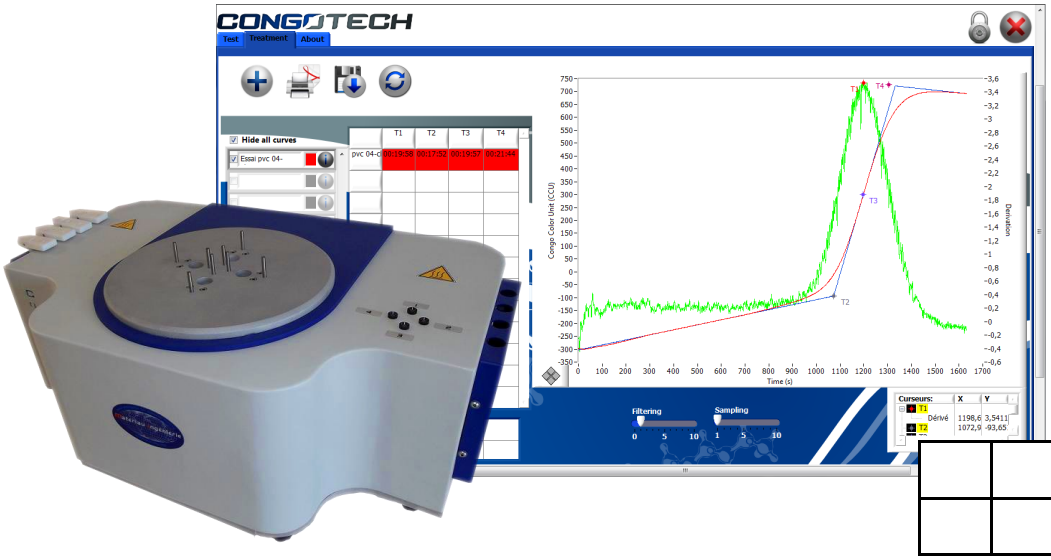
Thermal stability of PVC

This is most "industrial" control method of the thermal stability of PVC because it is high usability and its robustness.

The Congotech is present in all the leading European companies of PVC. Software (supplied as standard) allows the acquisition and the treatment of results.

A PVC sample placed in a test tube is subjected to temperature. A pH paper is placed in the test tube facing an optical measurement cell which continuously measure the color change (red to blue). The software enables the acquisition and processing of measurement points (mainly point deshychloruration).





			TP		

HDT-Vicat — ISO 75 - ISO 306

Temperature of deflection under load and penetration Vicat

Simple version (M019)

Computerized version (MO24)

The HDT-Vicat allows for testing of HDT (heat deflection temperature under load) and Vicat (softening point under load). These two tests, in addition to quality control, are simple ways of knowing the maximum operating temperature of polymeric materials.

Each device can be configured as needed:

- **Simple version** with a display and test configuration (thermal ramp, alarm, detection limit, etc.) panel.
- **Computerized version**, where the test monitoring and the data acquisition are performed by computer.
- Option **HDT** and/or **Vicat** - The measuring heads are interchangeable.
- Automatic cooling option.
- From **1 to 3** positions.

All tests can be performed simply, safely (protective covers, alarm configurable for oil temperature, etc..) and with a maximum measurement performance.

			TP	TS	

Kinetech | M013 | ISO 13003

Transition characterization of composites and resins

The Kinetech is a system for measuring the glass transitions of composites/resins and the cross-linking kinetics of the prepregs (gelation - vitrification) .

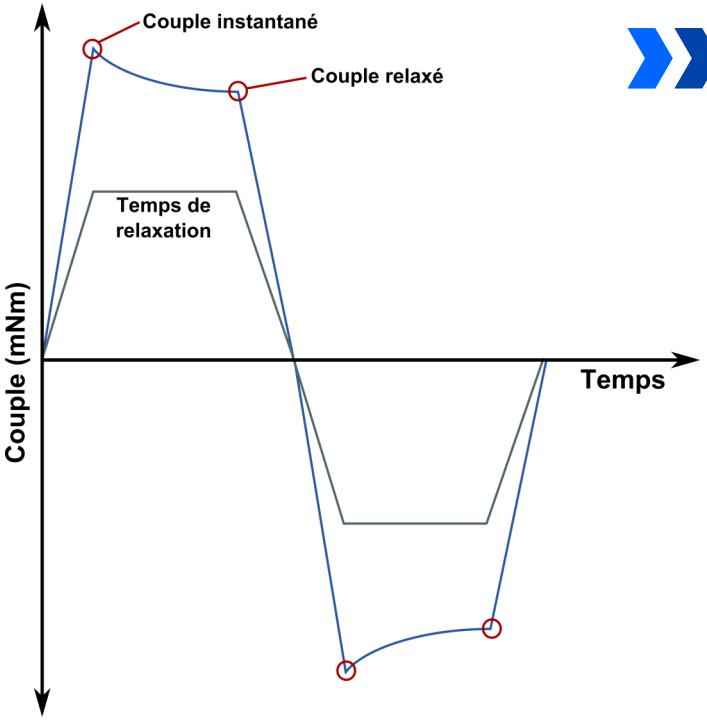
Ubiquitous in the field of composites, the measuring principle is simple: a sample is subjected to torsion/ relaxation brought to temperature in a furnace. The torque transmitted by the specimen is measured throughout the test.

The Kinetech allows:

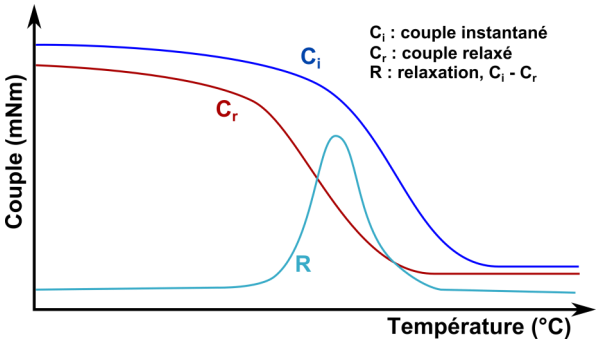
- The acquisition of the measuring points performed by a dedicated software;
- To display results as curves. Significant points are calculated.
- The obtention of essential informations on the level of processing, the quality of the process, the quality of the composite material before processing, etc..

The Kinetech is the only rheometer using the study of stress relaxation to determine the transitions in materials.

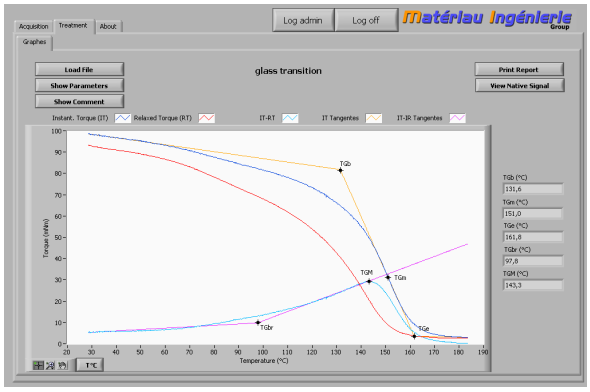
A/ A twist is imposed on the sample



B/ Curves



C/ Data processing (software)



D/ Results (test of glass transition)

*Tg_d: start time of Tg**

*Tg_m: mean time of Tg**

*Tg_f: end time of Tg**

Tg_M: maximum time of relaxation

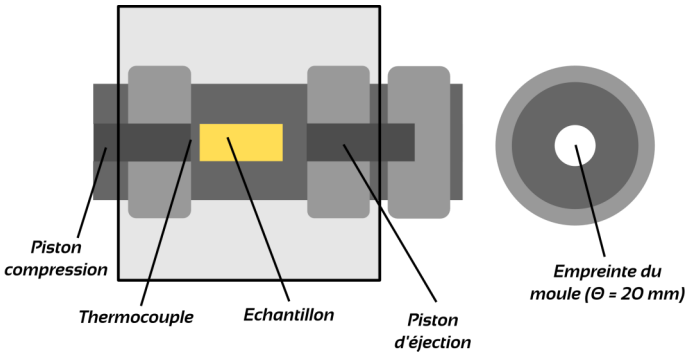
				TS	

*Tg = Glass transition temperature

Thermal reactivity of SMC/BMC

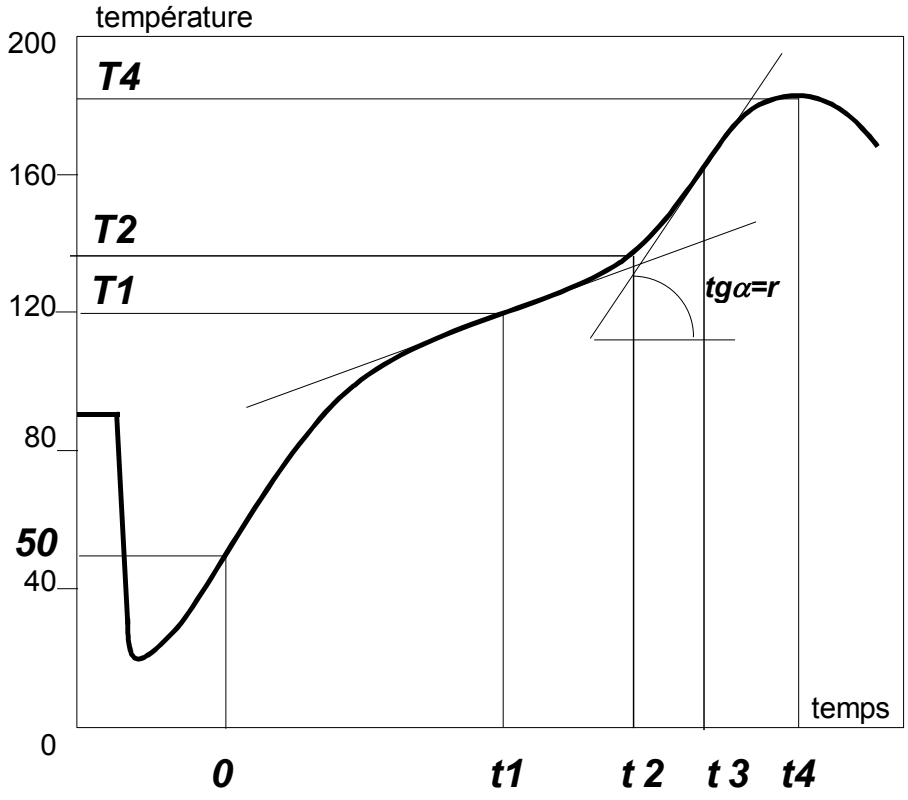
The P-Reactech is the only device enabling simple reactivity control and freshness of **SMC/BMC**.

A sample of material is compressed under controlled temperature. At the same time the dedicated software allows acquisition of the exothermic temperature by a thermocouple immersed in the material.



It comes to measured continuously in the defined operating conditions the temperature rise occurring in a sample of **6 cm^3 heated to a given temperature (usually 140 ° C)** and subjected to a pressure of **10 bar**. A specific software ensures the acquisition of points, traces the curve and calculates the remarkable points, allowing statistical calculations on different samples of the same batch.

				TS	



Example of curve obtained via the P-Reactech software supplied as standard.

Caption:

50°C
Starting point of the measurement (determined by the standard) which will be calculated from the various other points.

t1(s) **, T1(°C)**
Decomposition initiation time.

r(°C.s^{-1})
Conventional reactivity i.e. the maximum rise of temperature.

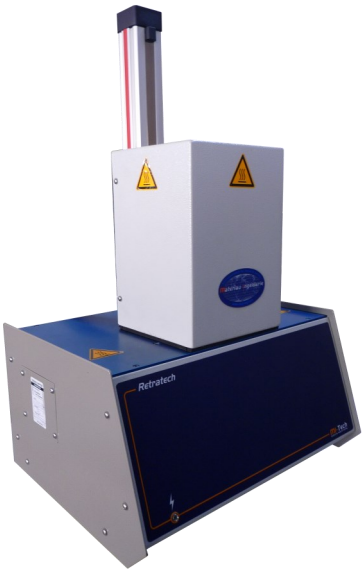
t2(s)
Gel time.

t3(s), T3(°C)
Maximum reactivity.

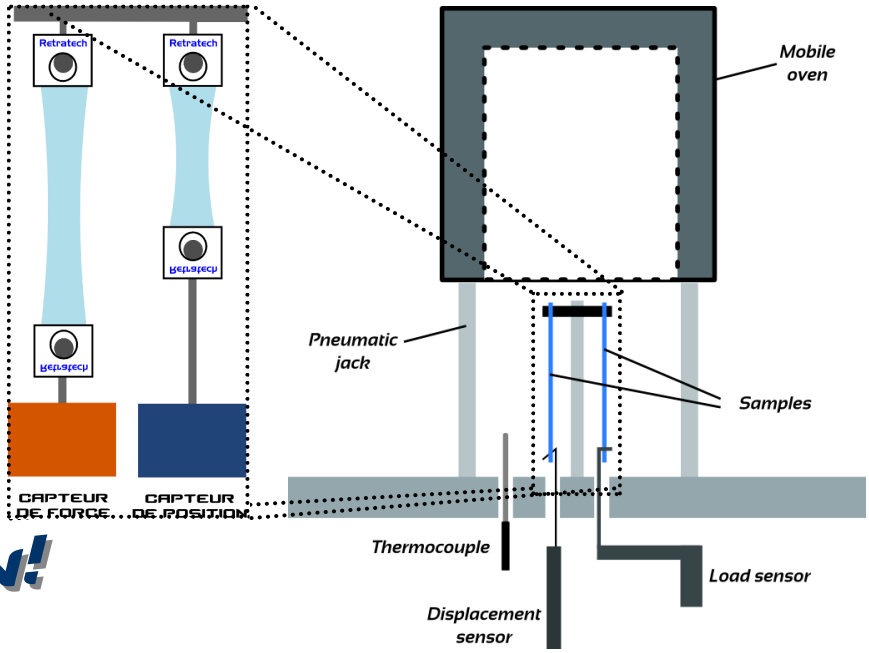
t4(s), T4(°C)
Exothermal peak.

Retratech | M013 | ISO 14616

Characterization of heat-shrinkable films (PE, PP, PET, PVC, complex, etc.).



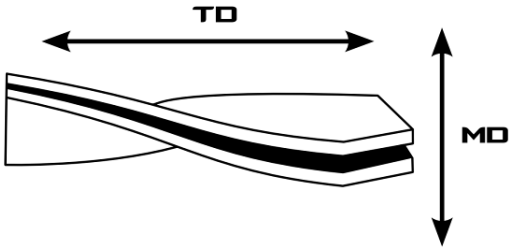
The Retratech allows a complete characterization of the processability of shrink films. Two samples of film are subjected to temperature (isothermal or ramp). They are attached to sensors that measure the force and the displacement.



NEW DESIGN!

Focus on the shrinkage

Shrinkage is primarily due to the relaxation of the extended amorphous chains during the glass transition and the crystals orientation during the melting of the polymer. The retraction force will be even greater than the heat treatment is performed in the vicinity of the characteristic temperatures.

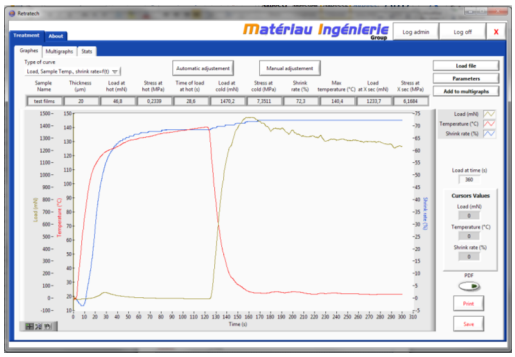


Phenomena governing the process of withdrawal are related to the conditions of implementation and to the type of polymers used. The microstructure is complex. Two crystallization phenomena occur following depending stress levels applied in the both direction: *MD* and *TD*.

The Retratech, an indispensable tool for quantifying the performance of heat-shrinkable films

The acquisition of measurement points is performed by a dedicated software. It displays the result as a curve on which the feature points are calculated. It is present in plastics manufacturers, producers of these films and the big "consumers" such as the food and drink industries.

The Retratech available in 2 and 4 positions.

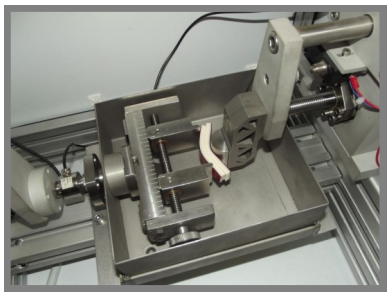


			TP		

EAC-Flexion M041 ISO 22088-1/2/3/5/6

Bending bench for durability tests

The EAC-Flexion is a bench designed to achieve reproducibly monotonous 3-point bending tests on standardized samples.



Speed of displacement is included in a range from 0.1 µm.min^{-1} to 2 mm.min^{-1}. With a small footprint, and placing it on a lab table , it is quite possible to increase the number of EAC-bending and easily increase capacity and laboratory tests.

Its primary purpose is the execution of 3-point bending tests:

- The sizes of the eligible specimens are:
  - Lenght: 30 < L < 170mm
  - Width: 5 < l < 30 mm
  - Thickness: 1 < th. < 30 mm

- The specimen can be easily subjected to the environment of the choice of the operator, thanks to a removable stainless steel tank (180x190x70 mm). This tank allows you to submit the sample to the various aggressive environments (bases, acids, sea water, etc..). Temperature control (150°C max.) is possible with external systems through access into the body.

- The advantages of the EAC-Flexion make it a versatile instrument:

  - The load cell is interchangeable;

  - The effective travel (100 mm) is important for this type of test;

  - The jaws, like universal testing machines are interchangeable;

  - The software is adapted to the analysis of durability testing, and can, by simple specification be tailored to your needs.

- The dimensions of the EAC-Flexion are compatible with installation on a laboratory bench: width of 1 00 cm, depth of 49 cm and height of 50 cm.

- The frame is a set of aluminum profiles designed to provide maximum rigidity.

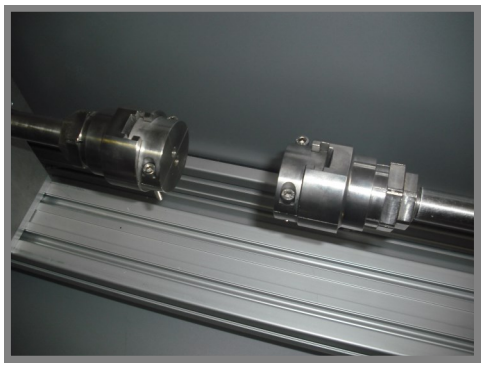
Other types of tests are possible, according to the same speed ranges: tensile, compression.

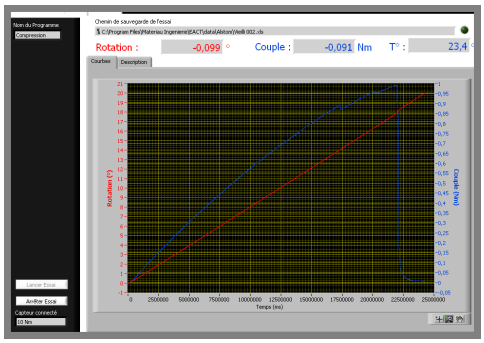
			TP	TS	

EAC-Torsion — M040 — ISO 22088-1

Cycling or monotonous torsion (torsion modulus, Poisson ratio ...)

The EAC-Torsion was designed to be a torsion test (11 Nm max.) wihh an extremely wide range of speed (0.01°.h^{-1} to 1000°.min^{-1}). It is essential to control the performance of composite materials, and the determination of some parameters used in strength of materials and software simulations.





It allows you to experiment by free torsional, twisting/tension, or cycling/relaxation. The distance between the jaws may also reach 300 mm depending on the materials to be tested.

The modularity of the EAC-torsion gives it three uses:

- Comparison of the performances of materials (formulation, fiber type/ratio, quality of surface treatment) working at different rates of stress, high in the first approach, slow to a finer differentiation.

- As a machine for characterizing the performance under shear during aging. For this, a tank adapted to the EAC-Torsion allows you to place the sample in a controlled environment (water, acidic / basic solutions ...) and observe the evolution of the properties according to the progress of degradation. So this intrument allows for accelerated aging tests in a realistic environment, which prevents the generation of noise degradation phenomena that can occur during conventional accelerated aging tests.

- As a fatigue bench, by performing charge/discharge cycles. It allows then to estimate the lifetime of a material subjected to cyclic loading.

- The acquisition of measurement points (torque and displacement) is performed by a dedicated software. It displays the result as a curve on which the feature points are calculated.

			TP	TS	

Luminotech

M..

Tube Luminometer for biodegradability tests

The Luminotech BT uses the principle of the luminescence measurement.

Luminescence is the emission of a light photon when disabling an excited molecule to a lower energy state. This phenomenon is increasingly used as an analytical method by implementing a couple photomultiplier / luminescent reagent.

This technology differs fluorimetric and spectrometric methods primarily because it requires no light absorption, or a prior measurement of the electromagnetic excitation. It usually can enjoy a high sensitivity, fast response and proves easy to use.

We offer a luminometer version specifically adapted to the quantification of biodegradation of a compound: a polymer, a glass, etc..

Our partnership with Yelen allows us to provide reagents suitable for materials on which you want to analysis.

Focus on the measurement of biodegradation of polymers by enzymatic test

During the biodegradation, enzymes (depolymerases) degrade the polymer chains by a depolymerization reaction. They allow to depolymerize the polymer in monomers that are, themselves, consumed by bacteria.

Step 1

Polymers + Enzymes = Monomers

The enzyme test is based on this phenomenon. Few grams of crushed sample are placed in an enzymatic medium. This medium contains a cocktail of enzymes but does not contain bacterial populations. Thus, the enzymes will degrade the polymer, causing the appearance of monomer molecules but these, without the presence of bacteria, will remain as in the middle.

By measuring these monomers, the progress of biodegradation can be observed.

The assay is performed by chemiluminescence. A luminescent reagent is introduced into the medium and reacted with the monomer, emitting photons. The quantity of photons emitted is measured by a photosensitive sensor. This signal is measured regularly. In parallel, a sample (water without enzymes) is white to reflect the effect of hydrolysis "chemical".

Step 2: dosing

Monomers + Reagent = Photons

			TP		

Complementary instruments

EAC-Flexion P.21
EAC-Torsion P.22

SODEMAT®

The activity Sodemat® was established in 2005 and is the results from the integration of a company with the same name, located in Bréviandes.

Sodemat® was recognized since 1979 as an innovative company in the field of test benches and control of soft materials, and textiles in particular.

Sodemat has managed over the years to diversify its core business by offering test benches on specifications but also means of control related to the textile areas: non-woven, leather, health and automobile.

Our range Sodemat ® also offers the textile and automotive control/quality ranges of JPS MIE. The activities of the company JPS NIE were taken over by Material Engineering in 2004.

Initially installed in Bréviandes, this activity was consolidated on the main site of Saint-Christol-lez-Ales in 2007, date from which some products have been excluded from the sale to refocus our technical products offer.

The Sodemat® activity covers controls and tests of the following areas:

- clothing textiles
- health and hygiene textiles
- non-wovens
- leathers
- personal protection equipements
- automotive (textiles, complex, paints, plastics and composite materials).

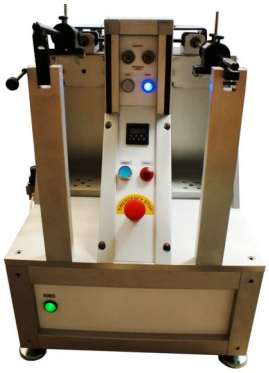
www.sodemat.fr

Abrasimeter for socks

S043

EN 13770

Abrasion of footwear



The Abrasimeter for socks has been specifically designed to solve the problem of measuring the resistance of socks to wear and tear, when stretched to an extent equivalent to that of being worn. The models are interchangeable, there being a model for each sock size.

Sizes available range from 24 to 44.

The Abrasimeter for socks is designed to carry out two tests simultaneously.

			L		
T_c					

Abrasimeter MIE

S147

PSA/Renault D44 1073

Abrasion and wear for automotive

NEW DESIGN!

The Abrasimeter MIE determines the wear resistance of textiles (woven, knitted, composite, plastic or coated textile lining skin) by friction. It bears the name of the company who designed it for more than 20 years (Mécanique Industrielle d'Enghien).
The proposed version of the automatic features uses tissues with the control voltage.

Point tags:

- Robust design for continuous operation
- Simple & fast implementation
- Easy maintenance
- Two versions are available 2 positions and 2x2 independent positions.
- Autoscroll with tension control

Also meets standards: Benz PWT 7332

A_t			L		
		T_t			

Abrasimeter & Pilling Tester

S181

Pedagogical highlight on abrasion and pilling phenomena

Instrument designed to be an educational tool of the first order to highlight the phenomena of abrasion and pilling on fabrics.

Its simple and fast operation allow for increased testing during the same lab session.

The Abrasion-Pilling comes with pads abrasion and pilling, and a starter kit (washers abrasive cloth and cork washers).

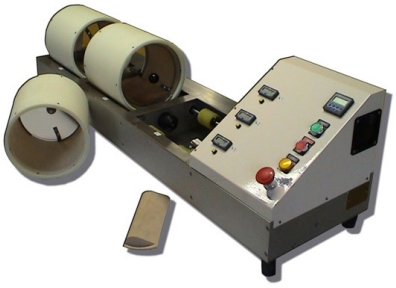
			L		
T_c	T_h	T_t			

BTW Tetrapod

S167

PSA/Renault D44 1237

Wear resistance of textile floor



BTW tetrapod simulates on three test positions the wear generated by the passage on textile floor. The system that wears is a tetrapod placed inside drums which is located on the wall of the plated fabrics to be tested. A "nose-to-work" can also be introduced.

The rate is fixed (50 RPM). Each drum has a tachometer to separate launches.

A unique version: 3 positions.

A_t					
		T_t			

Scratch Resistance Tester

S173

PSA/Renault D42 1775 & D44 1900

Resistance to scratching and polishing

This device consists of a multi-function stand with two adjustable options, one for carrying out scratch abrasion tests using the Renault D42 1775 method and the second for conducting polishing tests using the PSA/ Renault D44 1900 method.

The components to be tested can have either a smooth or rough surface, or possibly decorative coatings such as paint.

Also meets standards: PSA/Renault D44 1221.

	A_p	A_s			

Martindale

S177 - S185 - S186

ISO 12947-1 & ISO 12945-2

Abrasion and pilling of all kinds of textile structures

NEW DESIGN!

This machine is ideal for determining the abrasion resistance of all types of fabrics and leathers used for footwear, upholstery, clothing, gloves and many other products. The Martindale method is the international benchmark for wear fabrics. Evaluation of resistance to pilling is also possible on Martindale (optional).

Martindale can also be used to test the abrasion resistance of rubber gloves, plastic and rubberized fabrics by substituting standard with abrasive grit.

Many accessories are available (abrasion socks, EN 388, and others on request).

3 versions available: 2, 4 or 6 positions.

Also meets standards: **ISO 17076-2 - ASTM D4966 - ASTM D4970 BS 3424 pt24 - BS 5690 - EN 388...**

A_t			L		
T_c	T_h	T_t			

Pilling & Hanging

Pilling-Box

S047, S091, S092, S093 — ISO 12945-1 - BS 5811

Pilling test on fabrics

The Pilling Box is:

- **Innovative design**;
- An **extremely quiet**;
- A movement protected by a Plexiglas door with touch boxes. (in **accordance with the CE safety standards**).

The tissue specimens are fixed on polyurethane tubing and undergo a cycle pilling cube cork lined. After this test, assessed visually, in consideration predetermined conditions, the result of the test. The Pilling Box is available in 2 and 4 boxes.

Option available:
Fraying option, including a variable speed (adaptation to the standard speed), one game lined cork boards and blades, 1 set of specific sleeves.

Also meets standards: IWSTM 152 - Marks & Spencer.

T_c	T_h	T_t			

RTPT

S047 & S092 — ISO 12945-1

Random Tumble Pilling Tester - Pilling and fuzzing characteristics of textile fabrics

The level of pilling is assessed by visually comparing the pilling of samples processed in the device with examples illustrating the different stages of pilling. The test consists of attaching the woven or knitted fabric samples to the wall of a cylindrical chamber covered with a neoprene strip. The device is equipped with a compressed air injection system that compresses the air in the cavities to prevent the samples from sticking to the walls.

					NW
T_c	T_h	T_t			

The RTPT is available with 2 or 4 cavities.

Also meets standards: NF G07-121 - DIN 53867 - JIS L1076 - ASTM D3512

Mace Snagging Tester

S173 — ASTM D 3939-03

Tendancy of fabrics to snag

This device is designed to evaluate the resistance of flexible materials (woven, knitted, composites, leather and TEP) to snagging.

The test consists of placing the sample on the rotating protective tubes. Sharp points strike the fabric in rotation on a cylindrical support (covered in felt). This action causes threads to be extracted, thereby allowing the textile to be assessed.

This test is ideal for furnishing fabrics, and for fabrics used in the automotive industry as it reproduces the significant plucking which can be caused to textiles, e.g. by the claws of a dog.

Also meets standards: PSA/Renault D44 5600

A_t			L		
T_c	T_h	T_t			

Other instruments: Abrasimeter&Pilling-Tester (p.25), Martindale (p.26), Linting (p.34)

Wrinkle Angle Tester

S161

PSA/Renault D45 5331

Tendency to fold seat upholstery

Wrinkle angle tester was developed for the French automotive equipment. It allows testing composite filling materials. This method is intended to describe a procedure to quantify the tendency to creasing of composite filling materials.

The test consists of slowly collapse a sample on itself and to keep the material in which the angle shape.

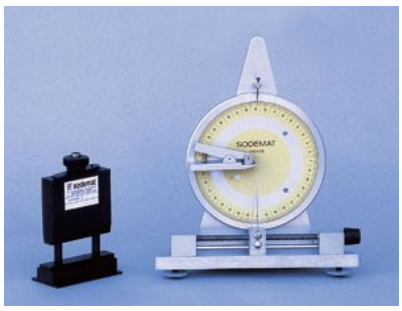
A_t					
		T_t			

Kink Angle Auto-Creasing

S049

ISO 2313 - EN 22313 - AATCC 66

AATCC Method



Self-creasing is the ability of a fabric to remove wrinkles itself. Sodemat offers two versions with normative own correspondence:

- Auto-creasing residual angle
- Auto-creasing with hollow cylinders

With this version is self-wrinkle recovery as measured by the angle formed by the ends of a test piece of fabric folded and previously subjected to a force of 10 N. This method is not suitable for thick fabrics, or with little dress, as well as fabrics made of wool or wool blend. In these cases, the hollow cylinder version is preferred.

T_c	T_h	T_t			

Self Crease Recovevery

S015

NF G07-125

With Hollow Cylinders

NEW DESIGN!

Self-creasing is the ability of a fabric to remove wrinkles itself.

A specimen defined dimensions is introduced into a hollow cylinder. It is then subjected for some time to the static force of a sledgehammer. Then it is placed in a vertical position (relaxation). The gradation is then made by comparison with photographic standards.

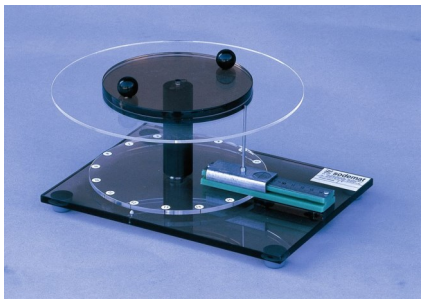
T_c	T_h	T_t			

Drape-Tester

S052

NF G07-109

Simple version for the control of drapery fabrics



The "drape" or "falling" of a knit or a tissue is an important characteristic that determines in part the hand of a fabric and the "look" of a garment such as a skirt, a dress, etc..

The Drape Tester provides an objective and reproducible measurement.

It is proposed in the version as simple as possible, so the more affordable, without any concession to the accuracy, timeliness or accuracy of the measurements.

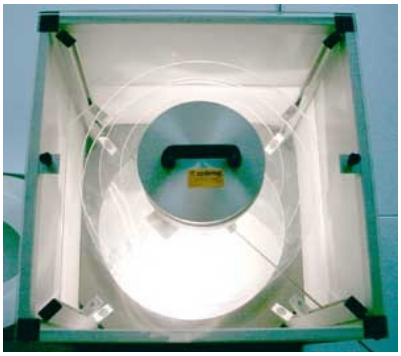
			L		NW
T_c	T_h	T_t			

Drape-Tester

S059???

ISO 9073-9

With miror



Measures the ability of a non-woven fabric to deform when it is suspended.

A circular sample of nonwoven is maintained horizontally between two disks of a diameter smaller than that of the sample. The test is crease around the support disk.

The shadow of the draped sample is projected onto a ring of paper of the same size. The outline of this shadow then draw on paper.

Also meets standards: **BS 5058 - DIN 54306 - ERT 90-3 - UNI 82 79**

			L		NW
T_c	T_h	T_t			

Shapes Sock Control

S024

NF G30-001 - NF G30-101

Testing the sizes of socks

These shapes were designed to test the fit of socks and were developed after conducting measurement studies in collaboration with the French Textile and Clothing Institute. The sock shapes are available in 37 sizes from 16 to 52.

Different options are available: fixed support, mobile support and a sock shape fastener.

Other version available, recessed shapes with the same sizes: S158

T_c					

Upper body shapes

S025 — ISO/TR 10652 - NF G03-102

Testing the sizes of uper body clothings

These shapes are a complementary tool in controlling product quality, which enables the design of garments, specifically adapted to suit individual body shapes. They are also designed to find well fitting upper body garments including the ease with which they fit over the head.

These shapes can be used both in businesses and in laboratories.

Also meets standards: **ISO 4415**

T_c					

Flexion Lenght

S053 — ISO 9073-7

Flexion length of non-woven

A rectangular strip of nonwoven is supported by a rule with a determined mass.

The system is pushed into the longitudinal direction. Thereby, the free end of the strip will then bend under the action of its own weight.

The advanced band will as its free end has not reached a landmark. When the mark is reached, the advanced band distance will be raised.

Also meets standards: **EN 22313 - ASTM D1388 - BS 3356 - ERT 50-3**

					NW

Trim-Tester

S151 — PSA/Renault D45 5601

Ability of a flexible material to fit a convex shape

The Trim-Tester (developed by Faurecia Seats) characterizes the behavior of a textile complex (eg coating of automobile seat) under pleating due to its deformation.

The deformation is obtained by means of a half sphere and a hollow jig. The half sphere puches the complex in the jig pierced, causing its deformation. It is thus possible to perform visual observation of the deformations undergone by the complex.

For a complete evaluation, the unit has 5 different couples template/ hemisphere, in order to achieve effects more severe. The different stages of the trial and the sensors (force measurement and security) are managed by PLC.

A_t					

Thickness Measurement

Thickness Gauge — S042 — ISO 5084

For les geotextiles, fabrics, paper, leather, cardboard, plastics, wood, rubber, etc..

This thickness gauge is the most versatile of our range.

The « presser » foot is fixed and has an area of 25 cm ² (others areas are available on request). The load is adjustable from 0.1 to 10 kPa with a set of interchangeable weights (7 masses). Its mesuring range is 10 mm, with a precision of 0.01 mm.

Its unique design uses a high quality comparator associated with a rigid mechanical mounting that does not seek the measuring system.

Also meets standards: NF G07-153, ASTM D1777, BS 2544, BS 3424, BS 29073, ERT 30-4, ISO 3616.

A_t	A_p		L		
T_c	T_h	T_t	TP	TS	

Thickness Gauge — S082 — ISO 2589 - NF G52-2010

For leathers and skins

This thickness measuring device is specifically adapted for measuring leather. It comes with a foot presser with a diameter of 10 mm, a pressure of 50 kPa, a measuring range from 10 mm and with an accuracy of 0.01 mm.

The design is adapted to the significant pressure applied to the sample being measured. For this version, a high quality metrological electronic comparator is used.

			L		

Inductive Thickness Gauge — S189

Contactless measurement of the thickness of non-metallic materials

Thickness gauge that uses a magnetic sensor with high precision by measuring the induced a target located on the other side of the sample which is desired to determine the thickness of the magnetic field.

The principle of this measuring instrument allows the use of presser feet and weights of all sizes. And use a very low or very high mass on the same frame is possible without loss of performance (parallelism guaranteed, no friction in the guides, not against weight-to, etc..).

Range: 0-10 mm

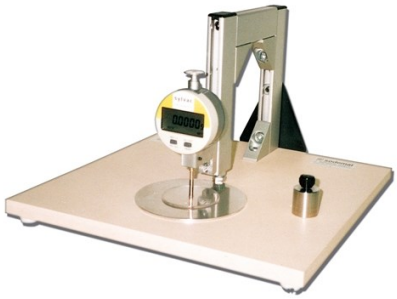
Accuracy: 10 µm

A_t	A_p		L		NW
T_c	T_h	T_t	TP	TS	

Thickness Measurement

Thickness Gauge — S083 — ISO 9073-2

Thickness measurement of "non-bulky" and "bulky" non-wovens <20 mm



This thickness gauge suitable for nonwovens offer in plus of the thickness measurement, the determination of compressibility. The compressibility allows a nonwoven classify into different classes:

- Non-bulky;
- Bulky (<20%);
- Very bulky (> 20%).

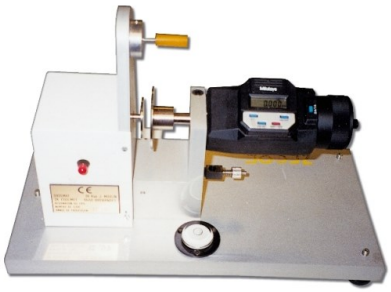
This version is adapted to the first type and second type. This rate is obtained between 0.1 and 0.5 kPa.

The measurement principle is simple: the sample is placed on a reference surface, the extent (vertical) is made by the application of the presser foot of 25 cm ², with a pressure of 0.02 kPa. The measuring range of 20 mm, with an accuracy of 0.01 mm.

					NW

Thickness Gauge — S084 — ISO 9073-2

Thickness measurement of non-woven "normal"



The measurement is performed on this version horizontally, and for non-wovens having a degree of compressibility less than or equal to 20%.

The measurement is made between a reference plate of 10 cm ² and a presser foot 25 cm², with a pressure of 0.02 kPa. The originality of the method is the use of a weight-cons for horizontal use.

The measuring range of 20 mm, with an accuracy of 0.01 mm. The test must have dimensions of 130 mm (± 5) by 80 mm (± 5).

					NW

Thickness Gauge — S085 — ISO 9073-2

Thickness measurement of non-woven "bulky"> 20 mm

This version is used for measuring non-woven fabrics with a rate of compressibility higher than 20%.

The sample (200x200 mm²) rests on a reference surface and is measured vertically. The pressure is applied with a glass plate of same dimensions. The measuring system is a mobile rod, which rests freely on the glass plate and the measurement is taken by reading the position of the upper part of the rod on a graduated index. The measurement range is from 100 mm with an accuracy of 0.1 mm.

					NW

Waterproof Resistance — S081 — ISO 20811

2 meters version

This device is easy to use and tests the water resistance of fabrics. Pressure is applied through the rise of distilled water in a column at a speed of 10cm/mn.

The apparatus is fitted with a speed regulator which enables the water container to descend more quickly and also to rise rapidly should the device need emptying.

The device is made from non-oxidizable materials.

Also meets standards: **EN 20139 - EN 3321 - EN 3424**

T_c	T_h	T_t			

Blood Permeability Tester — S129 — ASTM F 1671

Woven Fabric permeability tester, suitable for use in the medical field

This device characterizes the resistance of cloth to liquids and artificial blood.
A sample is placed under liquid pressure, which is obtained through a pneumatic network, which is adjustable from 0-10 PSI.

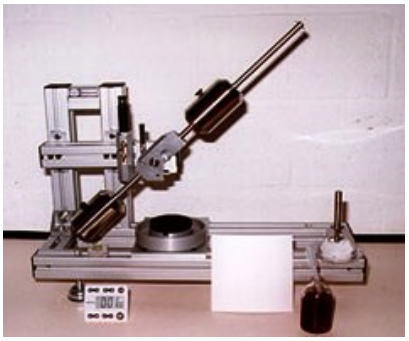
By increasing the pressure, the test determines the degree to which the cloth is permeable.

Also meets standards: EDANA

	T_h				

Quick Barrier Tester — S059 — ISO 22610 - ASTM F1670

Resistance of protective clothing to biological fluids



The Quick Barrier Tester (QBT) measures the protective properties of materials when exposed to synthetic blood. It is extremely important to test the barrier level posed to micro organisms by the fabric used for medical clothing and gowns, both after manufacturing and during the cleaning process.

The QBT simulates the contact of surgical clothing and sheets with blood. This process can be evaluated under different levels of pressure (from 1 to 14kPa).

This pressure is applied directly to the fabric in order to make the synthetic blood penetrate. The highest pressure setting on which the liquid does not affect the fabric is determined.

	T_h				

Linting — S150 — PSA D45 5600 - ASTM D 3511

Resistance of a fabric to the textile pollution - Part pollution

This test bench ensures two types of tests:

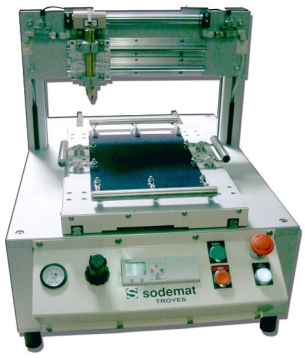
- Textile pollution in its configuration "PSA". A "polluter" tissue is rubbed on the samples. This test assesses the textile pollution and the easy cleaning (hanging outside fiber hair, dust, fibers, clothing ...).
- Pilling in its configuration "ASTM D 3511." A brush (nylon) is rubbed on the test samples.

According to the method chosen, the supports must be changed.

A_t			L		
		T_t			

Linting Blowing — S149 — PSA D45 5600

Textile cleaning after soiling



This bench is specific to PSA (method D45 5600). It allows you to make the most reproducible cleaning step, thanks to a sharp control of each operation: path traveled, air flow, speed.

This is the natural complement to the bench "Linting dirt."

A_t			L		
		T_t			

Spray-Tester — S036 — ISO 4920

Resistance to surface wetting

The Spray-Tester assesses the resistance of any textile, whether it has been waterproofed or not, to superficial wetting.

The device is simple but sturdy and can be adapted to other methods on request.

Also meets standards: NF G07-056, EN 24920, BS 3702 and BS 3425.

Two other versions have been developed:

- Test for non-woven fabrics (ISO 9073-11)
- Test for protective clothing (ISO 6530) - Please ask for details

A_t			L		NW
T_c	T_h	T_t			

Determination of the tog of fabrics

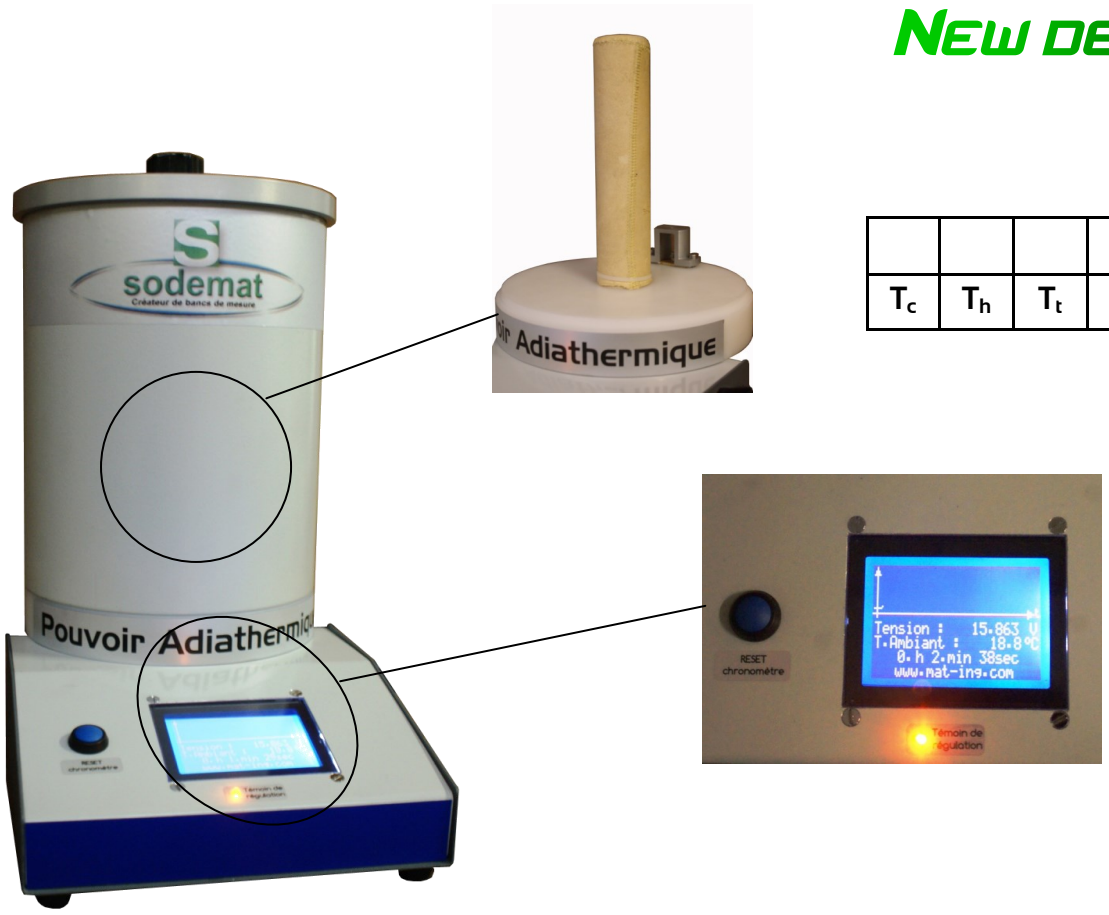
The current concerns about energy conservation and the need for some comfort have created a metrological needs: measuring the heat transmission through textile materials. Power Togs (PA) characterized the thermal resistance and the radiation properties of different materials used in the textile industry (military clothing, health, etc..). This is the measure of heat transmission through textiles!

It is a classification tool easy to use: all kinds of clothing wraps can be tested. The Tog (%) is measured against the electrical power required to maintain a constant distance between the inside of the sample (hollow cylinder) and outside (within the measuring chamber).

An internal software helps the user in the conduct of the test: chart to see the evolution of the measured signal, stopwatch free bootable, LED lamp temperature control, temperature display enclosure.

The Tog-Meter is the only instrument used simply quantifying the tog a fabric!

NEW DESIGN!



T_c	T_h	T_t			

Other version available:
A variation of the Tog-Meter is proposed for fabric on which it is difficult or unrepresentative constitute a cylindrical specimen: comforters, parkas, anoraks, etc.

This version allows the measurement of flat fabrics using the same measuring principle.

Ref.: S126

Sample Preparation

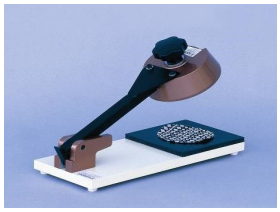
Sample Cutter (g.m^{-2}) — S048 — ISO 3801

Determining the surface mass of the fabrics

Cutout of samples for determining the weight per square meter of fabric, paper, etc.. It requires a balance (optionally supplied).

A holder (optionally supplied) can be attached with cutter designed for moderate wear blades and prevents the crushing of the cutting device.

We offer in addition a complement wide range of scales (Kern). For example, the reference EWBB 220-2M with a 220 g capacity and a 0.01 g reading,



Also meets standards: EN 12127 - ASTM D3776 - ASTM D2646

					NT
Tv	Ts	Tt	TP		

Sample Cutters

Preparation of samples for specific tests

On the same principle as the cutter for determining the weight per square meter, more circular cutters are available:

- **Cutter diameter 25 mm**
- **Cutter diameter 35.7 mm (10 cm²)**
- **Cutter diameter 38 mm** sample preparation for Martindale abrasion testing
- **Cutter diameter 140 mm** to prepare samples for testing with water Imperméabilimètre
- **Cutter diameter 170 mm** sample preparation for testing abrasion and pilling Martindale

Other possible circular cutters on request.

					NT
Tv	Ts	Tt			

.

Resistance & Elasticity

Agrip-Tester — S057 — EN 1414

Testing of Velcro strips

The Agrip-Tester is a simulator of use: it can simulate cycles of openings/ closings of Velcro type strips for a given width.

After theses cycles, the strips will be submitted to residual strength tests (on a dynamometer not supplied).

		T_t			

Compressive Force Scale — S040 — NF G30-102

Measure of restraint for footwears and stockings

The elastic trims (ribbed socks, belts, briefs and panties) must ensure the maintening of items without disturbing the user. Sheaths and some medical stockings must provide a maintening in good conditions. It is therefore important, both for the user that the manufacturer, to measure the pressure on the skin when it is worned by the elastic elements.

Direct reading instrument for non-destructive testing, it measures in terms of wear all parts of a garment applying pressure on the body (underpants belt, ribbed socks, medical supplies).

T_c	T_h	T_t			

CoupTest QC — S184 — EN 388

Resistance to cutting of safety gloves - Quality Control version

The CoupTest was studied to test the cut resistance gloves (leather, poly-aramid, polyamide, etc..). We decline this method in 2 instruments. The QC version is the simplest and is dedicated to quality control.

Responding fully to EN 388, the CoupTest 2011 series provides a maximum protection (blade always protected, locking in a high position of the head) for its user. Ergonomics (automatic return to original position, change support rapid test) allows many tests in a short time. Its speed test and its behavior is identical to the previous generation of CoupTest.

			L	P	
		T_t			

Resistance & Elasticity

CoupTest XP — S170 — EN 388

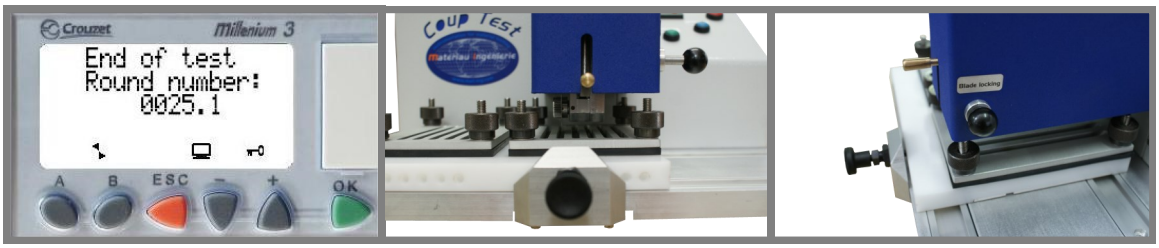
Resistance to cutting of safety gloves - Expert version

The CoupTest was studied to test the cut resistance gloves (leather, poly-aramid, polyamide, etc..). We decline this method in 2 instruments. This version is the most complete.

It allows control of speed and provides assistance during testing. These advanced functions are managed by a PLC, easy to use. Two test modes are available: a simplified mode where speed is that specified by the standard, an advanced mode where speed is programmable.

This expert version allows the change of the test load.

			L	P	
		T_t			



Tear-Tester — S029 — ISO 1974 - ISO 6383 - ISO 13937

Elmendorf Method

The Tear-tester is used to determine the resistance of tear propagation in tissues, clothes, plastic films, papers, etc..

The use of tear-tester is simplified by using an interface monitoring test parameters and results. A cover (optionally supplied) allows its safe use without altering the observation of the trial.

It can be used for the control of fabrics produced by other techniques, such as non-woven and coated fabrics.

Also meets standards: **Tappi T414, ASTM D1424, DIN 53862, DIN 53128, NF G07-149, BS 4468, SNV 198 482...**

			C		NT
Tv	Ts	Tt	TP		

Resistance & Elasticity

Digital Bursting Tester

S030 & S031

ISO 2758 - ISO 3303

Resistance of materials to deformation and pressure

New design!

This bursting tester measures the resistance of flexible materials (fabric, paper, leather, non-woven, plastic, etc.) to bursting.

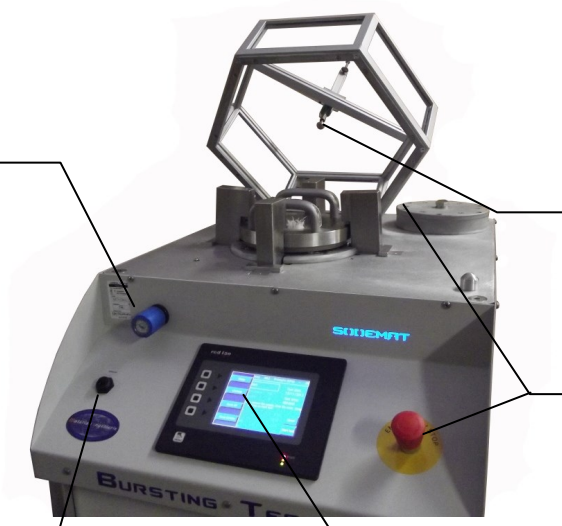
This works by using an elastomeric membrane to exert a regulated increasing pressure on a sample of cloth, which is held in place between two stainless steel plates.

When the cloth bursts, both pressure and stretching are recorded by an automaton, which also manages the test.

4 clamping rings are supplied as standard for working on the following surfaces: 100 cm², 50 cm², 10 cm² and 7.3 cm².

Also meets standards: **ISO 3689 - ISO 13938, NF G07-112, ASTM D774, BS 3137, BS 4768.**

T_c	T_h	T_t	TP		



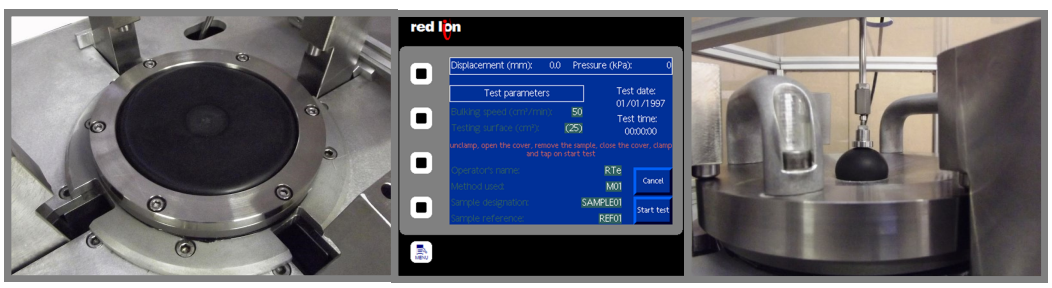
Precise control of the clamping pressure of the sample

The sensors used are accurate and robust, specially chosen for this application

Maximum safety during the course of the test

Touchscreen interface - Automatic Calculations - Safety management ...

Connexion Ethernet pour un partage efficace des résul-tats



Resistance & Elasticity

Esolab

S050

Simple control of knitwear extension

Small instrument for immediate objective and reproducible control of the nervousness of a fabric by measuring its response to the extension.

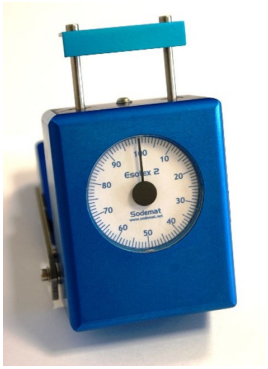
It is particularly appreciated when comparing sampling, judgment of the effectiveness of a primer treatment including a heat setting.

T_c	T_h				

Esotex

S080

Determination of the appeal tension knitted on circular knitting



The Esotex, created by IFTH, is the easiest and most accurate way to control the extension of knitwear.

The Esotex is essential for the reproduction of settings tool, especially on large diameter circular trades.

T_c	T_h				

Indentation

S059

ISO 2439 - ISO 1923 - ISO 3386

Dynamic fatigue of flexible materials in alternate flexion

Apparatus for determining the fatigue of soft cellular polymeric materials by indentations, repeated fixed deformations and constant loads.

The test consists of subjecting the foam an indentation force of 750 N. for 80,000 cycles.

A_t					
	T_h				

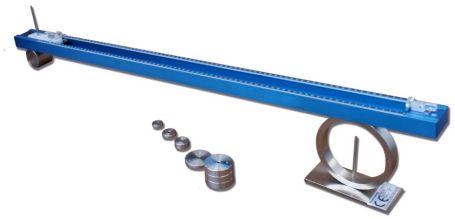
Resistance & Elasticity

Crimp-Tester

S124

EN 14970 - ASTM D3883

Calculation of crimp in yarn affected by knitting or weaving



This simple, sturdy, precise and accurate device is designed to determine the crimp in knitted fabrics and the shrinkage of warps, weft yarns and picks in woven fabrics. Crimps of up to 140cm can be measured.

AFNOR G 07-104: Textiles, woven fabric tests, method for determining certain characteristics, section IV: determining the shrinkage of yarns extracted from a fabric.

AFNOR G 07-101: Textiles, knitted fabric tests, methods for measuring crimp and testing crimp regularity in knitted fabrics.

T_c	T_h	T_t			

Mono-Impactor

S152

Renault D24-1699

Simulation of gravel on painted body parts

This technological test consists of reproducing the impact effect of gravel on vehicles (either lacquered or painted surfaces). The distinguishing feature of this device lies in the fact that only one projectile at a time is fired and the pitcher can be moved at each shot.

The sample support can be swivelled by 15°, 30°, 45°, 60°, 75° or 90°. A screen is positioned behind the sample to retain any projectiles which are fired over the sample. An angled spout collects used projectiles.

Available versions:

- Quality control : only manual adjustment
- Expert : fully automatic

	A_p	A_s			

Scrub-Tester

S044

ISO 5981

Wrinkling of fabrics

Scrub-Tester is designed to test the wrinkling behavior of all coated fabrics with rubber or plastic. It can, for example, assess the strength of a material (such as leather) to repeated bending. This device therefore finds application for many trials and soft materials (leather, fabric, PET, airbag fabric, etc.), particularly in the automotive sector.

- Ease of use;
- Conduct of tests on all types of flexible materials;
- Maintenance quick and easy.

Also meets standards: **PSA D42 1073, Renault D42 1007**

A_t			L		
T_c	T_h	T_t			

Stitch Damage Tester — S163 — PSA D45 2024

Seam fatigue for automotive sector

The Stitch Damage Test tests the ability of a stitched fabrics to withstand dynamic fatigue. This bench has been specifically developed for the automotive industry.

Two sewn samples specially prepared are set in series. They are strained by exercising a given mass strength. Move back and forth seeking the dynamic fatigue. After a pre-set number of cycles, the visual inspection is used to classify the sewn fabric.

The SDT is available in 2 and 4 positions versions. 4 positions version allows independent management of each of the double track (number of cycles, beginning and end).

Also meets standards: Ford BN 106-02 - Nissan M0154

A_t					

Teethbrush-Tester — S168 — ISO 22254

Determining the hardness of the tooth brush

TbT fully reflects the ISO 22254: "flexibility test toothbrushes (hair)." It is an indispensable aid in the classification of toothbrushes from the flexibility of the bristles taking into account the location of the tufts.

The software allows the control of the test (speed and number of cycles) and the acquisition of the friction force between the brush and the table wear. Each test is recorded and statistically usable as a series.

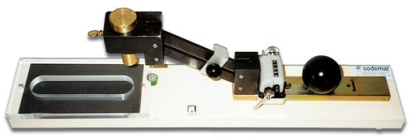
					V

Other instruments: Dynatech 1.5 (p.15)

Colour Fastness

Crock-Meter — S089 — ISO 105x12 & D02 &D05 & D06

Manual version for testing the resistance of dye to abrasion



This Crock-Meter is a basic version, which tests the resistance of dye to abrasion. This test can be carried out on all fabrics and all thicknesses (woven, rugs, carpet, painted plastic, etc.).

The movement is generated by the operator, whilst the number of cycles is increased automatically.

Available options (the device comes with a choice of kit, for use with textiles or fitments.

- Textile option (**NF ISO 105X12, NF ISO D05**)
- Fitment option (**NF ISO 105X12, NF ISO D06**)

					NW
T_c	T_h	T_t			

Crock-Meter — S087 — ISO 105x12 & D02 &D05 & D06

Power operated version for the control of the resistance of dyes

- Apparatus for determining the color fastness to rubbing
- The number of cycle is configurable
- The unit comes with a kit of your choice

This device tests the resistance of dye to abrasion. The test can be carried out on textiles of all thickness: woven, carpets, floorcoverwigs, etc. and in any medium: water, solvent and sweat.

Available options (the device comes with a choice of kit, for use with textiles or fitments.

- Textile option (**NF ISO 105X12, NF ISO D05**)
- Furnished option (**NF ISO 105X12, NF ISO D06**)

					NW
T_c	T_h	T_t			

Crock-Meter — S045 — PSA/Renault D44 1221 & D45 1010

Device to test the resistance of dye to crocking, suitable for use in the automotive industry.

It allows to determine the color fastness to rubbing or catching. The test can be performed on any thickness of fabric: fabrics, carpets, etc.. and any medium: water, sweat, solvents.

Toyota also meets the standards **TSL 2100G, Nissan M0154 (2005-1)**, other methods of application.

- ♦ Modularity (many optional accessories for changing methods)
- ♦ Easy Maintenance

A_t	A_p	A_s	L		
T_c	T_h	T_t			

NORMATIVE INDEX

The number of measuring devices that we offer meet either national or international standards (ISO, EN, DIN, NF, BS, ASTM, etc..) as well as to company, inter-company (PSA , Renault, Samsung, Nissan, Faurecia, etc..) or sector (AATCC EDANA, SATRA, etc..) test methods.

In this index are grouped the various standards or methods references that we know (depending on the date of the publication of this catalog).

This index is not exhaustive nor restrictive. We can assist you in finding new tests or standards to offer you the instrument of measure representing (development or adaptation of a "catalog" device) methods

Standards	Instruments	Page
AATCC 22	Spray-Tester	34
AATCC 8/165	Crock-Meter	43
AATCC 66	Kink Angle Auto-Creasing	28
ASTM D256	Pendulum	16
ASTM D648	HDT-Vicat	17
ASTM D774	Digital Bursting Tester	39
ASTM D1238	M3350	13
ASTM D1388	Flexion Lenght	30
ASTM D1424	Tear-Tester	38
ASTM D1525	HDT-Vicat	17
ASTM D1777	Thickness Gauge 5084	31
ASTM 2646	Sample Cutter ($g.m^{-2}$)	36
ASTM D3364	M3350	13
ASTM D3511	Linting	34
ASTM D3512	RTPT	27
ASTM D3776	Sample Cutter ($g.m^{-2}$)	36
ASTM D3883	Crimp-Tester	41
ASTM D5734	Tear-Tester	38
ASTM D68996A	Tear-Tester	38
ASTM D774	Digital Bursting Tester	39
ASTM F1670	QBT	33
ASTM F1671	Blood Permeability Tester	33
Benz PWT 7332	Abrasimeter MIE	25
BS 1006D02	Crock-Meter	43
BS 2543	Crock-Meter	43
BS 2544	Thickness Gauge 5084	31
BS 2782	M3350	13
BS 3137	Digital Bursting Tester	39
BS 3356	Flexion Lenght	30
BS 3424	Waterproof Resistance	33
BS 3424	Thickness Gauge 5084	31
BS 3425	Spray-Tester	34
BS 4468	Tear-Tester	38
BS 4655	Crock-Meter	43
BS 4768	Digital Bursting Tester	39
BS 5058	Drape-Tester with Miror	29
BS 5811	Pilling Box - Cube ICI	27
BS 9073-7	Flexion Lenght	30
BS 29073	Thickness Gauge 5084	31
DIN 53128	Tear-Tester	38
DIN 53460	HDT-Vicat	17
DIN 53461	HDT-Vicat	17
DIN 53861	Digital Bursting Tester	39
DIN 53862	Tear-Tester	38
DIN 53867	RTPT	27
DIN 54306	Drape-Tester with miror	29
EDANA	Blood Permeability Tester	33
EN 388	CoupTest	37
EN 1414	Agrip-Tester	37
EN 3321	Waterproof Resistance	33
EN 3424	Waterproof Resistance	33
EN 12127	Sample Cutter ($g.m^{-2}$)	36
EN 13770	Abrasimeter for Socks	25
EN 14970	Crimp-Tester	41
EN 20105	Crock-Meter	43
EN 20139	Waterproof Resistance	33
EN 20811	Waterproof Resistance	33
EN 21974	Tear-Tester	38
EN 22313	Kink Angle Auto-Creasing	28
EN 22313	Flexion Lenght	30
EN 24920	Spray-Tester	34
EN ISO 1923	Indentation	40

Standards	Instruments	Page
EN ISO 2439	Indentation	40
EN ISO 2589	Thickness Gauge "Leather"	31
EN ISO 3386	Indentation	40
EN ISO 5981	Scrub-Tester	41
ERT 30-4	Thickness Gauge 5084	31
ERT 50-3	Flexion Lenght	30
ERT 90-3	Drape-Tester with Miror	29
FORD BN 106-02	Stitch Damage Tester	42
INDA IST 100,1	Tear-Tester	38
ISO 75	HDT-Vicat	17
ISO 105 D02	Crock-Meter	43
ISO 105 D05	Crock-Meter	43
ISO 105 X12	Crock-Meter	43
ISO 179	Pendulum	16
ISO 180	Pendulum	16
ISO 182	Congotech	17
ISO 306	HDT-Vicat	17
ISO 1133	M3350	13
ISO 1769	Flexion Lenght	30
ISO 1923	Indentation	40
ISO 1974	Tear-Tester	38
ISO 2313	Kink Angle Auto-Creasing	28
ISO 2439	Indentation	40
ISO 2535	Rheotech TR (Trombotech)	14
ISO 2589	Thickness Gauge "Leather"	31
ISO 2758	Digital Bursting Tester	39
ISO 3303	Digital Bursting Tester	39
ISO 3386	Indentation	40
ISO 3616	Thickness Gauge 5084	31
ISO 3801	Sample Cutter ($g.m^{-2}$)	36
ISO 3689	Digital Bursting Tester	39
ISO 4415	Upper Body Shapes	30
ISO 4674	Tear-Tester	38
ISO 4920	Spray-Tester	34
ISO 5084	Thickness Gauge 5084	31
ISO 5981	Scrub-Tester	41
ISO 6383	Tear-Tester	38
ISO 6530	Spray-Tester	34
ISO 9073	Thickness Gauge 5084	31
ISO 9073-2	Thickness Gauge « Non-Woven »	32
ISO 9073-7	Flexion Lenght	30
ISO 9073-9	Drape-Tester with Miror	29
ISO 9073-11	Spray-Tester	34
ISO 12058-2	Viscositech	13
ISO 12114	P-Reactech	19
ISO 12945-1	Pilling Box - Cube ICI	27
ISO 12945-1	RTPT	27
ISO 12945-2	Martindale	26
ISO 12947-1	Martindale	26
ISO 13003	Epsitech	16
ISO 13937	Tear-Tester	38
ISO 13938-1	Digital Bursting Tester	39
ISO 13938-2	Digital Bursting Tester	39
ISO 14616	Retratech	20
ISO 20139	Waterproof Resistance	33
ISO 20811	Waterproof Resistance	33
ISO 22088	EAC-Flexion	21
ISO 22254	Teethbrush Tester	42
ISO 22610	Quick Barrier Tester	33
IWSTM 152	Pilling Box - Cube ICI	27
JIS IC 6328	Crock-Meter	43
JIS K7210	M3350	13
JIS L0815	Crock-Meter	43
JIS L1076	RTPT	27
JIS L1084	Crock-Meter	43
M85 P22	Kink Angle Auto-Creasing	28
Marks&Spencer	Pilling Box - Cube ICI	27
NF EN 12127	Sample Cutter ($g.m^{-2}$)	36
NF EN 14970	Crimp-Tester	41
NF EN 22313	Kink Angle Auto-Creasing	28
NF EN ISO 1923	Indentation	40
NF EN ISO 2439	Indentation	40
NF EN ISO 2589	Thickness Gauge « Leather »	31
NF EN ISO 3386	Indentation	40
NF EN ISO 5981	Scrub-Tester	41
NF G07-101	Crimp-Tester *(replaced by NF EN 14970)*	41
NF G07-102	Upper Body Shapes	30
NF G07-107	Tog-Meter	35
NF G07-109	Drape-Tester	29
NF G07-110	Kink Angle Auto-Creasing *(Replaced by NF EN 22313)*	28
NF G07-112	Digital Bursting Tester	39
NF G07-121	RTPT	27
NF G07-125	Hollow Cylinders Self Crease Recovery	28
NF G07-149	Tear-Tester	38
NF G07-150	Sample Cutter ($g.m^{-2}$)	36
NF G07-153	Thickness Gauge 5084 (Replaced by ISO 5084)	31
NF G30-001	Shapes Sock Control	29
NF G30-100	Abrasimeter for Socks	25
NF G30-101	Shapes Sock Control	29
NF G30-102	Compressive Force Scale	37
NF G37-110	Abrasimeter MIE	25
NF G37-110	Scrub-Tester *(Replaced by NF EN ISO 5981)*	41
NF G52-2010	Thickness Gauge "Leather" *(Replaced by NF EN ISO 2589)*	31
NF G60-002	Abrasimeter for Socks	25
NF T50-116	M3350	13
NF T51-005	HDT-Vicat	17
NF T51-014	Compressive Force Scale	37
NF T51-021	HDT-Vicat	17

Standards	Instruments	Page
NF T51-035	Pendulum	16
NF T51-111	Pendulum	16
NF T51-120	Epsitech	16
NF T54-109	Dart-Test	15
NF T56-110	Indentation *(Replaced by NF EN ISO 3386)*	40
NF T56-111	Indentation *(Replaced by NF EN ISO 2439)*	40
NF T56-119	Indentation *(Replaced by NF EN ISO 1923)*	40
NISSAN M0154	Stitch Damage Tester	42
PSA D42 1073	Scrub-Tester	41
PSA D42 1775	Scratch Resistance Tester	26
PSA D44 1073	Abrasimeter MIE	25
PSA D44 1221	Crock-Meter « Automotive »	43
PSA D44 1237	BTW	26
PSA D44 1900	Scratch Resistance Tester	26
PSA D44 5600	Mace Snagging Tester	27
PSA D45 1010	Crock-Meter « Automotive »	43
PSA D45 2024	Stitch Damage Tester	42
PSA D45 5331	Wrinkle Angle Tester	28
PSA D45 5506	Spray-Tester	34
PSA D45 5600	Linting	34
PSA D45 5601	Trim-Tester	30
Renault D24 1699	Mono-Impactor	41
Renault D42 1007	Scrub-Tester	41
Renault D42 1775	Scratch Resistance Tester	26
Renault D44 1073	Abrasimeter MIE	25
Renault D44 1221	Crock-Meter « Automotive »	43
Renault D44 1237	BTW	26
Renault D44 1900	Scratch Resistance Tester	26
Renault D44 1900	Scratch Resistance Tester	26
Renault D44 5601	Mace Snagging Tester	27
Renault D45 1010	Crock-Meter « Automotive »	43
Renault D45 5331	Wrinkle Angle Tester	28
Renault D45 5601	Trim-Tester	30
SNV 198482	Tear-Tester	38
TAPPI T414	Tear-Tester	38
Toyota TSL 2100G	Crock-Meter « Automotive »	43
UNI 8279	Drape-Tester with Miror	29

General Conditions of Sales

Article 1 – Subject

The general terms and conditions of sale described hereafter detail the rights and obligations of Matériau Ingénierie in relation to their clients and reciprocally with regards to the sale of its products and services.

Every product delivered or service provided by Matériau Ingénierie entails the unreserved adherence of the buyer to current, general terms and conditions of sale.

Article 2 – Price

The price of goods and services sold are those in operation on the day the order was taken. They are specified in Euros and are calculated excluding tax.

As a result, there will be a surcharge for VAT and shipping costs applicable at time of placing order.

Matériau Ingénierie retains the right to modify its prices at any given moment. However, it commits to charging the prices indicated at time of placement of an order for goods and services.

Article 3 – Rebates

Proposed charges include any reductions and discounts that Matériau Ingénierie would be able to grant, bearing in mind its results or the retention of certain allowances by the buyer.

Article 4 – Discount

No discount will be provided in the event of advance payment.

Article 5 – Payment

Payment of orders is made:

either by cheque made payable to Matériau Ingénierie

or by bank transfer

Bank Address: CIC Lyonnaise de Banque

46, rue d'Avéjan

30100 Alès

France

Bank account details:

IBAN: FR76 1009 5600 0293 9190 161

SWIFT/BIC: CMCIFRPP

In the case of product purchase, the buyer at the time of the order will have to put down a deposit equal to 30% of the total amount of the order, the remainder to be paid upon receipt of the good.

However, Matériau Ingénierie reserves the right to ask for a further second deposit of 40% before sending out the good, notably in the case where it represents a first transaction.

In case of provision of a service, the invoice will be settled within the thirty days that follow the fulfilment of the service.

Article 6 – Late payment

In the absence of partial or total payment of goods delivered or services provided according to the payment terms stated in article 5, the buyer will have pay Matériau Ingénierie charges equal to one and a half times the legal interest rate.

The legal interest rate charged is that in force in France on the day the goods are delivered.

This penalty is calculated on the amount remaining unpaid excluding tax, and will take effect as soon as the date of payment has passed, meaning that no formal notice is necessary.

General Conditions of Sales

Article 7 – Termination clause

If in the fifteen days following the implementation of article 6, the buyer has not paid the remaining amount overdue, the sale will be settled by right and shall entitle the allocation of damages in favour of Matériau Ingénierie

Article 8 – Retention of title clause

Matériau Ingénierie retains ownership of goods sold until full payment has been made.

In that account, if the buyer is made subject of an administration order or forced into liquidation by the courts, Matériau Ingénierie reserves the right to reclaim, as part of collective proceedings, the goods and the outstanding monies.

Article 9 – Delivery

Delivery is carried out:

- either by the direct exchange of the good to the buyer
- or by sending out a notice of readiness at the factory for the attention of the buyer
- or at the place indicated by the buyer on the order form

The delivery time indicated on the order booking (acknowledgement of receipt) is only given as an estimate and is not guaranteed.

Consequently, any reasonable delay in the delivery of products or provision of services does not constitute a breach of these conditions and shall not entitle the buyer to claim damages or allow for the cancellation of the order.

The risk of transit is covered by the buyer.

In case of missing or damaged goods as a result of transportation, the buyer will have to make note of all the necessary reservations on the order form on receipt of the aforementioned goods. These reservations will also have to be confirmed in writing in the five days immediately following the order by registered mail with notice of receipt.

Article 10 – Force Majeure

Matériau Ingénierie will not be liable for any delay or failure to perform its obligations as set out in the general terms as a result of a force majeure.

A force majeure means all unforeseen events that occur in circumstances beyond our control, as defined in article in article 1148 of the French Civil Code.

Article 11 – Applicable law

Any dispute relating to the interpretation and implementation of the present general terms and conditions of sale shall be governed by the laws of France.

In the absence of an amicable settlement, the dispute will be brought before the business courts of Nîmes, France.

Contact us

Postal address:

Vallon de Fontanes
2, rue des Acacias
30520 Saint-Martin-de-Valgalgues
FRANCE

Phone: +33 (0)466 922 060
Fax: +33 (0)466 253 980
Email: info@mat-ing.com