

# VVC

PRÜFTECHNIK



TEST INSTRUMENTS  
TEST MATERIALS  
SERVICE & CALIBRATION

# Get in touch...



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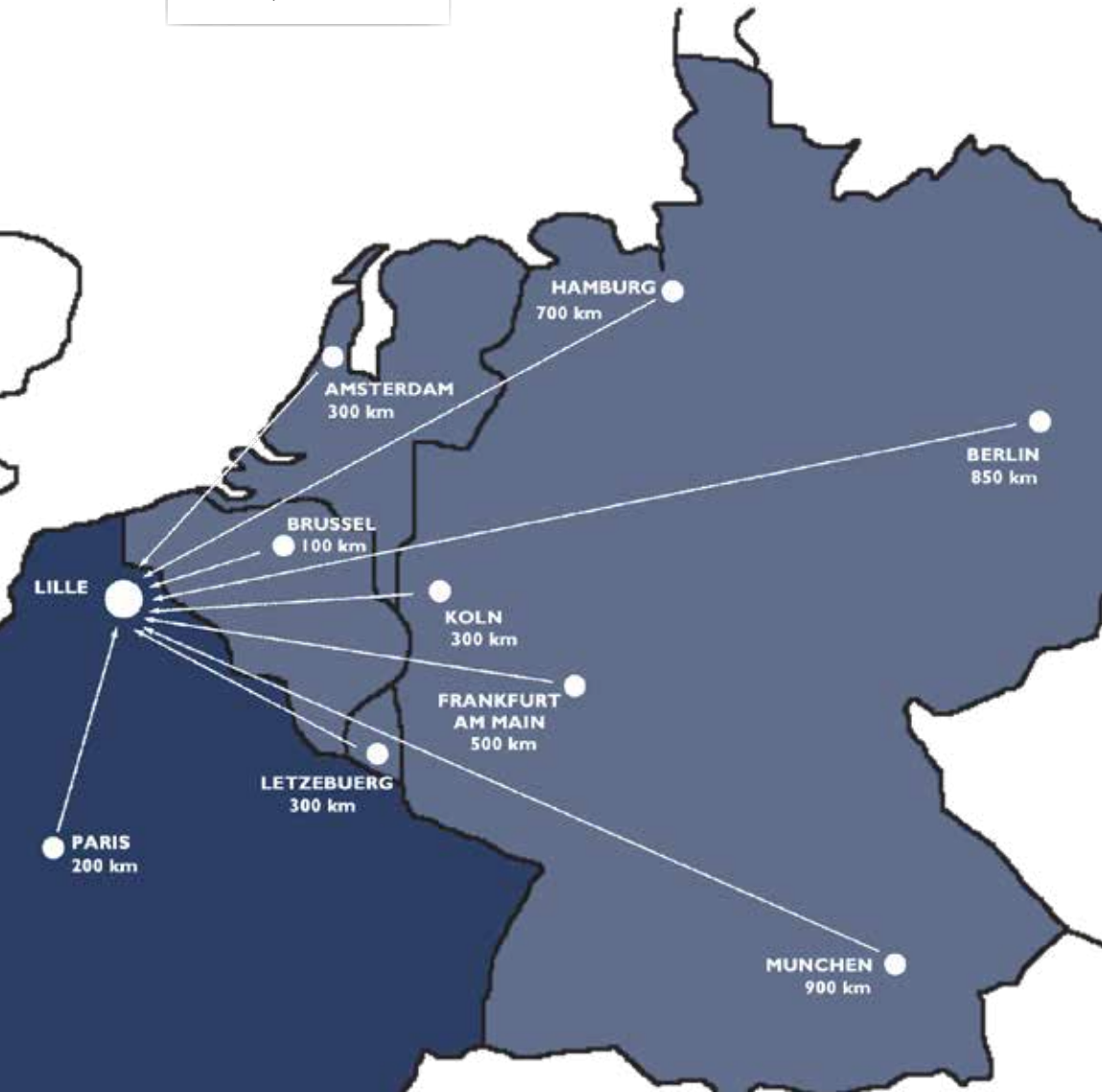
Test Materials online  
[www.eshopvvc.eu](http://www.eshopvvc.eu)

VVC is located in Linselles.

We are 30 minutes away from the airport and the train station in Lille.

This is the heart of Europe between Germany, Benelux, United Kingdom and France.

Lille is served by Eurostar and near by airports from Paris, London, Brussel and Amsterdam.





Dear Customers,

Year after year our export business has been expanding all over Europe and North Africa. This is why you are reading our first catalog in English dedicated to our foreign Customers.

The tests equipments are organised by type of testing : Physical testing, flammability testing, tests on leather and coated textiles and tests on Personal Protection Equipments (PPE). Some pages includes QR codes that allow you to watch a video of the machine in working condition.

VVC is also a brand. Our devices are manufactured exclusively for us by our partners according to our technical and quality requirements. They have been extensively tested prior to marketing.

VVC has a Metrology department. Our global service includes calibration, installation and training on site.

Based in the North of France VVC is ideally located to serve various markets like Germany, Benelux and eastern Europe.

I would like to share our company's values with you :

- Innovation,
- Proximity,
- Customer Satisfaction,
- Team Spirit,
- Confidence.

These values guide our actions both within VVC and in our contacts with You, our Customers.

Thank you for your business.  
Best regards,

Vincent GURDAL, CEO

VVC is member of the UP-tex cluster



# OUR PARTNERS



PEGASIL is a trade mark with more than 25 years experience in the leather and footwear world. More than 80 different models of laboratory equipments are manufactured by ZIPOR and are developed to perform quality control on natural stones, textiles, leather, rubber, footwear (namely safety footwear) and their constituent materials, vital in the manufacture of modern and high quality products.



Forty years of continuing development has resulted in a main product line of universal strength testing machines for tension, compression, flexure, shear and product testing. Testometric machines are used in over 100 countries worldwide and supported by a network of offices and approved agencies. Testometric is established in all industries and educational sectors and we have an enviable reputation for innovation, product quality and excellent customer support.



Since 1971 Deatak has been a trusted name in the fire testing industry. An independent laboratory and a manufacturer of fire testing instruments, Govmark is the fire testing solution for companies, manufacturers and other laboratories alike.

Govmark has been a leading innovator in fire/flammability testing, physical textile testing, and fire testing equipment. Compliant with national and global standards organizations



**VVC is also a brand. It is with great pride that we invite you to discover our range of equipment under the brand VVC. These devices are manufactured exclusively for us by our partners according to our technical and quality requirements. They have been extensively tested prior to marketing.**

VVC has a Metrology department.

We can offer you support for your machinery with three levels according to the degree of criticality of your equipment.

VVC metrology offers COFRAC traceability and is accredited by James HEAL VVC for calibration of their equipment in France.

**Ask for our brochure about metrology or visit our website. <http://vvc.eu/metrologie/>**



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# WATER RESISTANCE

## VVC HYDROSTATIC HEAD TESTER

The VVC Hydrostatic Head Tester is used to measure the resistance of a fabric to the penetration of water under hydrostatic pressure.

It is applicable to all types of fabrics, including those treated with a water resistant or water repellent finish,

Measurement of the resistance to water penetration by means of the dynamic test method, the static test method, and the program test method..

The tester is supplied with a 100 cm<sup>2</sup> test head and LABTest Software

### STANDARDS

ISO 1420A
AATCC 127
BS 2823
DIN 53886
EDANA 120.1-80
EN 20811
INDA IST 8034



### Main features

- 7-inch touch color screen. Test results can be saved to Excel file, and can be sent via WIFI to anywhere, can also be saved to the SD card.
- Simple and convenient test fixture is designed to provide superior gripping force, to ensure that the water does not leak out from the side.
- Automatic water supply, built-in water level sensor, can automatically add water to test the horizontal position.
- Friendly and convenient test software, test software to configure a variety of test standard, user-friendly.
- Test pneumatic clamp head, with huge clamp pressure, Maximum pressure four tons.
- High-precision pressure sensors and pressure control system.
- LED soft illumination system, digital adjust lighting brightness.



# AIR PERMEABILITY

## VVC AIR PERMEABILITY TESTER

The VVC Air Permeability Tester is used for fast, simple, and accurate determination of air permeability for all kinds of flat materials. The measuring range covers dense papers and airbag fabrics as well as extremely open non-woven and forming fabrics.

The tester is supplied with a 20 cm<sup>2</sup> test head and LABTest Software

### Main features

- 7-inch touch color screen. Test results can be saved to Excel file, and can be sent via WIFI to anywhere, and can also be saved to the SD card.
- Automatic test, according to the flow of fabric air permeability, automatic test choose the appropriate range.
- Automatic induction test head size, easy to change the test head.
- Leak prevention design, air leakage is close to zero.
- Unit : mm/s, cm<sup>3</sup>/cm<sup>2</sup>/s, l/m<sup>2</sup>/s, l/dm<sup>2</sup>/min, m<sup>3</sup>/m<sup>2</sup>/min, m<sup>3</sup>/m<sup>2</sup>/h, dm<sup>3</sup>/s, l/s, l/min, m<sup>3</sup>/h, cmf
- Measuring accuracy: ± 2 % of the displayed value
- Test pressure: 10~ 2,500 Pa
- Test head / test area: 20cm<sup>2</sup> (standard)
- Optional test heads : 5, 25, 38, 50 and 100 cm<sup>2</sup>
- Data port: Wifi
- Projection of clamping arm: 50 cm
- Sample thickness: 0 up to 10 mm

STANDARDS
NF G07-111
ASTM D 737
ASTM D 3574
BS 5636
DIN 53887
EDANA 140.1
EN ISO 7231
EN ISO 9237
GME 60286
JIS L 1096-A
TAPPI T 251

APPLICATIONS
Dense papers
Airbag fabrics
Extremely open non-woven
Forming fabrics

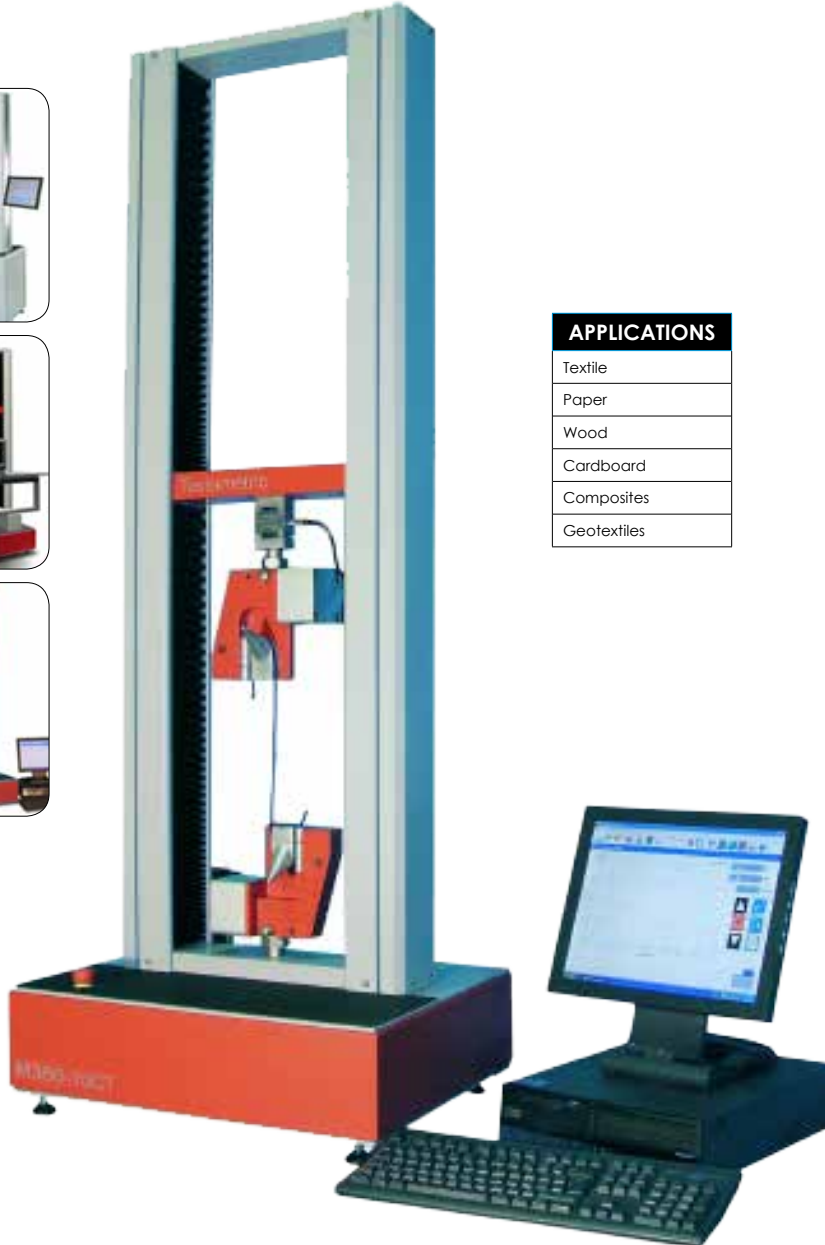




# MATERIALS TESTING MACHINES

Testometric design and manufacture a comprehensive range of materials testing machines and software for evaluating the mechanical properties and performance of materials.

Testometric's universal testing machines are used in all industries worldwide for materials testing, product testing, quality control and R&D applications.



## APPLICATIONS

Textile
Paper
Wood
Cardboard
Composites
Geotextiles



## Technical specifications

- Fully digital testing system
- High precision control and accuracy, includes automated computer control of test methods for simplicity of operation.
- High resolution auto ranging load cells with accuracies better than +/-0.5% down to 1/1000th of the load cell capacity.
- Automatic recognition and calibration of load cells and extensometers, with instant calibration check facility.
- 800% overload capability of load cells without damage.
- Small footprint design, giving economy of bench and floor space.
- High efficiency pre-loaded self cleaning ballscrews for fast, quiet testing. Fitted with sealed for life lubricated end bearings.
- Crosshead guidance system providing precise alignment and smooth running.
- Precision crosshead control via digital AC servo drive and brushless servo motor giving maintenance free operation and 4,000,000 steps per revolution positional control.
- High speed data collection systems for up to 4 synchronous channels.
- 6 I/O channels for additional devices such as extensometers, micrometers, callipers, balances etc.
- High stiffness loading frames with solid specialised steel crossheads and rigid extruded support columns with T-slots for accessory mounting.
- Overload, overtravel and impact protection.
- Telescopic covers giving additional protection for ballscrews against dust and testing debris.
- Extensive range of grips and fixtures for tension, compression, flexural, shear, peel and product testing etc.
- A wide range of contacting and non-contacting extensometers is available including laser and video models.

## Grips & Accessories

Testometric design and manufacture a vast range of grips and fixtures to cover the requirements of all industries for tensile, compression, flexural and customer specific product testing.



Textiles



Yarn



Zipper



Punching



Leather



Geotextiles and geogrid

STANDARDS
ISO 2062
ISO 13934-1
ISO 13936-1 et -2
ISO 13937-2 et -3 et -4
International standards and specific applications
Seam strength



Food



Container



Adhesif tape



Cable and Wire



Wood



Metal



Compression stockings

## Software : WinTest Analysis

Comprehensive winTest™ Analysis universal windows software covering tensile compression, peel, shear, tear, cyclic, creep and multi stage testing. It includes a wide range of industry standard test methods and facility to create and store an unlimited number of further test methods. There is automated storage of all test data and ease of export to other software packages such as word, excel, access and SPC systems for enhanced report generation. winTest™ Reports is an enhancement to winTest Analysis to add flexibility to data analysis and statistical reporting. The package provides a report generation capability that can include long-term statistics and control charts for all specified calculations. winTest Reports™ can also be configured to display headings, titles, company logos, graphs, charts, pop-up menus and specific technical information.

# FIRE TESTING

## HORIZONTAL FLAMMABILITY TESTER

Measures the burning rate of materials used in automotive interiors and certain aircraft interiors

### Main features

- Cabinet fabricated out of high quality brushed stainless steel.
- Includes standard U-Frame Specimen Holder
- Solid state digital timer: Automatically controls flame application time and Facilitates recording of "Afterflame" values
- Stationary Burner with gas pilot tube
- U-Frame Specimen Holder for standard width specimens (Spec. 1, 2 & 3)

### APPLICATIONS

Textile interior
Vehicle and Aircraft
Furnitures
Textile
PPE
Toys



### STANDARDS

ISO 3795 – International version of FMVSS 302
FAR Part 25 Appendix F Part I: Measures the horizontal rate of burning for certain aircraft components.
ASTM D 5132 – Measures the horizontal rate of burning for flexible cellular and rubber materials used in occupant compartments of motor vehicles
FMVSS 302 (49 CFR V 571.302) : Measures the flammability of all materials used in interiors of cars sold in the United States. (Applies to Canada under CMVSS 302.)
DIN 75200 – Measures the flammability of Polymeric Interior Materials
PSA RENAULT D45 1333

**VERTICAL FLAMMABILITY TESTER**

Widely cited throughout the US And internationally to measure the ignition resistant properties of transportation materials, tents and protective clothing

**STANDARDS**

FAR Part 25 Appendix F Part I (Vertical 12 and 60 seconds)

- Airbus AITM 2.0002A; AITM 2.0002B

- Boeing BSS 7230 F1 and F2

Test Method 5903 Federal Standard 191A.

CPAI 84: Flammability of materials used in tents.

Flame Resistance: Various NFPA Protective Clothing Standards

CA TB 117 Sections AI, BI, & BII

CFM Title 19 1237 Small scale

**APPLICATIONS**

Textiles

Furnitures

Textile interior

Vehicle and Aircraft

PPE

Toys



**Main features**

- Cabinet constructed of all stainless steel
- Solid state digital timer: Automatically controls flame application time and Facilitates recording of "Afterflame" values
- Stationary burner (height and angle adjustable) with gas pilot light
- One Specimen Holder included

# FIRE TESTING

## 45° FLAMMABILITY TESTER

Mandatory tester for all U.S. Apparel fabrics, other than children's sleepwear.

### Main features

- Fully automatic and adjustable timing control (solid state) in 1 second increments
- Stainless steel construction
- Easily replaceable burner tip
- Counting timer automatically activated at time of flame impingement
- One specimen holder included

### APPLICATIONS

Textiles
Furnitures
Textile interior
Vehicle and Aircraft
PPE
Toys



### STANDARDS

CS 191-53 (CFR 1610)

ASTM D1230

NFPA 702

CA TB 117 (2000)

BIFMA

NFPA 1971 section 6-2

ASTM F 963

16 CFR 1610 : Oct. 2008

## FAR MULTI-PURPOSE TESTER

Small scale tester for measuring the ignition resistant properties of aircraft materials under different conditions.

### Main features

Cabinet fabricated out of high quality brushed stainless steel.

Includes:

- Adjustable burner along with Specimen Holders and Support Systems to perform the small scale tests which are contained in FAR Part 25 Appendix F (namely 45°, 60°, Horizontal and Vertical Tests).
- Solid state timer which automatically controls gas flow and records timed events.

Note: This Multi-Purpose Tester requires repositioning of the interior components for different tests.

### STANDARDS

FAR Part 25 Appendix F Part I  
 Part I(b) (4) : Vertical flammability,  
 Part I(b) (5) : Horizontal flammability,  
 Part I(b) (6) : 45° flammability,  
 Part I(b) (7) : 60° flammability.

### APPLICATIONS

Aircraft insulation
Flooring materials
Attic insulation
Carpeting



# FIRE TESTING

MCC

✈️ **FAA LISTED**

Measures multiple fire properties of micro scale samples.

The microscale combustion calorimeter was developed by the Federal Aviation Administration (FAA) to offer industry a research tool to assist the FAA in its mandate to dramatically improve the fire safety of aircraft materials. The tester is becoming a mainstay in research laboratories due to its ability to obtain meaningful test data with a sample size in the range of 0.5 Mg to 50 mg. The tester has been validated by a national consensus organization (ASTM) and is the subject of an ASTM standards publication.

## STANDARDS

ASTM D 7309
ISO TC 61/SC4

### Main features

Measures multiple fire properties of micro scale samples.

Potential measurements:

- Fire load
- Ignition temperature
- Heat release rate
- Flame resistance
- Total heat release
- Melt point



## NBS SMOKE DENSITY TESTER

The most widely accepted apparatus for the measurement of smoke given off by burning materials. Measures specific optical density under flaming and non-flaming conditions. Also for extraction of toxic gases.

✈️ **FAA LISTED**

Available in either ASTM or ISO options or both standards combined.

### Main features

- **Stainless Steel Test Chamber** coated with corrosion resistant lining.
- **Full front door opening** for easy cleaning.
- **Specimen access door** for use during testing.
- **Interchangeable furnace assembly:** ASTM E662 or ISO 5659-2
- **Easy change from ASTM E662 horizontal furnace** to ISO 5659-2 cone furnace
- **One furnace assembly included (either ASTM E662 or ISO 5659-2)**
- **Additional Furnace system** may be ordered as option.
- **Photo Detector & Radiometer (light sensing instrumentation).**
- **Chamber pressure continuously monitored** and digitally displayed on control panel.
- **Automatic over-pressure relief system.**
- **Safety pressure relief blow out panel.**
- **Powered positive venting of smoke effluents after test.**
- **Easy to use Instrument Control Panel.**
- **Data acquisition system** to record data during test

STANDARDS
FAR Part 25 Appendix F Part V
AIM 2.0007
ASTM F 814
ASTM E 662
NFPA 258
AIM 3.0005
BSS 7238
IMO MSC.61 (67) Annex 1 Parts 1&2
BSS 7239
ISO 5659-2





# FIRE TESTING

## FAA OIL BURNER SEAT CUSHION & POWER PLANT TESTER ASSEMBLIES

**FAA LISTED**

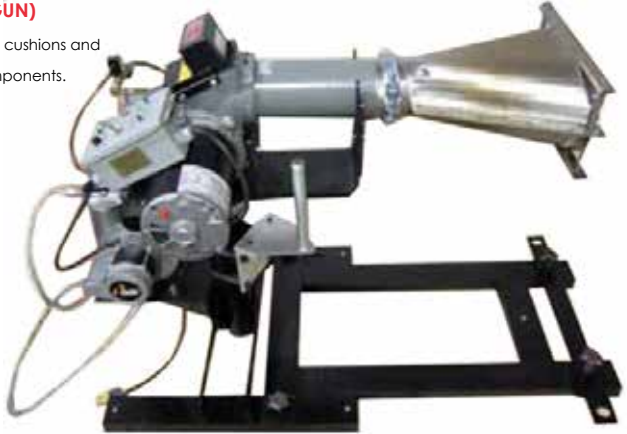
### FAA CARLIN OIL BURNER (MODIFIED GUN)

Determines fire degradation resistance of seat cushions and fire penetration resistance of power plant components.

#### Main features

- Burner Assembly
- Modified gun type,
  - Stainless Steel Extension Cone,
  - Fuel Pump,
  - Fuel Nozzle,
  - Draft Tube,
  - Pressure Regulator,
  - Turbulator,
  - Igniter,
  - Housing cradle.

Burner mounted on rotating support system at specified delivery angle. Self mounting control box included.



STANDARDS
<b>Seat Cushion</b>
FAR Part 25 Appendix F part II
ATM 2,009
BSS 7303

STANDARDS
<b>Power Plant</b>
FAA Handbook Chapter 12
AC 135

### FAA SONIC OIL BURNER (NEXGEN) INSULATION FLAME PENETRATION

The NEXGEN burner is authorized for testing insulation flame penetration. It is unofficially accepted for seat cushion and power plant applications..



STANDARDS
FAR Part 25 Appendix F Part VII

#### Main features

- NexGen Includes:
- Stainless Steel Extension Cone,
  - Fuel Nozzle,
  - Stator, Draft Tube,
  - Muffler,
  - Pressure Regulator,
  - Turbulator,
  - Igniters,
  - Housing cradle,
  - Sonic Choke,
  - Pressure Transducer.

Burner mounted on rotating support system at specified delivery angle. Self mounting control box included.

## CONE CALORIMETER

The most widely used test apparatus to measure heat release properties of materials

### Main features

- High Accuracy Weigh Cell with 0.01g resolution
- 5000W Inconel Tubular Heater
- PID temperature control
- Spark igniter
- Spectrometric shield
- Computerized automated setting of heat flux level
- All stainless steel construction of Hood, ducting, orifice plate, ring sampling probe, and exhaust blower
- Variable speed blower
- Spectrometric holders (stainless steel)
- Smoke measuring system
- Helium-neon laser light source
- computerized calibration and scaling
- Gas sampling and analysis system (Optional items.)

Data Calibration and Reporting

- High Accuracy Data gathering
- Minimum Scan rate – 4 scans per second! Fastest on the market
- Simplified Auto-calibration software
- Data output in Microsoft Excel workbook
- User customizable calculations, graphing and reporting



### STANDARDS

ASTM E 1354
ASTM E 1550
ASTM E 1740
ASTM D 5485
ASTM D 6113
BS 476 Part 15
ISO 5660 Parts 1 and 2
NFPA 271
CAN ULC 135
AS/NZS 3837

# LEATHERS & COATED FABRICS

## TESTING DEVICES FOR LEATHER

Leathers and fabrics are subject to numerous stress tests: crunches and deterioration due to bending, friction (wet or dry), water permeability, porosity steam or distension. These tests can be classified into physical testing families (determines the comfort, performance and product quality, leather ph testing) and biomechanical tests (evaluates product / user contacts)

### RUB FASTNESS TESTER

#### Main Features

This equipment is intended for determining the behaviour of the surface of a leather on rubbing with felt (dry or wet).

In this test the felt may become more or less coloured through transfer of any kind of coloured matter, e.g. finish, pigment, dyestuff and buffing dust and the colour and surface of the leather may become altered.

The machine comes with a digital touch screen.

1,2 or 3  
PROBES

#### Range

- Equipment one or two tables (1 rubbing probes per table)
- Equipment with one, two or three rubbing probes for a single sample under various conditions (dry, wet, sweat)
- Single-user version with heater electrode



#### STANDARDS

ISO 11640

EN ISO 20344 :7.3

EN 13516

IUF 450

SATRA TM173

1 or 2  
TABLES



## «BALLY» FLEXING MACHINE

The "BALLY" flexing machine is intended to determine the resistance of a material to cracking or other types of failure at flexing creases. This method is mainly applicable to all flexible materials and in particular leathers and coated fabrics used in footwear uppers.

**6 OR 12 STATIONS**



### Main Features

- Available with 6 or 12 sample holders
- Bally EL-18F/12 : apparatus with 12 sample holders mounted in a cooling compartment (up to -25 ° C)
- Hybrid Bally EL18/12 : 6 sample holders ISO 17694 ans 6 sample holders NF EN ISO 32100
- Optional second totalizer to display the total number of crunches performed in successive series.



Sample holder for standard ISO 32100



### Specific development

Upper and lower jaws of stainless steel,  
Grooved lower jaws for sample maximum holding

### STANDARDS

NF EN ISO 32100:2011
ISO 17694
ISO 5402-1:2017
EN 13512
SATRA TM55
BS 3144
IUP 20

# LEATHERS & COATED FABRICS

## «BALLY» PENETROMETER

### Main Features

The specimen (any boot or shoe upper leather) is flexed in a manner simulating conditions of wear.

Measurements are made of the following quantities :

- The duration of flexing which is just sufficient to cause water to penetrate through the sample from one face to the other ;
- The percentage gain of weight of the specimen due to water absorption during one or more specified time intervals from the beginning of flexing ;
- The mass of water which is transmitted through from one face to the other during one or more specified time intervals.

The apparatus comprises the following :

- Six pairs of cylinders with 30.0 mm diameter, made of inert, rigid material which is an electrical insulator.
- An electric motor which drives the movable cylinder backwards and forwards along its axis with a crank motion at 50 cycles per minute.
- Four amplitudes of the crank motion can be selected, such that the length of the trough is reduced by : 5% ; 7.5% ; 10% or 15% when the cylinders approach one another.
- Ring shaped clamps to clamp the longer edges of the specimen round the adjacent end of the cylinders so that the leather forms a trough whose ends are closed by the cylinders.
- A tank containing distilled water, in which the trough shaped specimen can be immersed.
- An electrically operated device which provides a signal to indicate when penetration of water through the specimen has occurred.
- Partial counters (one for each test station).
- A digital timer.

**4 OR 6  
STATIONS**



### STANDARDS

EN ISO 20344 :6.13

EN 13518

BS 3144

DIN 53 338

SATRA TM171

IUP 10

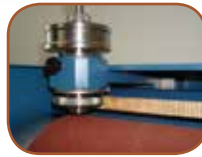
## ABRASION TEST MACHINE FOR SOLE MATERIAL

Equipment for measuring the resistance to wear by contact / friction with the floor of the materials used for the manufacture of footwear (leather, natural or synthetic rubber, PVC, PU).

Model EL-78(R) : equipment is used to assess the abrasion of elastometers subject to wear by abrasive action.



Sample holder



### Main Features

The abrasion machine basically consists of a laterally movable test piece holder and a rotating cylinder to which a specified abrasive cloth is fixed. The diameter of the cylinder is 150 mm and the frequency of rotation 40 Rpm.

The test piece holder consists of a cylindrical opening, the diameter of which can be adjusted and have a device for adjusting the length of the test piece protruding from the opening to 2 mm.

The test piece holder is mounted on a swivel arm, the center axis of the holder have an inclination of 3° to the perpendicular in the direction of rotation and the centre of the test piece to be abraded shall lie within 1 mm directly above the longitudinal axis of the cylinder. The test piece is pressed against the abrasive cloth with a force of 10 N and the lateral displacement is approximately 4,2 mm per revolution of the cylinder, so that the test piece is only rubbed four times across the same area of the abrasive cloth.

The test automatically stops at the end of the abrasion distance.

## LABORATORY MILL

### Main Features

This equipment is used to reduce the samples to small pieces to later be used for chemical tests.

The laboratory mill basically consists in three pairs of double sided knives. One Knife in each pair is stationary and one rotates at a velocity that can be adjustable by the operator through a digital controller between 700 and 1000 Rpm.

Sample is collected through a 4 mm grid

This machine is also equipped with a timer to program the grinding cycle.

This machine is equipped with efficient security systems to prevent injuries to the operator.



### STANDARDS

ISO 4044

BS 1309

IUC 3

# LEATHERS & COATED FABRICS

## LONGITUDINAL & TORSIONAL STIFFNESS OF COMPLETE FOOTWEAR

### Main Features

The main purpose of this equipment is to evaluate the confort of the complete footwear. To perform this evaluation is measured

- Longitudinal stiffness of footwear (SATRA TM 194)

The force required to flex the footwear to an angle representing a 50° flex of the foot or the maximum angle can be achieved without exceeding a critical bending moment is determined. The longitudinal stiffness of the footwear is then calculated using either the force applied or the flex angle that is achieved.

- Torsional stiffness of footwear (SATRA MC 256).

The test specimen is twisted along its length to a fix angle of twist. The moment required to twist the test specimen is recorded as a measure of the torsional stiffness.

The machine is supplied complete with software and IT hardware.



STANDARDS
SATRA TM 194
SATRA TM 256

## SHOCK ABSORPTION TESTER

This test equipment has the purpose to evaluate the shock absorption properties of materials or assemblies. The test method is essentially applicable to footwear bottom units of complete footwear, however can also be used with any compressible sheet materials, namely those used for footwear midsoles and solings.

### Main Features

During the test an impact striker with suitable mass and design is dropped vertically from a determined height in way to subject the specimen to a standard impact.

The integrated computer monitor system automatically assesses and records the following values:

- Specimen thickness ;
- Maximum penetration ;
- First rebound ;
- Energy return ;
- Maximum deceleration.

All the performed tests are automatically stored in the software database together with the operator, client and product identification



STANDARDS
SATRA TM 142



## ELECTRONIC LASTOMETER

The Electronic "Lastometer" is intended to assess how much a material can be stretched (distended) simultaneously in two directions without being damaged. This simulates conditions experienced during the lasting operation in footwear manufacture. This method is mainly applicable to footwear upper materials but can be used to assess any sheet material such as leather, plastics and textiles.

### STANDARDS

NF EN ISO 17693
EN 13511
ISO 3379
SATRA TM24
BS 3144
DIN 53325
IUP 9 et SLP 9

### Main Features

During the test a circular specimen of the material is clamped round its edge and is gradually distended by forcing a small metal ball attached to a plunger through the specimen. At a certain distension, measured in terms of distance travelled by the plunger, either cracks appear in the surface of the material or a lower layer of the material sustains physical damage, this distension is recorded as the first damage point. At a higher distension the material usually bursts and this distension can also be recorded. Data can be exported on a computer via RS 232 port



## WATER VAPOUR PERMEABILITY TESTER

This test machine is used to assess the water vapour permeability.



### Main Features

The apparatus is composed by the following elements :

- six jars fitted with a screw top with a circular opening whose diameter is equal to the diameter of the neck of the jar ;
- a holder in the form of a disc which is rotated by a suitable electric motor ;
- a fan mounted in front of the mouths of the jars and consisting of three flat blades, placed in planes that are inclined at 120° to one other.

The air inside the container is constantly agitated by the desiccant which is kept in movement by the rotation of the jars.

All moving parts requiring access are protected by a fully interlocked safety guard ensuring that the machine conforms to the European latest safety regulation

### STANDARDS

EN ISO 14268
EN ISO 20344:6.6
EN 13515
IUP 15
SATRA TM 172

# LEATHERS & COATED FABRICS

## «PLIS CROISES» FLEXING MACHINE

This equipment has the main purpose of the behaviour of leather, artificial leather and similar sheet materials when subjected to repeated folding.

The present method has the double objective of determine the solidity of leathers when submitted to repeated flexing cycles assimilated to rubbing movements and also the mechanical aging generated can be considered like a preparation of test sample to the determination of the leather solidity to rubbing.

This machine is equipped with 8 workstations

### STANDARDS

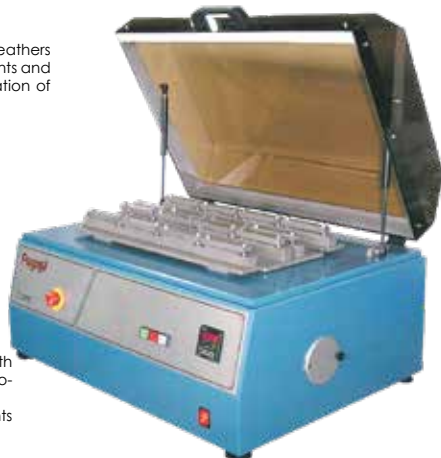
NF G52-020

### Main Features

This machine comprises the following elements :

- 8 pairs of clamps with suitable surface for tightening the test specimen, with dimensions 801x20 mm. At initial position they present themselves face-to-face for the insertion of specimens,
- an electric motor moves the clamps in two alternative movements according to the perpendicular axes,

- Clamp A moves according to a perpendicular to XY axis, the half stroke is adjustable. This movement is performed for both sides from the initial position. The frequency of the movement is 60 revolutions/min.
- Clamp B moves according to XY axis of the test specimen. The stroke is fixed with a value of 5 mm. The movement has a double frequency regarding to the other clamp.



## VELCRO FATIGUE TESTER

This equipment is intended to submit touch and close fasteners to repeated opening and closing cycles to simulate use. The touch and close fasteners subjected to these cycles are intended to be use in subsequent physical tests intended to measure the residual mechanical strength characteristics..

## VELCRO CLOSING MACHINE

This equipment is intended to press the two parts of the touch and close fastener together under controlled conditions, prior to determining the peel and shear strength.

### STANDARDS

SATRA TM123.



### STANDARDS

SATRA TM123.

EN 1414/A1

### Delamination Jaws

We then evaluate the variation in the force required to open using a dynamometer equipped with jaws adapted to delamination tests.



## STEEL TOE CAPS IMPACT TESTER

Measures the impact resistance of the toes of safety footwear and steel toe caps, also suitable for the metatarsal test

### Main Features

The impact system that is attached to a solid and compact metal base incorporates a striker of suitable mass and design, adapted to fall freely on vertical guides from a predetermined height to give the required impact energy.

The required impact energy is selected by the operator and then the striker mechanism moves automatically to the pre-set height. A mechanism catch the striker after the first impact so that the test specimen is struck only once. Several striker heads and clamping devices can be interchanged according to the standards.

This test equipment allows to measure the impact resistance the steel toe caps and provide also metatarsal test.

All moving parts requiring access are protected by a fully interlocked safety guard ensuring that the machine is conforms to the European latest safety regulations.

### STANDARDS

EN ISO 20344:5.4 Determination of the impact resistance
EN ISO 20344:5.16 Determination of impact resistance of a metatarsal protective device
EN 12568 Foot and leg protectors. Requirements and test methods for toecaps and penetration resistant inserts
ASTM F2412-05
ISO 5423
SATRA TM161
DIN 53543:6.3
CAN/CSA Z195-02



# TESTS ON PPE

## «BENNEWAERT» FLEXOMETER

The fatigue flexing test is done to assess the resistance of soiling materials such as PU, thermoplastic rubber, rubber, PVC, and other soiling materials to crack formation and growth under changing flexural stress.

### Main Features

The testing machine is supplied with three workstations having each one a fixed and moving test piece clamp all of them presented horizontally for operator ease and comfort. The test specimens are guided in such a way that on one side it can be bent at an angle of 90° about a mandrel with a radius of 15 mm at 140 flexes per minute. The design of the flexing device ensures that in bent condition, the plane formed in a stretched condition by the two clamped faces over the outline perimeter of the flexing roller will not change its length, so that the stretch of the test specimen depends only on the roller diameter and the thickness of the test specimen.

#### STANDARDS

EN ISO 20344 :8.4

ISO 5423

DIN 53543 :6.3

SATRA TM161



## SHOE LACE ABRASION TESTER

Apparatus for control of the resistance to the abrasion of shoelaces in repeated rubbing on carnations standards or the abrasive action of a carnation on the shoelace.

This test is applicable to any types of shoe laces and carnations.

2 models according to standards to be assessed

**6 OR 12 STATIONS**



#### STANDARDS

BS 5131:3.6

NF G62-020

SATRA TM 93

## SLIP RESISTANCE TESTER

Slip resistance is based on the frictional force necessary to keep a shoe or crutch tip from slipping on a walking surface under conditions likely to be found during walking. The coefficient of friction, which can be measured in several ways and with several test surfaces, provides a close approximation of the slip resistance.

### Main Features

The determination of friction or slip resistance is a procedure that requires the careful and accurate monitoring of several parameters in real-time to assure high accuracy of results.

The determination of the coefficient of friction requires the control of the following test parameters :

- \* Applied load ;
- \* Speed of test surface ;
- \* Static contact time ;
- \* Point at which coefficient of friction is determined.

The equipment control software assures the control of the machine and manipulates acquired data according to the parameters required by the suitable test standards. The software interface is also very powerful and extremely user friendly.

This equipment allows customers to set up in-house facilities for testing the slip resistance behaviour of footwear in several surfaces and test conditions.

### STANDARDS

EN ISO 13287

SATRA TM 141



# TESTS ON PPE

## EXPOSURE TO A SOURCE OF RADIANT HEAT

This equipment was developed to assess the resistance of protective equipment to radiant heat

### Main Features

This test equipment has the following essentials characteristics :

- The equipment subjects the specimens to high radiant heat (1.100 °C) and reads the temperature of the specimen that is shown in an integrated display of the control unit.
- The equipment is composed essentially by three parts : the source of radiant heat, the specimen holder and the control unit.

### STANDARDS

ISO 6942

EN 15090:7.2



### RADIANT HEAT TEST APPARATUS

Protective clothing against Radiant Heat may be used in a wide range of applications. It may be required to protect workers against a low intensity heat for a long period of time, alternatively the intensity may be rated as medium or high, but the time period will be adjusted accordingly.

The Radiant Heat Test Apparatus may be used to test the material in two ways. In the first test the specimen is subjected to a level of thermal radiation. In order to represent the most server conditions for the material, very little heat is conducted away from the sample. Changes in appearances are recorded.

In the second method, a calorimeter is placed behind the sample, and so conducts heat away from the back of the material. The temperature rise is recorded against time and the heat transfers are determined. The radiation source consists of silicon carbide heating rods. The test frame is constructed from a non-combustible board, and is easily adjusted to set the required heat flux density.

A water-cooled protective screen protects the heat source until the test begins.

### STANDARDS

ISO 9151

BS EN 367





# PPE GLOVES

## EN 388 STANDARD

### TDM-100 TOMODYNAMOMETER

Apparatus for the control of the resistance to the break of cloths.



#### STANDARDS

EN 388
ISO 13997
ASTM F 1790-05

#### Main Features

TDM-100 was developed to allow to test a very large range of subjects, from leathers or cloths little resistant to the break up to very resistant technical cloths.

Results acquired with the TDM-100 are not influenced by the thickness of the sample or the sense of displacement of the blade because the machine was conceived for a constant horizontal speed of the blade and a constant perpendicular force during all movement.

**NEW EN 388  
CLASSIFICATION**

## 'COUPTEST' CUT RESISTANCE TESTER FOR GLOVES

Apparatus for the control of cut resistance on safety gloves.

Evaluation of resistance compared with a cloth witness in cotton cloth.

#### Main Features

The "Cut Resistance Tester" is intended to assess the resistance to cut of footwear uppers and safety gloves.

The sample to test is positioned in the sample holder and the equipment is activated. It automatically stops as soon as the material is cut and the display shows the number of necessary cycles to cut it.

All moving parts requiring access are protected by a fully interlocked safety guard ensuring that the machine conforms to the European latest safety regulations. Design is suitable for thick or heavy knitted gloves and quick swop of sample holders by sliding system.



Adjustable blade speed compliant with  
new the version of EN 388

Speed :  $8 \pm 2$  cm/sec

Force :  $5 \pm 0,5$  N



# OTHERS EQUIPMENTS

## VVC FUNDAMENTALS

VVC Fundamentals are all in one kits designed and prepared to perform your tests simply



### A LAB TO START WITH

#### Color Management :

- 1 Light cabinet VériVide MUNSELL N5 CAC 60 - 600 mm (Illuminants D65 / TL 84 / F / UVB)
- 1 X-Rite RM200 CAPSURE Color Matching Tool
- 1 Crockmaster for colour fastness to rubbing tester

#### Quality control :

- 1 Grey Scale for assessing Change in Colour ISO 105 A02
- 1 Grey Scale for assessing Staining ISO 105 A03
- 1 Sample Cutters (100 cm<sup>2</sup> Specimen Area) and a analytical balance (Accuracy 0.01g ; Weight range : 150 g) to determine the weight per unit area of the material
- 1 Kit 3in1, comply with EN ISO 3759: 2008 including : 1 withdrawal template with mark 200, 350 and 500 mm,
- 1 withdrawal ruler 1, 6 Texpens markers (diameter 1.2 mm, Yellow) 1 roll Multifibre DW ISO 105F10 (sample)
- 1 9x Double Lens Thread Counter (10 x 10 mm, 1 mm scale)

### COLOR EVALUATION KIT

The kit for evaluating optimal color.

Visual color evaluation may be distorted by the environment. It is therefore necessary to «normalize» the viewing environment and to have reference color swatches. VVC has created for you the colors Evaluation Kit.

The evaluation kit consists of :

- 1 Light Cabinet CAC60 VériVide equipped with individual counters. The frequency of changes of the lamps is programmable. It comes with the following illuminant D65, TL84, F, UV. The walls are covered with a gray interior paint Munsell N5:
- 1 45° Fixed angle table suitable for CAC-60 : Creates standardised viewing geometry at the angle where light is incident. Ideal for colour fastness assessment.
- 1 Grey Scale for assessing Change in Colour ISO 105 A02
- 1 Grey Scale for assessing Staining ISO 105 A03



### AREA DENSITY KIT

Kit to determine the weight per unit area of the material : a classic laboratory quality control testing textiles.

The weight per unit area is a physical quantity that measures the mass per unit area which is used to characterize the fabrics and textiles. It is measured using a cutter and a scale.

1- 100 cm<sup>2</sup> sample cutter : enable you to cut out rapidly and accurately circular specimens of a fixed diameter.

- 1 suitable digital balances for weighing the cut specimens (Accuracy 0.01g ; Weight range : 150 g)



**VVC range : Thickness gauging**

Apparatus for measuring the thickness of any material; paper, cardboard, textile, plastic, nonwoven ...

This range of thickness gauges can be customized to your needs by adding additional weights for another standard to fit on the existing equipment

**Multi-standard tester, presser feet are interchangeable**



**Main features**

**Presser feet and weight are interchangeable**

**Digital interface USB**

**Possible measuring ranges : 0 – 12 mm, 0 – 25 mm**

**Available scale divisions 0.001 mm, 0.01 mm**

**Software to save measurement values in an Excel table**

STANDARDS
EN ISO 5084 : Textiles & Non-Wovens
Renault D45 1195 : Textiles & Non-Wovens
EN ISO 9073-2 : Non-Wovens
EN ISO 964-1 : GeoTextiles
EN ISO 53855 : Non-Wovens
EN ISO 53015 : Paper
ISO 2589 : Leather
NF G07 121-2

APPLICATIONS
Textiles
Non-Wovens
GeoTextiles
Paper
Film
Leather

**Also available**



Wide range of fast-acting thickness gauges

RANGE				
	APPLICATION	STANDARD	PRESSER FEET	WEIGHT
D-20XX T	Textiles & Non-Wovens	EN ISO 5084	20 cm <sup>2</sup>	0.1 kPa & 1 kPa
	Test Method RENAULT/PSA D45 1195		Ø 50.0 mm (= 19,63 cm <sup>2</sup> )	
D-20XX V	Non-Wovens	EN ISO 9073-2 §5.1	25 cm <sup>2</sup>	0.4 kPa & 0.5 kPa
D-20XX G	GeoTextiles	EN ISO 964-1	25 cm <sup>2</sup>	2 kPa & 20 kPa
D-20XX NW	Non-Wovens	EN ISO 53855	25 & 10 cm <sup>2</sup>	0.5 kPa, 1 kPa & 5 kPa
D-20XX L	Leather	ISO 2589	0,785 cm <sup>2</sup> - Ø 10 mm	49,1 kPa

**Thickness gauging as per ISO 9073-2 § 5.2**

**Nonwovens measure vertically. It has the function of measuring the thickness of the bulky nonwoven: Sample thickness less than or equal to 20 mm.**

**Main features**

- The test specimen is suspended vertically attached to a needle.
- The probe moving horizontally exerts a pressure of 0.02 kPa over the reference plate.
- The measurement is taken when the red LED lights.

STANDARDS
ISO 9073-2 § 5.2
EDANA 30-5.99 § 4.2 : Non-Woven volumineux



# OTHER EQUIPMENTS

## VVC AUTOMOTIVE EQUIPMENTS

### SCRUBB CREASE MACHINE

The Scrubb can measure the resistance to creasing of fabrics coated with rubber or plastic. The floating part of the sample is subjected to friction from a pad equipped with a load. The control of the degradation is carried out visually, after a certain number of cycles.

Supplied with 2 pairs of pads width 10 mm or 11.5 mm and block thickness 6 mm as per ISO 5981:2007

#### Main features

The unit includes 2 test positions, i.e. 4 jaw, parallel 2 per 2.

They are animated by a movement of alternating translation, according to a direction perpendicular to their axis

A pad presses on the free part of the sample and is under load itself

A counter totals the number of cycles in progress.

A programmer can select a number of cycles; to that number, the unit will stop automatically.

Buttons for quick clamping.

Sampe holder

The cylindrical guide rails are replaced by guide pads without maintenance and lubrication free.

The arm support pads is amended to allow a quick change type of pad without removing the support arm.

20R4  
STATIONS



STANDARDS
NF EN ISO 5981
PSA/Renault D42 1007
With modifications : pads width 11.5 mm instead of 10 mm
NF G 37.110
SNV 18 – 498

### AUTOMOTIVE USOMETER

This ABRASIMETER allows the user to test the resistance of various textiles (woven, knitted, composite, plastic coated fabrics) by friction tests

#### Main Features

New design with safety protection,

Exclusive automatic change of abradant fabric (optional),

Robustly built for constant use

Easy and quick to install

Simple maintenance



APPLICATIONS
Automotive

STANDARDS
NF G 37 110
PSA D44-1073
SNCF 284F

## SOILING RESISTANCE TEST MACHINE

This equipment is compliant with two separate standards :

- Renault D45 1817 Test method : Resistance to soiling materials and organic coatings.
- Renault D14 1055 Test method : Evaluation or comparison of holding to chafing

### D14 1055

The device consists of a white painted sheet metal box. This box receives, at its upper part an aluminium backing plate. This plate receives a movable carriage mounted on guide rails. The trolley is equipped at both ends of clamping jaws for gripping two strips of soiled fabrics.

On each side of the box, there is a height-adjustable support. Each carrier can receive either a cylinder of 29 mm for samples leather, a cylinder 75 mm in tissue samples, a universal support for the other samples.



### D45 1817

Evaluate the resistance to fouling organic materials and coatings of the passenger asked to be manipulated or prolonged contact with the occupants of the vehicle.

On each side of the box, is a support adjustable in height by a carriage guided on the top of the machine. Each carrier may receive either a cylinder 29 mm for the samples in leather, a cylinder of 75 mm for the samples in tissue, a universal support for the other samples.



The unit comes complete with sample holder adjustable in height, weight 1 kg, clamp bands dirt.

### STANDARDS

D45 1817 :
Resistance to soiling materials and organic coatings.
D14 1055 :
Evaluation or comparison of holding to chafing

## VVC DOWNPROOF TESTER



### STANDARDS

BS 12132
EN 12132-1
STS 47

Downproof Tester, To determine the downproof capability of fabric used for downgarnet, quilt etc, which are filled with down, feather and fibers. Take an agreed size specimen from the fabric to be tested to sew a pocket at specified size , fill with a certain weight of down, feathers or a mixture of both, then sew the fabric up to be a testing bag. Clamp the both sides of the bag in the holder. After test to determine the downproof ability of the fabric by calculating the number of down and feathers through the fabric

- Fixture space:  $44 \pm 1$  mm
- Eccentricity:  $25 \pm 0.5$ mm
- Speed: 135 r / min
- Sample size: 140 x 420 mm
- Cushion size: 120 x 170 mm
- Test times: 2700, settable
- Counter: 0 to 999,999 times

# OTHERS EQUIPMENTS

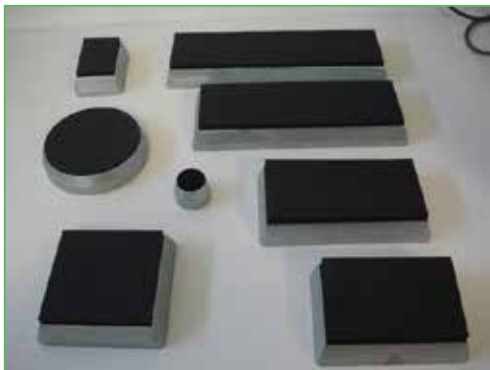
## ACCESSORIES

### ECOLOG

precision measurement data loggers can measure temperature in the  $-200^{\circ}\text{C}$  to  $+550^{\circ}\text{C}$  range, using a wide range of PT100 sensors. A large display shows the current values as well as alarm information. Four buttons on the data logger have been provided for control and configuration.

An audio/visual alarm or radio alarm or telephone dialer can be connected to the data logger for alarm alerts. It is also possible to directly print collected data, alarm information and status using a printer.

64,000 sample memory



### Sample Cutters

In addition to the existing standard range, we consider any request to create your own press knife.

Please specify:

- The form
- Carved in the mass or welded
- With or without ejector
- Special treatment

### Dimensional stability assessment kit

- Withdrawal template with marks 200, 350 and 500 mm and arrows indicating the direction of the fabric
- Rules for withdrawal with direct reading at 200, 350 and 500 mm +/- 10%
- Dalomarker and Texpens textile



Dalomarker  
marking

Tip diameter: 1.6 or 3.2 mm



Texpens  
for templates

Tip diameter: 1.2 mm



# DRAPE TESTER

VVC

«Drapéomètre au tombé», to evaluate the fall and drape of a fabric



## Main features

- Tray diameter 150mm with 16 measuring angles
- Measuring amplitude range from 75 to 135 mm
- Tracing template 250 mm

## STANDARDS

NFG 07 109

The «drape» or «drop» of a textile determines the hand of a fabric and «the look» of such a garment a skirt, a dress. This is an important visual feature.

Simple and affordable version without concession to the accuracy, timeliness or accuracy of measurements, this equipment provides an objective and reproducible measure.

VVC

# MEASUREMENT OF YARNS

## Torsiometer

This equipment is used to determine twisting values of single and twisted yarns. Test length variable from 1 to 50 cm. and from 1 to 20 inches. Special models for tests on 1 or 2 m. length. This equipment is used to determine twisting values of single and twisted yarns. Test length variable from 1 to 50 cm. and from 1 to 20 inches. Special models for tests on 1 or 2 m. length.



## Main features

- Number of turns up to 9999
- Digital counter
- Pretension: up to 88 gr. depending on the yarn
- Speed: 0 A 1000 turns / min.
- Minimum and maximum value of tests
- Average value of 50 trials maximum
- Standard deviation and % C.V.
- Data output RS232 with computer interface
- Possibility of an optional printer

## Wrap-reel

This equipment allows preparation of hanks with preset required length. An electronic operated motor provides a gradual and smooth start/end and free swift automatic stop when the test is over.

## Main features

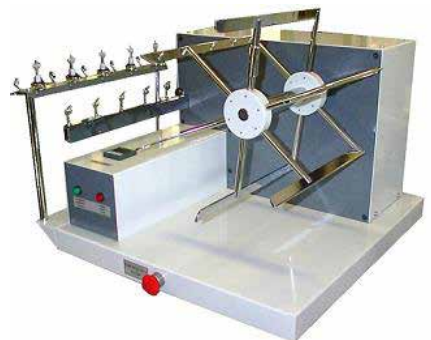
- 5 positions,
- Circumference 1m,
- Winding Width 25 mm

## STANDARDS

ISO 2060
BS 2010
DIN 53830/1
ASTM D 1907-2260
UNI 8717

Available in two versions:

- Simple and economical model with manual mechanical counter,
- Electric model with digital counter with preset, adjustable speed from 0 to 150 rev / min Automatic braking in the final round to smooth stop. Comes with creel and tensioners.



# OTHERS EQUIPMENTS

## SAFGUARD

This instrument can measure accurately if an accessory (button, snap ...) is attached to the garment properly and avoid possible accidents.

It also assesses the fixing part on other products as clothing such as toys.

### Equipment specially designed to meet the standard EN 71-1

#### Main features

**This controller is the only security test tool that provides an accurate means of measurement fasteners on clothing accessories: buttons, snaps ...**

**It evaluates various criteria such as:**

- The strength of the attachment,
- The risk of failure,
- The risk of catching exterior ...

- The instrument can be customized according to standard norms, manufacturers standards or your own ratings.

The goal remains the same: consumer safety

Examples of options available

- Torsion Test
- Zip Test and functions,
- Switching Test by weight,
- Peak detector

#### STANDARDS

EN 71 : Toy Safety Testing Standard

ASTM F963

ASTM D4846-96

M&S P115A (Snap)

M&S P115 (Buttons)



Test for female part of snap & male part of stud



Upper long nose vise grip



Upper stud grip



Upper Grasp button grip





## TEST MATERIALS



### ■ Adjacent Fabrics

Multifibre DW - European (ISO 105 F10),  
Multifibre DW - American,  
Polyamide, Polyester, Cotton Limbric,  
Cotton Drill, Cotton Batiste,  
Wool, Linen, Acetate, Viscose,



### ■ Martindale Test Materials

Nonwoven Felt Pads,  
Woven Felt Pads,  
Abrasive Cloth SM25,  
Automotive Abrasive Cloth,  
Foam,  
Ball Plate & Contact Line,  
Klingspor PL31B Grit 180...



### ■ Wascator & Gyrowash

ECE Detergents, IEC Detergents,  
AATCC Detergents,  
Chemicals (TAED, Perborate...),  
Makeweights,  
Steel Discs...



### ■ Accessories

Grey Scales ISO 105 A 02 & A 03,  
Yellowing Test Kit,  
Photographic Standards,  
Blue Wools,  
DIDP,  
Cotton Lawn & Crocking Cloth...



### ■ Other equipments

Bursting Strength Tester,  
Crockmaster,  
Veslic, RTPT,  
Standard EN 388,  
Flexiburn...

# SERVICE & CALIBRATION

- strenght
- elongations
- linear speeds,
- rotation speeds,
- tear strength,
- air temperature
- bath temperatures,
- bearing forces,
- distances,
- masses,
- dimensions.

**We calibrate any type of physical laboratory equipment for textile, leather, composites ...**

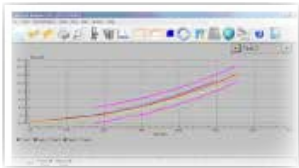
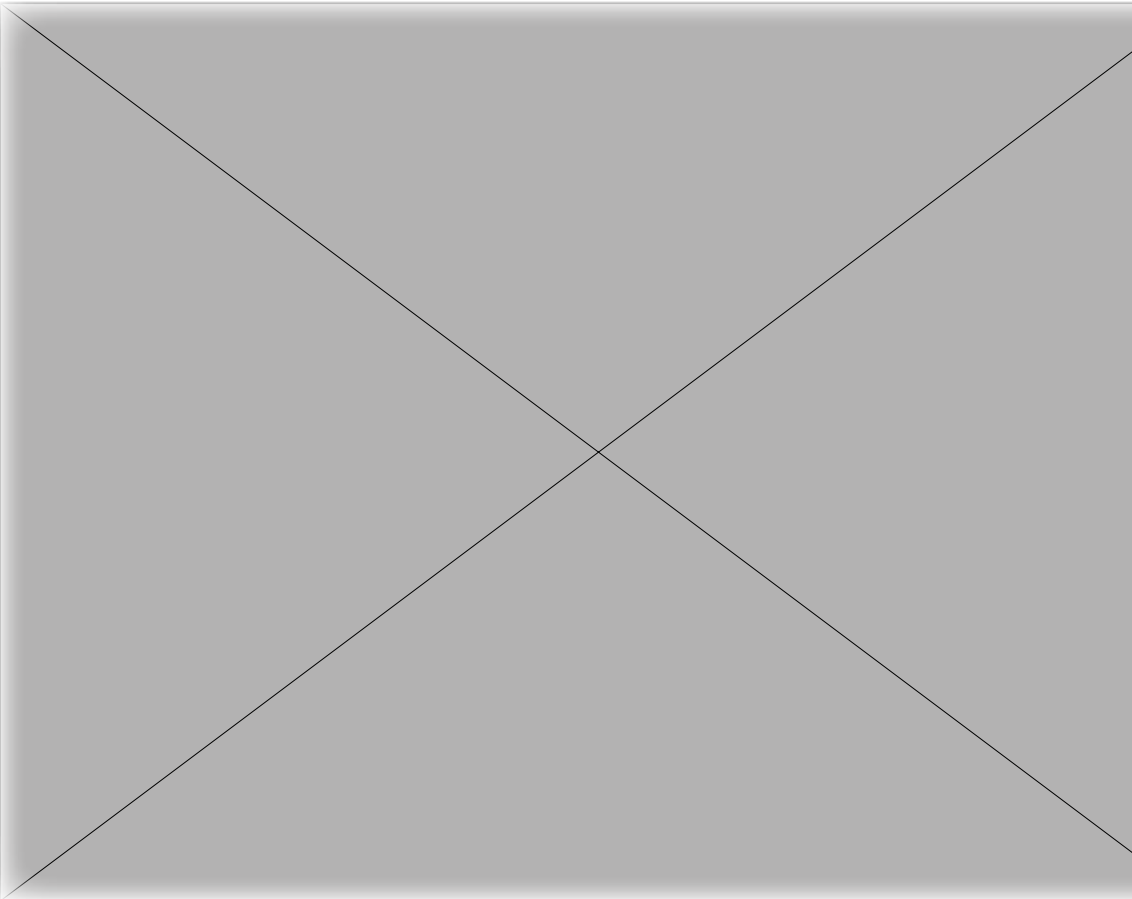
**We provide a certificate of calibration or verification according to fascicles FDX.07.012 and FDX.07.11, connected to EN ISO 17025.**

**We can offer UKAS accredited services (member of EA, equivalent of COFRAC) on request.**



**Our team of experts provide complete services including : installation and training, test materials, metrology and maintenance.**

# SHOW ROOM



**Our showroom is dedicated to all our customers.**

**You will have the opportunity to test our equipments on your own samples.  
It is open and running on all the products in our range.**

**Our métrologue will present and explain the features of the systems according to the standards that apply to your business.**



**A friendly place where VVC organizes regular thematic «Open Doors Event» : the Leather, Understanding & Controlling color, Air permeability & Water Resistance ...**

**Equipped spacious meeting room with last computational tools and software business will prolong the discussion on your project and its own specificities**

**The VVC experts will present the best solutions to meet them.**



**VVC**

PRÜFTECHNIK



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