

**PROWHITE<sup>®</sup>**  
**TEST EQUIPMENT**

# About Us

PRO-SER has been producing test equipments and auxiliary test equipments at BS, DIN, ISO, AATCC standards since 1998 till present.

PRO-SER, which offers the entire product portfolio to the end users with the PROWHITE brand, reaches its customers directly to different countries or through its dealers.

PRO-SER company which is formed by combining the founders of the company Seven Yılmaztürk and Cengiz Yılmaztürk's experiences in technology, textile, education and food fields. Today, PRO-SER has become an international company that has been recognized all over the world with its expert staff and wide technological capability. Besides standard testing equipments PRO-SER has the capacity to produce new technological test equipments thus became a solution oriented partner to many other companies all over the world.

The production process of products is done with strict discipline standards in order to guarantee 100% compatibility and continuity. We would like to thank through this catalogue over 3000 customers whom have been trusting and working with us since 1998.





**Fabric Testing**

## FABRIC STRENGTH TESTER



It used to measure the strength of fabrics and similar products. The maximum strength is 5 kN or 50 kN. It has value reading features for the maximum force applied during tear-up moment. The device saves the tear-up/ break-up resistance of the sample pressed via jaws upon kgf or Newton value.

The tear-up operation is conducted automatically through an adjustable engine. The device has lengthening measurement features (with 0,01 mm precision). Together with the device, a set of jaws is provided. The movement length except for jaws is 1000 mm.

The device's measurement is electronic load cell. USB connection data output is standard. The computer, program and printer is optional.

K001-DC-5 : 5 kN Strenght Tester

K001-DC-50 : 50 kN Strenght Tester

Standards		
FABRIC STRENGTH		
ASTM D 5034	ISO 5081	ISO 9073-3
ASTM D 5035	M&S P11	ISO 3376
ISO 13934-1	M&S P11A	ISO 14704
ISO 13934-2	M&S P11B	M&S P43
ISO 1421	M&S P11C	NEXT TM 27
NEXT TM 36		
TEAR STRENGTH		
ASTM D 5587	ISO 13937-2	ASTM D 2212
ASTM D 2724	ISO 13937-3	ASTM D 5735
ASTM D 2261	ISO 13937-4	NEXT TM 25
ISO 11644		
BS 3424:Part 5		
SEAM STRENGTH & SEAM SLIPPAGE		
ISO 13935-1	ASTM D 5822	ASTM D 434
ISO 13935-2	M&S P12	ASTM D 1633
ISO 13936-1	M&S P12A	M&S P12C
ISO 13936-2	M&S P12B	NEXT TM 16

**PULL TESTER****Digital****Analog**

Capacity: 10-20-50 kgf  
 Excluding jaw motion path: 180 mm.  
 That's a type of desktops model. Easy to use.  
 It is used in the experiment of pulling breakage the specimens.  
 It has digital or analog indicator.  
 There is the possibility of changing Newton or kg

**K-001A:** Analog Pull Tester

**K-001D:** Digital Pull Tester

**Standards**

En71 Part 1, CFR 1500, ISO 8124, M&S P115

**K-002**

## LIGHTBOX-COLOR ASSESSMENT CABINET



Carpet Testing Equipment

It is used to perform color evaluation and color comparisons under standard light sources. Together with D65 daylight, which offers the best alternative to natural daylight, there are other models offering numerous light sources such as TL84, D50, TL83, F-INCA, UV and U30. The device has an electronic controller on which, the lamp life and its features can be observed.

Models with 4 or 5 light sources are available and can be ordered with observation areas of 60- 120 and 150 cm. Desktop and suspension type models are available.

We also have light cabinets in different sizes and specifications

### Standards

AATCC 61,133,132,117,116 ,109,8, 15,16,23,190,ASTM D1729,BS 950 PART 1,  
ISO 105-C09,C05,C01,C02,C03,C04,C06,C07,C08,X11,NEXT 18,8B,18A,10,9A,9,7B,7A,  
7,6,5,4A,4,3A, 3,2

**K-003**

## CREASE RECOVERY TESTER

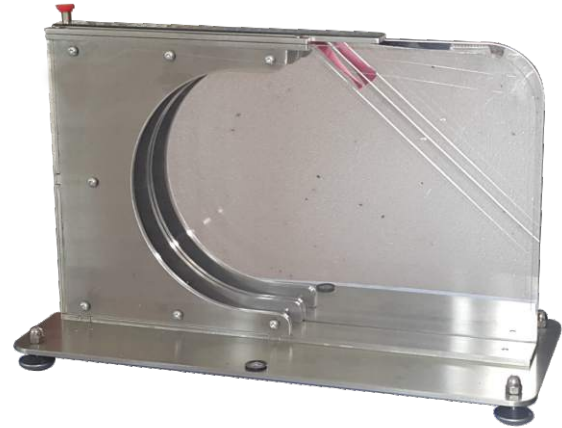


Fabric Testing Equipment

It is used to analyze the fabric's folding recovery angle. According to standards, it is used to measure the angle which occurs following the lifting of the pressure applied on the folded fabric.

**Standards**

ISO 22313, BS EN 22313, EN 22313, NF G07 110, AATCC 66, M&S P22

**FABRIC STIFFNESS TESTER****ASTM D1388****ISO 4604**

It is used to determine the stiffness of the bending and torsion of the fabric. It is a full set with bending analyse ruler and pusher slide

**Standards**

ASTM D1388, BS 3356, DIN 53362, ERT 50-2, TS1409, ISO 9073-7, ISO 4604

**K-005**

## PNEUMATIC FABRIC STIFFNESS TESTER



Fabric Testing Equipment

It used to determine the fabrics hardness according to the ASTM Circular Bending Testing Method. The maximum measurement value is 50 kgf.

It has fixation features at the maximum value and the device runs with Standard pressurized air.

Device has USB computer output.

**Standards**

ASTM D4032

## DRAPE TESTER



It is used to determine the fabrics drape coefficient by scanning the shade of the draped fabric on a paper, the drape coefficient is calculated. There are two different models, including computer-controlled and manual.

K029-A : Drape Tester (with camera and PC control)

K029-M : Manuel Drape Tester

### Standards

BS 5058/EN 9073 , UNI8279 , AFNOR G07-109 , ERT90-1 , ISO9073-9, TS 9693

## ELMENDORF TEARING TESTER



It is used to measure ballistic tear strength of the textlematerials, paper and paperboard by its micro-processor vertical moving pendulum.

There are die-cuttings,cutters used for sample preparation. It has 800(A)-1600(B)-3200(C)-6400(D)-12800(E)cN pendulums.

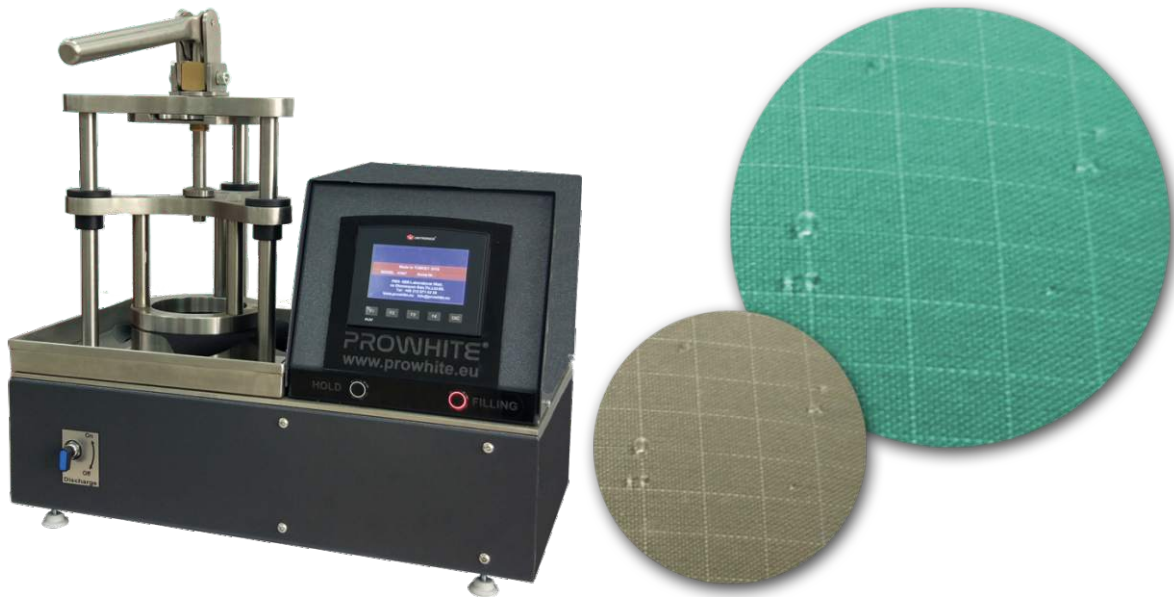
It is possible to see the results and statistical information of the pendulum and the number of samples used on the touch screen at the end of each test by chosing the units mN,cN,N, g,kg,oz and lb as the unit of tearing strenght.

The USB output on the device is available as standart.

### Standards

BS 4253, BS EN ISO 13937-1, BS 4468, ASTM D1424, DIN 53862, M&S P29, ISO 9290, ISO 4674-2, ASTM D5734, NF 609-149, ISO 9073-4, ASTM D689, DIN 53128, EN 21974, ISO 1974, JID P8116, TAPPI T414, SCAN P11

## HYDROSTATIC HEAD TESTER



Device is determined the waterproofing properties of the fabrics by the hydrostatic pressure method. The device is primarily designed for thick fabrics. The hydrostatic test head covered with the fabric allows the water permeability of the fabric to be measured. The fabric sample is exposed to water pressure increasing at a constant rate from one surface under standard conditions until 3 drops of water have passed. Water pressure in the third place where the water passes recorded. The speed of pressure increase and the unit of measurement can be changed on the touch screen.

The sample area is 100 cm<sup>2</sup>. According to different standards, the sample area can be ordered in different sizes.

### Standards

AATCC 127, AFNOR G07-057, ASTM D751, ASTM F1670, BS 3321, BS 3424-26, BS 3424-26, BS EN 20811, EN 343, ERT 120-1, ERT 160-0, GB /T 4744, ISO 811, ISO 9073-16, ISO 16603 PART A, ISO 16603 PART B, ISO 16603 PART C, ISO 13994 PART A, ISO 13994 PART B, ISO 13994 PART C1, ISO 13994 PART C2, JIS L1092-A, WSP 080.6.R4 (12)

**K-008**

## AIR PERMEABILITY TESTER



The device is designed to determine air permeability in fabrics. It is used in all types of fabrics, including industrial fabrics, nonwoven fabrics and textile products with air permeability.

20 cm<sup>2</sup> sample holders and calibration plate are supplied with the device as a standard.

Possibility of decreasing pressure up to 2500 pa.

Air permeability can be recorded in different units of measurement. It can be controlled from its digital screen. Test methods are installed on screen according to many different standards and new standard entry can be easily done.

5-25-38-50-100 cm<sup>2</sup> sample holders can be provided upon request.

### Standards

Bs5636, EN ISO 9237, DIN 53887, ASTM D737, ASTM D3574, TAPPI, T251, AFNOR G07-111, EDANA 140.1

**K-009**

## FABRIC EXTENSIOMETER



Fabric Testing Equipment

It is used to determine recovery of fabrics due to tension. A marking template, and a marking pen is given as a standard.

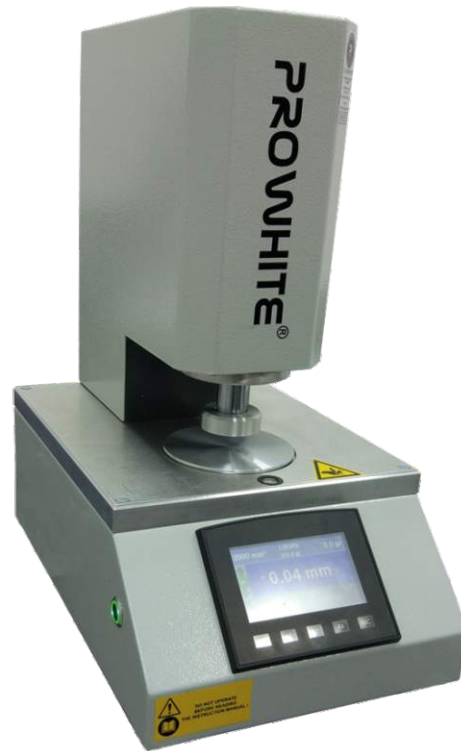
There is a digital load indicator.

### Standards

BS 4294, BS EN 14704-1, EN 14704-2

**K-010M**

## THICKNESS GAUGE



Fabric Testing Equipment

It is used to determine the thickness of textiles and textile products under a certain pressure. Applied Pressure 0.1 to 2000 gram force .

Thickness Measurement 0.01 to 50 mm. Thickness Measurement accuracy is 0,01 mm. Device has a presser foot 50.5 mm.

It has touch screen controller and PC software. (PC Software given with device)

Pressure feet of 5 cm<sup>2</sup>, 10 cm<sup>2</sup> and 20 cm<sup>2</sup> can be supplied as an optionally.

All controls on the device can be done via the touch screen without PC. Device has USB port as standart for computer communication.

Computer , printer and PC Software can be supplied as an optionally

### Standards

TS 7128, EN ISO 5084, ISO 9073-2, TS 1534-3, EN ISO 2286,3, ISO 5084, ISO 2286-3, ASTM D1777, TS EN ISO 9073-2

**K-010P**

## PORTABLE THICKNESS GAUGE



Fabric Testing Equipment

It is use to determine the material thickness of all textile fabrics. For its technical features , it has a depth jaw of about 120 mm and a measuring 0 to 10 mm .For its resolution, it has a rating of 0,01 mm.It has a lifting tool. The measuring units can be mm or inch

## ICI PILLING TESTER



It is used for determination of pilling and stitching caused by normal clothing conditions on fabric. The polyurethane sample tubes are in complete set with the fence, marking template, cutting apron, sample band.

Speed and direction of rotation can be adjusted according to different test methods.

ICI Bead cans, special cylindrical bead cans and snagging cans can also be supplied.

K-011x2 : 2 Positions ICIPilling Tester

K-011x4: 4 Positions ICI Pilling Tester

## Standards

BS 5811, NEXT19, BS EN ISO 12945-1, IWSTM 152, M&S P18, P18A, P18B, P21A

**K-011R**

## RANDOM TUMBLE PILLING TESTER



Fabric Testing Equipment

It is used for the determination of surface pilling, pilling and dulling tendency in fabrics.

Stainless steel and impact crushers rotate separately in aluminum chambers

At this time, the test fabric wall must be protected and they are returned by the stimulus system.

Pressurized air is given to help the rotation.

K-011Rx2 : 2 Positions RT Pilling Tester

K-011Rx4: 4 Positions RT Pilling Tester

**Standards**

ISO 12945-3, ASTM D 3512, DIN 53867, NF G07-121, JIS L 1076

**K-017**

## MARTINDALE ABRASION AND PILLING TESTER



Fabric Testing Equipment

The Martindale is designed to analyze the abrasions, pilling and resistance of fabrics toward different surfaces. It has an electronic controller and upward plate has lifting system. There are also other models with 4–6–8–9–12 test units.

Test kits for etching and pilling can be configured separately.

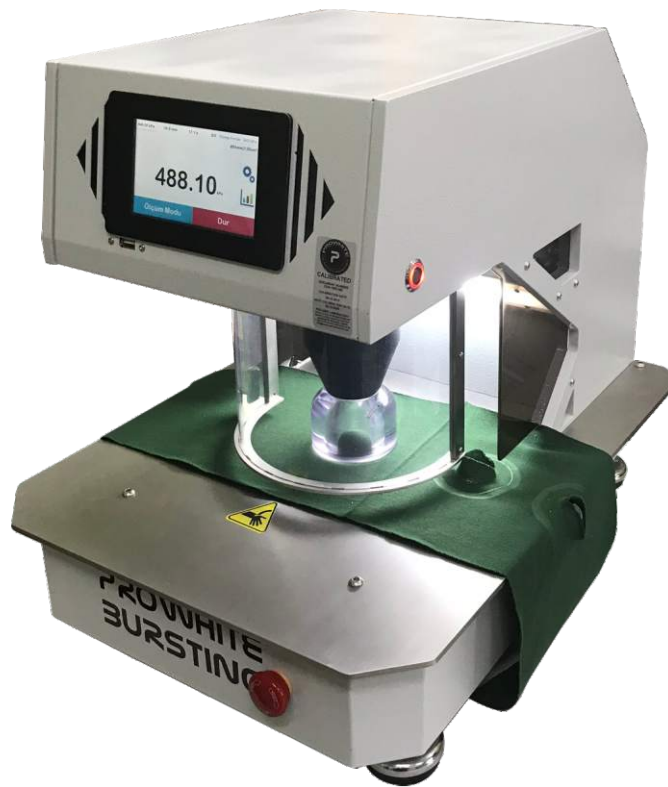
Optionally, socks, gloves, sample cutters, felts, evaluation photographs, support foams, abrasive fabrics and emery's can be supplied.

USB communication port is available as standard.

### Standards

ISO 5470, BS 3424/5690, BS EN ISO 12947-1/12945-2, ASTM 4966/4970, NEXT 18, M&S P17/P19/P19B, IWTO 40-88, IS 12673, JIS L1096, BS EN 388/530, SN 198525, 198529

## BURSTING TESTER-PNEUMATIC



The device is used to determine the burst strength of the fabrics and the burst surface tension. With the device, knitted, woven fabrics and non-woven surfaces ensure the determination of the bursting strength of fabrics produced by laminating fabrics and other techniques. The device provides the expected performance level (up to a maximum of 1000 kPa) for the garment in general.

Hydraulic bursting device is more suitable for textile materials suitable for high explosion resistance. A standard 50 cm<sup>2</sup> test head is provided with the appliance.

Optionally 7.1 cm<sup>2</sup>, 7.3 cm<sup>2</sup>, 7.55 cm<sup>2</sup>, 10 cm<sup>2</sup> or 100 cm<sup>2</sup> test heads can be supplied.

USB communication port is available as standard. Computer, printer and software are available as an option.

### Standards

ISO 13938-2/3689/3303/2758/2960, DIN 53861, BS 3137/4768, ASTM 3786, ERT 80-4-20

## BURSTING TESTER-HYDRAULIC



The device is used to determine the burst strength of the fabrics and the bursting surface tension.

With the device, the bursting resistance of fabrics made of knitted fabrics, woven fabrics and non-woven surfaces, laminating fabrics and other techniques is determined.

The device generally provides the expected performance level (up to a maximum of 7000 kPa) in ready-made clothing. The hydraulic blasting device is more suitable for special textile materials where high burst strength is required.

A standard 50 cm<sup>2</sup> test head is provided with the appliance. Optionally, 7.1 cm<sup>2</sup>, 7.3 cm<sup>2</sup>, 7.55 cm<sup>2</sup>, 10 cm<sup>2</sup> or 100 cm<sup>2</sup> test heads can be supplied.

USB communication port is available as standard. Computer, printer and software are available as an option.

### Standards

ISO 13938-1/13938-2/3689/3303/2758/2960, DIN 53861, BS 3137/4768

## BALL BURSTING TESTER



The device is used for the determination of the bursting strength and the bursting surface tension of fabrics showing a high degree of elongation at break. With the device, knitted, woven fabrics and non-woven surfaces ensure the determination of the bursting strength of fabrics produced by laminating fabrics and other techniques.

The device generally provides the expected performance level (up to a maximum of 7000 kPa) in ready-made clothing. The hydraulic bursting device is more suitable for special textile materials where high burst strength is required.

With the device Standard steel balls with a diameter of 25.4 mm and a test head with a diameter of 44.45 mm are given. Also different ball and test heads can be supplied separately.

USB communication port is available as standard. Computer, printer and software are available as an option.

### Standards

ASTM D3787 - 15, ASTM D6797 - 07, ISO 3303-1, ISO 9073-5

## CROCKMETER



Manual

Auto

The crockmeters are used for color precision testing, with the method of color change at the sample and staining of the accompanying fabric by fricting the textile materials to the other accompanying fabric. The samples are fricted to the dry, un-dyed and cotton accompanying fabric.

The staining ratio of the accompanying fabric is evaluated upon the staining gray scale. The automatic model has an digital controller and an engine.

Manual models are also available.

**K013-A** : Automatic Crockmeter

**K013-M** : Manuel Crockmeter



Grey Scale

## Standards

ISO 105 X12/D02 BS 1006 D02 AATCC 8/165, NEXT 6, M&S C8, BS 4655

**K-013R**

## ROTARY CROCKMETER



Fabric Testing Equipment

It is used especially on printed fabrics to determine the color fastness and the color precision by dry or wet friction.

It is able to turn 1.125 clockwise and then counterclockwise, 1134 grams of pressure is applied on a 16 mm in diameter.

The arm function movement is only one sided.



**Grey Scale**

**Standards**

AATCC 116 ISO 105 X 16

## PERSPIRATION TESTER



This device is used to determine the textile materials' color variation against water, sea water and sweat. The single unit sweat precision testing device includes a stainless steel trunk and 21 acrylic separation plates of 115 x 60 mm.

20 samples generally of 100 x 40 mm size are inserted between the plates under a load of 5 kg plates. Different models, with other loads used in accordance with AATCC standards are available



**Incubator**



**Grey Scale**

### Standards

AATCC 15/106/107/165, ISO 105, BS 1006, BS EN 20105, DIN 54005/54006/54007/54020, IWSTM 6,174,175, NEXT 4

## SPRAY RATING TESTER



The spraying method is applied to the device to determine the resistance of the fabric to water and water wetting of any fabric that has been water impervious or water repellent.

A cylinder is attached and sprayed with a certain volume of distillate or completely deionized water on a test piece placed at a certain distance below the central spray head and at an angle of 45 ° C.

The appearance of the wetting grade test piece is determined by comparing it with the defined standards and photographs

### Standards

ISO 4920, BS EN 24920, BS 3702, AATCC 22, M&S P23, NEXT 23

## BUNDESMANN WATER REPELLENCY TESTER



Bundemann Rain Tester used for determination of water repellency of fabrics to the rain-shower method. Test specimens of the fabrics under test are simultaneously exposed to a simulated heavy rain shower. The water repellency of the fabric is assessed by comparison of the wet fabrics to a standard chart. The water absorbed by the specimens is determined after the test is over which is the measure for resistance to wetting.

It consists of 4 specimen holders of 100mm diameter cups. Rain is produced by 300 pieces nozzle and falls down from 1500 mm height from the fabrics. It is set with the centrifuge device.



### Standards

ISO 9865, DIN 53888, BS EN 29865, GB/T 14577

**K-018**

## LIGHT FASTNESS TESTER



Light Fastness Tester is used to determine the color fastness of all kind of textile materials, plastic, paper and similar products under artificial daylight. It is also used to test white or optically polished products.

The sample is laid together with prepared blue wool under the artificial light. The sample is then compared with the reference wool to determine the color fastness.

There are 24 sample holders.

The device has a touch screen control panel.

Test methods are showed on screen according to many different standards and new standard entry can be easily done. ds and new standard entry can be easily done.

### Standards

ISO 105-B02, ISO 105 B04, ISO 105 B07, NF G07-012-2, NF EN ISO 105-B02/AFNOR, BS 1006 UK/TN, AATCC 16, AATCC 169, M&S C9, M&S C9A, ASTM G155

**K-018M**

## LIGHT FASTNESS TESTER - BENCH TYPE



Fabric Testing Equipment

Light Fastness Tester is used to determine the color fastness of all kind of textile materials, plastic, paper and similar products under artificial daylight (XENON).

It is also used to test white or optically polished products.

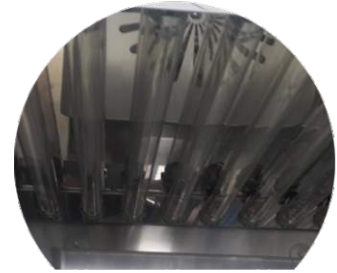
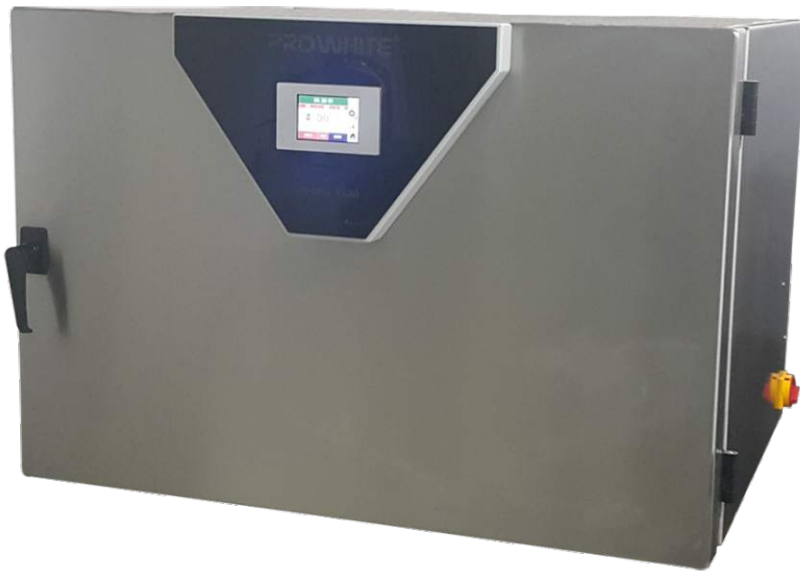
The sample is laid together with prepared blue wool under the artificial light. The sample is then compared with the reference wool to determine the color fastness.

### Standards

ISO 10977, ISO 11431, ISO 11979-5, ISO 4049, ISO 4892-1, ISO 4892-2, ISO 7491, ISO/DIS 24443, DIN EN ISO 4892-2, ASTM D3424, ASTM D5071, ASTM D6695, ASTM G151, ASTM G155

**K-030**

## UV TEST BOX



Fabric Testing Equipment

Test cabin for simulating color and property change by exposing products of plastics, paper, textile etc. to UV and /or D65 light.

The products to be tested with the device can be tested for D65 (25.000 lux), UVA + (20 mW / cm<sup>2</sup>), UV-A (10 mW / cm<sup>2</sup>), UV-B mW / cm<sup>2</sup>). In addition, the service life of the lamps can be observed on the device.

**Standards**

EN ISO 4892, ASTM D1148

## ULTRAVIOLET ACCELERATED WEATHEROMETER



The device is used to simulate the damage caused by the sunshine, rain and dew on objects quickly and reliably.

The device can compose the damage that will occur in a long period, within very short time.

Device can also process to variable loop with uv light and humidity at high temperature to simulate outside accelerated condition. special uv lamps are used to illuminate the effects of the sunlight. Special UV lamps are used to simulate the effects of sunlight, also simulated with dew and rain, water vapour and water spray. USB connection data output is standard.

The computer program and printer is optional.

### Standards

ASTM G154, SAE J2020, EN 927-6, GSB AL 631, ISO 16474-3, ASTM D4329, ISO 4892-3, ASTM G53, BS 27282

## SAMPLE CUTTER



The circular sample cutting apparatus allowing 100 cm<sup>2</sup> of precise cutting is offered as a set together with 1 bulk device support and 4 bulk device razors.

According to standard sizes different sample cutters are available

Model	Specimen Area	Sample Diameter	Cutting Depth
K-019-10	10 cm <sup>2</sup>	36 mm.	5 mm.
K-019-12	12 cm <sup>2</sup>	38 mm.	5 mm.
K-019-50	50 cm <sup>2</sup>	80 mm.	5 mm.
K-019-100	100 cm <sup>2</sup>	113 mm.	5 mm.
K-019-154	154 cm <sup>2</sup>	140 mm.	5 mm.

### Standards

ISO 3801, ASTM D3776/2646, BS 3724/2471, BS EN 12127, M&S P65/65A, NEXT 20

## FABRIC YIELD KIT



It is a full set with 100 cm<sup>2</sup> circular sensitive cutter, digital scale, pads and auxiliary blades.

Model	Specimen Area	Sample Diameter	Cutting Depth
K-019-10	10 cm <sup>2</sup>	36 mm.	5 mm.
K-019-12	12 cm <sup>2</sup>	38 mm.	5 mm.
K-019-50	50 cm <sup>2</sup>	80 mm.	5 mm.
K-019-100	100 cm <sup>2</sup>	113 mm.	5 mm.
K-019-154	154 cm <sup>2</sup>	140 mm.	5 mm.

### Standards

ISO 3801, ASTM D3776/2646, BS 3724/2471, BS EN 12127, M&S P65/65A, NEXT 20

## TEXTILE MICROSCOPE



They are designed for microscopic examinations and classifications of fibers, yarns, fabrics such as textile materials.

- Projection microscope
- Binocular textile microscope
- Trinocular textile microscope with PC outlet
- Digital camera

It is possible to watch samples simultaneously on PC monitor, take picture and measure the diameter, area, and count from pictures.

You can save results of measurement as reports.

## SUSPENDERS DRYING OVEN



It is used for the drying and fixation after dyeing and washing the fabric samples. The drying operation can be done at the desired time and temperature.

The maximum temperature is 250 C°.

An alarm system warns the operator at the end of the heating process.

4 stainless steel hanger shelves of 600 mm x 450 mm are also included.

Optionally, pins and adjustable frames are available to hold the samples.

**K-024**

## SUBLIMATION TESTER



Fabric Testing Equipment

It is used to determine the color precision and shrinkage of all kind of textile fabrics against dry heat and hot pressing.

Device has an electronic heating controller.

Weight of the upper plate was organized by relevant standards.

Temperature is between 20–230 C°.

**K-021-1** : 102 x 29 mm. Single plate

**K-024-2** : 125 x 125 mm. Single plate

**K-024-3** : 102 x 29 mm. Five plates models are available

### Standards

ISO 105 P01,AATCC 92/114/117/133,EN ISO 105-X11,NF G07-019-11,M&S C13,M&S P10

## FABRIC PH MEASUREMENT DEVICE



Fabric and similar textile products, it is a device used to prepare extract to make pH measurements fast and reliably.

It facilitates pH measurement operations before and after painting.

Temperature range can be adjusted between the ambient temperature and 95 °C.

Sample measurement space is 52 cm<sup>2</sup>.

The process time can be set between 30 sec and 6 min.

99 different programs can be saved.

USB communication port is available as standard. All transactions can be viewed online from the computer screen. The results of the process can be output via the printer or also stored in the computer environment at the same time.

**K-032**

## WATER VAPOUR PERMEABILITY TESTER



Fabric Testing Equipment

It is used to determine the resistance of the water vapor permeability on textile materials (particularly frequently used clothing fabrics).

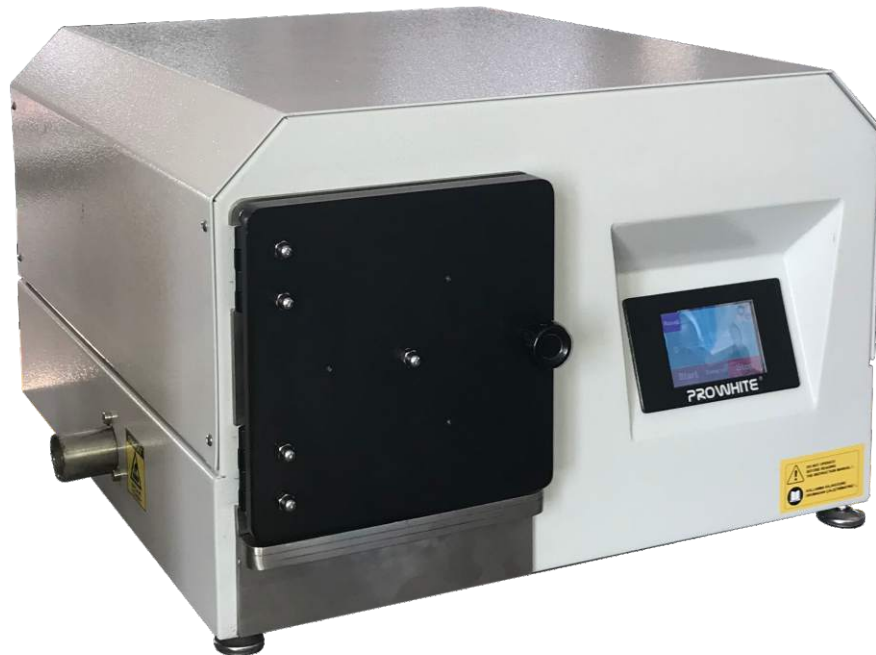
Device has 8 water tank containers, a standard leakage fabric case, sample holder rings and a definite value operating system

**Standards**

BS 7209, BS 3424

**K-033**

## STEAMING CYLINDER



Fabric Testing Equipment

It is used to determine the shrinkage of free stress fabrics samples that were subjected to steaming in a closed area. Device has an automatic timer and 4 sample injectors with a stainless steel fabric support. The fixing plate steam is used along with the steam rollers while testing the shrinkage laxity of fabrics. The plate is used to determine the shrinkage percentage by marking the fabrics on pre-test on a 250 mm bench and evaluate the shrinkage percentage after the test. The device's measurement is electronic load cell

**Standards**

ISO 3005, BS 4323, M&S P8, NEXT 15

## WRINKLE RECOVERY TESTER



This device is used for final appearance fixation of fabrics wrinkled. It can be also applied to outerwear of any kind of fiber or fiber mixture including woven fabrics and wool blends.

These given with device

2,0kg 1,0kg (one piece) and 0,5 (two pieces)

And AATCC 3 wrinkles, look-up table set of picture

## Standards

AATCC 128, ISO 9867, ENKA 3061

K-037

## SEWABILITY TESTER



Fabric Testing Equipment

The device tests its sewability without regard to sewing conditions or operator skills without the need for any kind of fabric. Pinprick force measurement is performed with the device. The value in cN can be read and converted to different units of measurement. Pinprick performance can be tested at different speeds.

USB connection data output is standart. The computer program and printer is optional.

## CUT RESISTANCE TESTER



The device measures the durability of gloves and protective materials by applying low-strength cuts. The device has a rotating circular blade with a diameter of  $45 \pm 0.5$  mm and a thickness of  $3 \pm 0.3$  mm. The force applied by the blade to the fabric is  $5 \pm 0.05$  N. The circular blade has an experimental workbench moving in a variable horizontal direction. The rotary circular knife moves 50 mm on above the test sample under 5 N pressure. There is a digital counter on the device that can measure the number of cycles required to disconnect the test sample.

## Standards

TS EN 388, TS EN ISO 13997

**some of our references**





ETİ MADEN İŞLETMELERİ  
GENEL MÜDÜRLÜĞÜ



**AKSA**



Valued Quality. Delivered.



**KNAUF**

**Setas**  
COLORCENTER



**TAPIDOR**

**SASA**

NOTTINGHAM  
TRENT UNIVERSITY



ÇSGB

T.C. ÇALIŞMA VE  
SOSYAL GÜVENLİK  
BAKANLIĞI

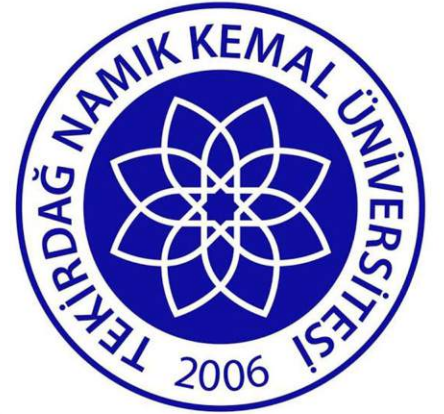
YÜNSA

SGS



Dunapack Dentaş  
Packaging

LC Waikiki



CHT

SMART CHEMISTRY  
WITH CHARACTER.



merinos®

KARTAL  
CARPETS



**PRO-SER LTD**

Ikitelli O.S.B.Giyim Sanatkarlari San.Sit.  
2.Ada B Blok Kat:5 No:511 Basaksehir ISTANBUL TURKEY  
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