PROWHITE

Precision at Every Stage. Confidence in Every Test.

SINGLE-COLUMN UNIVERSAL STRENGTH TESTER

Make material strength visible.

PW-K001-SC-5

5 kN

Nominal capacity

A 5 kN single-column test platform for exploring force behaviour in textiles, carpets and technical materials.

- **Grips matched to the specimen**
- **Setups matched to the method**
- **Results interpreted in context**



Product visualisation. Instrument screen is illustrative.

Single-column frame

Manual / pneumatic grips

Standard and L models.

The same 5 kN test platform, with two mechanical options for the required specimen extension.

MODEL	FORCE	TRAVEL
PW-K001-SC-5	5 kN	Standard single-column frame
PW-K001-SC-5-L	5 kN	1,000 mm net jaw travel

L model: 1,000 mm net travel

The L model provides 1,000 mm of usable net jaw travel with the grips installed. Initial gauge length and specimen extension are considered with the selected grips and fixtures.

Elastic textile testing

ASTM D4964 and ISO 20932-1: strip and loop specimen arrangements, repeated loading, recovery and modulus evaluation. GAP 1033, P14 and P15A brand methods are configured to the method revision specified in the order.

Standard delivery and calibration

The instrument includes one load cell matching the nominal capacity, one grip set and PC software. Additional load cells and grips are optional. Non-accredited factory calibration is included; accredited calibration is priced separately.

Your specimen at the centre of the test.

Force capacity, the right grip and the appropriate method work together. Look beyond a single number and consider the complete test setup.



Product visualisation. Instrument screen is illustrative.

5 kN platform

A nominal 5,000 N capacity for tensile testing on a single-column frame.

Accessible test area

Front access to observe and position the specimen between the upper and lower grips.

Touchscreen interface

The operator panel is positioned beside the test area.

Grip options

Manual or pneumatic clamping, selected to suit the specimen and test method.

Three decisions that support meaningful results

Define the method first. Select a suitable force range and gripping surface. Interpret the result in the context of that setup.

A traceable path from specimen to result.

Consistent measurement begins with specimen preparation. Applying the same method throughout the workflow supports meaningful comparison.



Specimen

Initial separation

1 Define the method

Choose the method for the material, customer specification and purpose of the test.

2 Prepare the specimen

Set cutting direction, dimensions, conditioning and repeat count according to the method.

3 Set grips and gauge length

Align the specimen; check grip faces, initial separation and pretension.

4 Run the test

Apply the prescribed movement conditions; watch for slippage and breaks at the jaws.

5 Review the result

Read the curve alongside the failure location; record reasons for rejected tests.

Keep the result in context

Results obtained using different speeds, initial grip separations or gripping arrangements should not automatically be treated as equivalent.

Different materials. The right test approach.

Application suitability depends on specimen construction, expected force and the selected fixture.



Illustrative material image; not a customer specimen.

Woven and knitted fabrics

Strength, extension and tear behaviour.

Yarns and seams

Yarn breakage, seam strength and slippage.

Carpets and floor coverings

Tuft retention and bonding between layers.

Elastic materials

Extension at a defined load and recovery.

Coated and bonded textiles

Adhesion of coatings and layered structures.

Technical textiles

Material-specific tensile and joint testing.

Applications are a guide to method selection. Each method requires suitable grips, fixtures and a validated test configuration.

Measurement quality starts with the grip.

Grip selection is about more than opening width. Contact surfaces, clamping force and holding the specimen without damage must be considered together.



PW-A007 | Pneumatic grip body.



PW-A006 | Manual grip body.

Pneumatic grips

Air-operated clamping. Select pressure and contact surfaces to hold the specimen without slippage or crushing.

Manual grips

Mechanical clamping via the side handwheel. Standardise the clamping procedure and specimen position for consistency between tests.

CONTACT

Face / surface finish

HOLD

Slippage / crushing

ALIGNMENT

Load axis / failure location

Grip type and supply scope are specified in the order configuration. Pneumatic supply: 4–8 bar; air hose: 8 mm.

Select the contact face for your specimen.

Interchangeable faces and holders for manual and pneumatic grip bodies. Select the contact geometry for the specimen and method.



PW-A001

Narrow serrated jaw face



PW-A002

Jaw with central contact surface



PW-A003

Medium-width serrated jaw face



PW-A004

Wide serrated jaw face



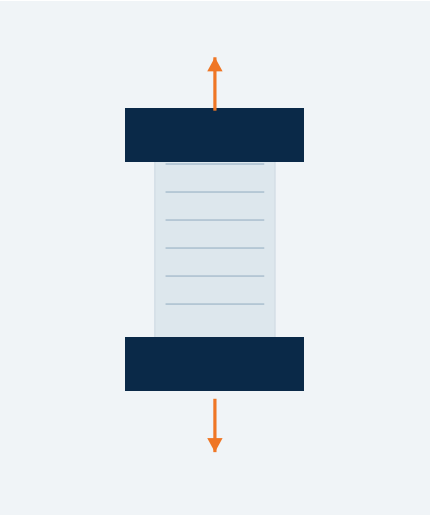
PW-A005

Angled-edge holder

PW-A005 is a separate holder. Images are not scale drawings. Face dimensions, force limits and supply units are specified with the selected configuration.

Read fabric behaviour with the right method.

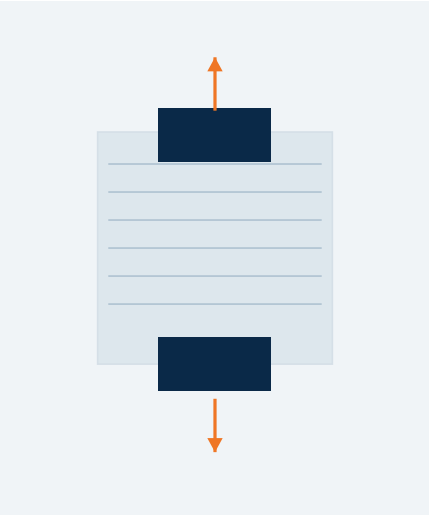
Tensile strength and tear resistance describe different properties. A change in specimen geometry or loading arrangement changes what the result means.



Strip tensile

Load is applied along a strip held between the grips. Force and extension are considered together.

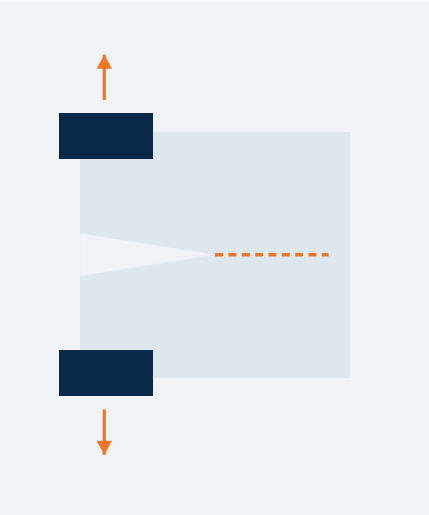
ISO 13934-1
ASTM D5035



Grab tensile

The central part of the specimen is gripped. Fabric outside the gripped region also contributes to the test behaviour.

ISO 13934-2
ASTM D5034



Tear

Resistance to the propagation of a tear is assessed using a pre-cut specimen. The selected specimen geometry is critical.

ISO 13937-2/-3/-4
ASTM D2261 / D5587

Test-principle schematics; not fixture drawings or standard specimen dimensions.

Carry specimen direction into the report

Evaluate warp and weft, or machine and cross directions, separately. Failure location, slippage and gripping effects are part of result review.

From yarn to seam, the result changes meaning.

Each application has its own force range, gripping arrangement and evaluation criteria. Select the setup to reveal the behaviour of the material.

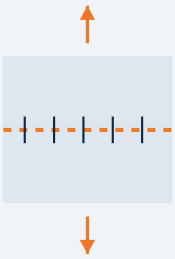


PW-A008

Yarn breaking strength

Assess breaking force and extension. For tenacity calculations based on yarn count, report the units and count system clearly.

ISO 2062 / ASTM D2256; skeins: ISO 6939 / ASTM D1578.



Seam strength and slippage

Seam failure and yarn slippage at a seam are different outcomes. Include the method, seam arrangement and decision criterion in the report.

ISO 13935-1/-2; ISO 13936-1/-2.



PW-A009

Elasticity and recovery

Program repeated loading, dwell, unloading and recovery steps. Recovery and modulus values are calculated automatically.

ASTM D4964 / ISO 20932-1; GAP 1033 / P14 / P15A.

Visuals: PW-A008 yarn grip; PW-A009 loop-bar specimen holder. Select the method together with specimen mounting and software scope.

Evaluate carpet from pile to backing.

Carpet performance cannot be explained by one force value. Tuft retention, bonding between layers and backing behaviour are separate test questions.

Carpet testing. Three perspectives.



PW-A015

01 Tuft retention

Examine resistance to pulling pile yarn out of the carpet backing. Correct tuft selection and specimen support are essential.

ISO 4919 / ASTM D1335

02 Delamination

Evaluate separation between carpet layers. Select peel geometry and the evaluation interval according to the method.

ISO 11857 / ASTM D3936

03 Backing and supporting structure

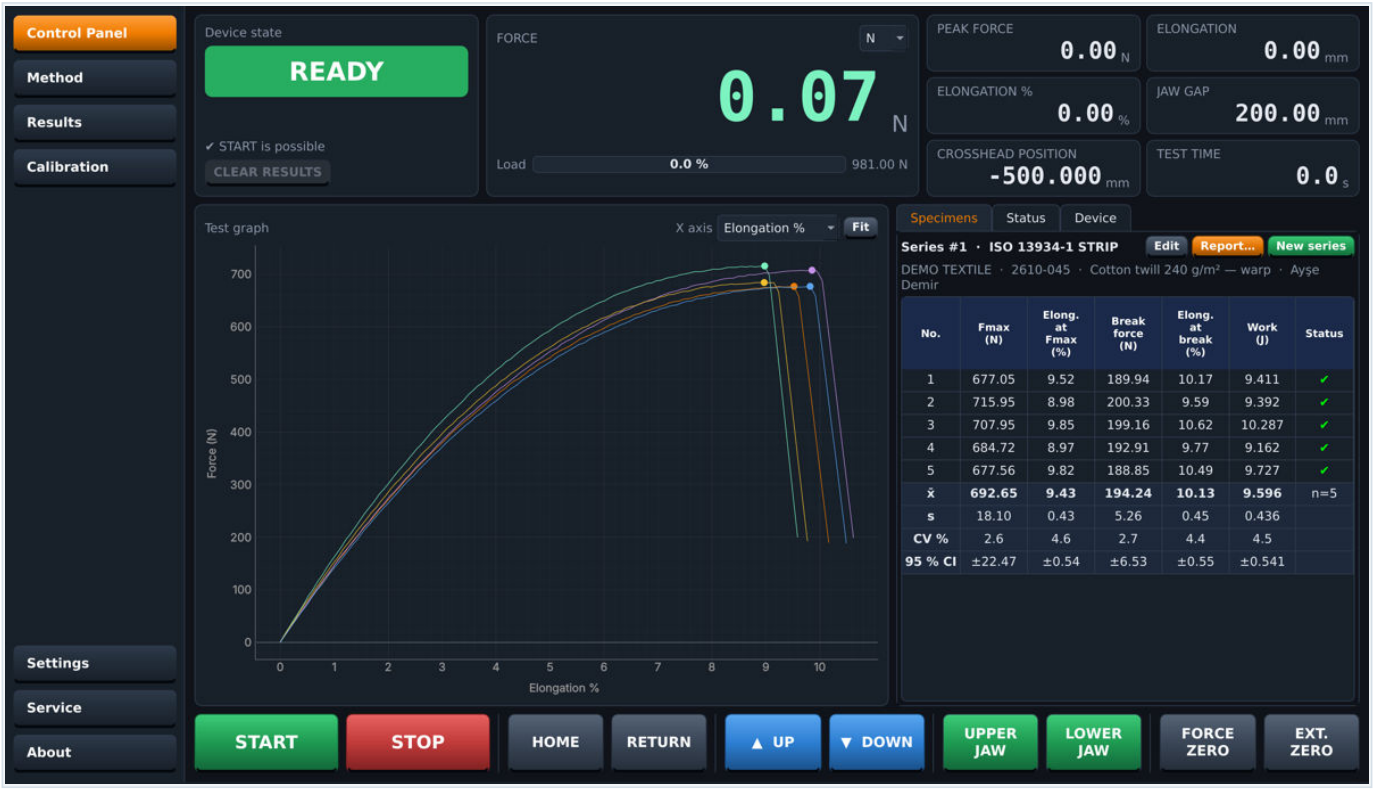
Examine tensile behaviour in backing fabrics or strip specimens. Select the method according to the backing material and construction.

Method selected for the material and customer specification

Visual: PW-A015 carpet pile and fringe pull fixture with forceps. This arrangement does not represent every fixture required for the other carpet tests.

TensiLab.
One workflow, test to report.

Control the instrument from your PC and view force and extension curves live. Bring test conditions, specimen results and reporting into one workflow.



TensiLab 0.5.1 control panel. Specimens and results shown use a demonstration dataset.

Control the test

Start, stop, return, hold-to-run jog and pneumatic grip commands from one control panel.

Repeat the method

Method management for 10 test types. Save speed, pretension and end conditions, then load the method to the instrument.

Work in six languages

English, Turkish, Italian, French, Russian and German. Choose the report language for each output.

Ethernet connection • Windows 10 / 11, 64-bit

Modbus TCP communication. Minimum 1366 × 768 display. Built-in demo mode for training without an instrument.

See the series.
Review the statistics together.

Review individual specimens, variation across a series and overlaid curves together. Store the result with customer, order, method and operator information.



Series #1 · ISO 13934-1 STRIP

2026-10-27 02:57 · DEMO TEXTILE · 2610-045 · Cotton twill 240 g/m² — warp · Ayşe Demir

No.	Fmax (N)	Elong. at Fmax (mm)	Elong. at Fmax (%)	Break force (N)	Elong. at break (mm)	Elong. at break (%)	Work (J)	Time (s)	Status
1	677.1	19.04	9.52	189.9	20.33	10.17	9.411	11.6	✓
2	716.0	17.95	8.98	200.3	19.18	9.59	9.392	11.6	✓
3	708.0	19.70	9.85	199.2	21.25	10.62	10.287	11.6	✓
4	684.7	17.94	8.97	192.9	19.54	9.77	9.162	11.6	✓
5	677.6	19.65	9.82	188.9	20.98	10.49	9.727	11.6	✓
Mean	**692.6**	**18.86**	**9.43**	**194.2**	**20.26**	**10.13**	**9.596**	**11.6**	n=5
Std. dev.	18.1	0.87	0.43	5.3	0.89	0.45	0.436	0.0	
CV %	2.6	4.6	4.6	2.7	4.4	4.4	4.5	0.0	
Min	677.1	17.94	8.97	188.9	19.18	9.59	9.162	11.6	
Max	716.0	19.70	9.85	200.3	21.25	10.62	10.287	11.6	
95 % CI	±22.5	±1.08	±0.54	±6.5	±1.11	±0.55	±0.541	±0.0	

Results-screen excerpt: five-specimen demonstration series. Values are not measurement-performance claims.

Automatic statistics

Mean, standard deviation, CV %, minimum, maximum and 95% confidence interval.

Review with a reason

Mark a faulty specimen invalid and record the reason. Statistics use valid specimens only.

Searchable archive

Find a series by customer, order, specimen, operator or date, then review its stored curves.

Move your test series

Transfer a series to another PC as a .tlab file, keeping results and curves together.

Share your results.
Keep the report traceable.

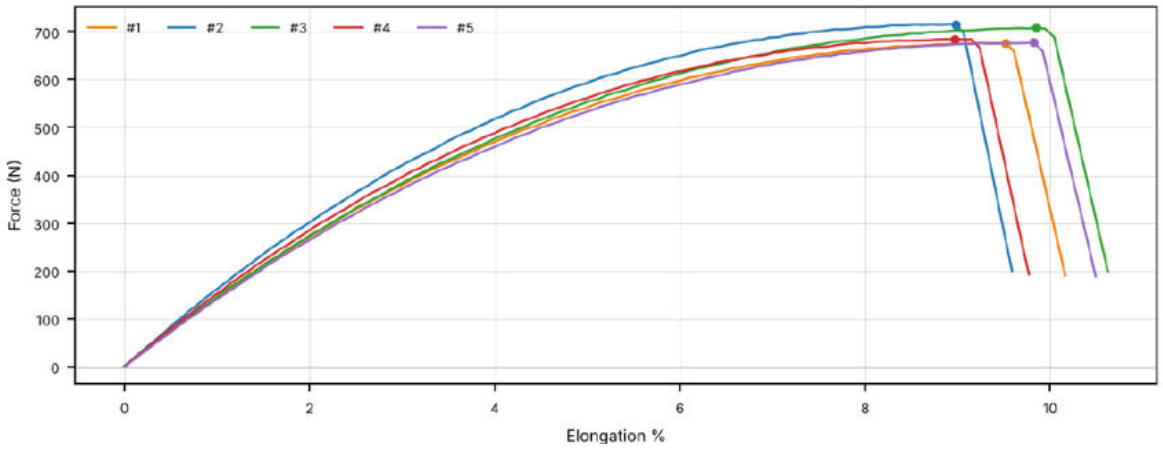
A4 PDF, Excel and CSV outputs. Report specimen details, test conditions, results, statistics and curves. Excel exports include each specimen's curve data on a separate sheet.

Results

No.	Fmax (N)	Elong. at Fmax (mm)	Elong. at Fmax (%)	Break force (N)	Elong. at break (mm)	Elong. at break (%)	Work (J)	Time (s)	Valid
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Max	716.0	19.70	9.85	200.3	21.25	10.62	10.287	11.6	
95 % CI	± 22.5	± 1.08	± 0.54	± 6.5	± 1.11	± 0.55	± 0.541	± 0.0	

Statistics from valid specimens only; 95 % CI = t·s/√n. Results as measured by the instrument.

Force curves



Results and curves from a sample PDF report using demo data. Below: report-language and output-format selection.



Calibration and verification records

Multi-point load cell and jaw-gap calibration; ISO 7500-1 verification reports. Keep track of records with automatic table backups and an operation history.

Gripping choices for different accessories.

Different contact geometries for attachments and small specimens. Match the holder to the tested part and loading direction.



PW-A010

Wide-tip screw accessory grip



PW-A011

Long-tip screw accessory grip



PW-A012

Twin-fork accessory holder



PW-A013

Slotted accessory holder



PW-A014

Flat-face screw grip

Match the application

Identify the holder by its product code. Define specimen mounting, test method, force limit and supply scope together.

Platform specifications.

Define your configuration around the material, method scope and expected force range.

5 kN

5,000 N nominal platform capacity



Model code	PW-K001-SC-5
Frame	Single-column test platform
Nominal force capacity	5 kN (5,000 N)
Grip choice	Manual or pneumatic
Operator interface	Instrument-mounted touchscreen
Emergency stop	Accessible button on the instrument body
Air pressure display	Digital readout on the HMI
Electrical supply / current	220 V / 6 A
Pneumatic air supply	4–8 bar
Air hose	8 mm
PC connection	Ethernet / Modbus TCP
Body colour system	RAL 7016 + RAL 7035

Consider the complete load path

Usable test force depends on the capacities of the load cell, grips, connections and fixture. A 5 kN platform capacity does not mean that every accessory is rated to 5 kN.

Evaluate measurement performance and usable travel with the technical sheet for the selected configuration.

The right setup starts with the right scope.

Defining the test need at quotation and order stages helps identify suitable grips and the measurement arrangement.

01 Define the test requirement

Material sample • method / specification • expected force • specimen dimensions • daily test volume.

02 Agree the supply configuration

Instrument • selected load cell • manual / pneumatic grips • grip faces • application fixtures • software and report scope.

03 Prepare the installation

220 V / 6 A electrical supply; 4–8 bar air and an 8 mm hose for pneumatic grips. Prepare the workspace and specimen-conditioning conditions.

Standard and optional items

Separate standard delivery from selected fixtures in the quotation and order list. Verify fixture connection and force limits together.

Installation and use documents

Match the installation sheet, operating instructions, verification/calibration scope and maintenance requirements to the instrument configuration.

Next step: share your specimen and test method so we can define the appropriate configuration together.

Share your specimen. Let's define the test.

Fabric, yarn, carpet or technical textile: tell us about your application, method requirements and expected force range.

Precision at Every Stage. Confidence in Every Test.

PRODUCT INFORMATION AND APPLICATION DISCUSSION

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