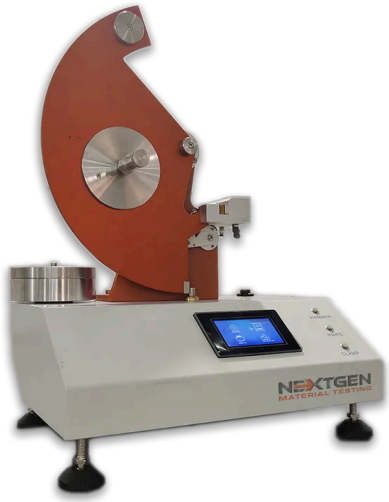
GenElm Series – Elmendorf Tearing Tester (64 N and 128 N)

Standards: APPITA P 400, ASTM D689, ASTM D1424, ASTM D1922, ASTM D5734, BS 4468, CSA D9, DIN 53128, DIN 53862, EN 21974, EN ISO 13937-1, ISO 1974, ISO 4674-2, ISO 6383-2, ISO 9290, JIS K 7128-2, JIS L0849, M&S P29, NEXT 17, NF T54 141, WSP 100.1

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE



GET A QUOTE

Description

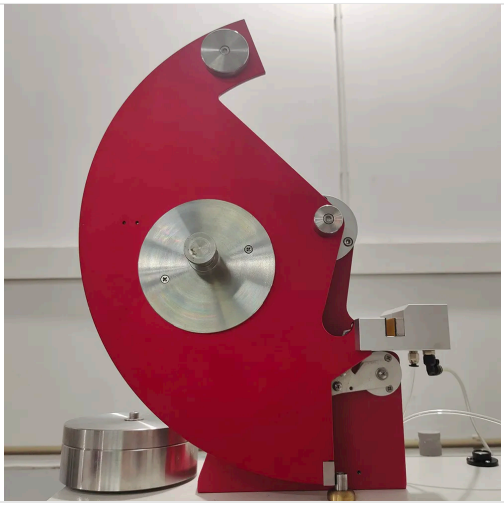
The GenElm Series **Elmendorf Tearing Tester** is a professional laboratory instrument used to measure the tear resistance of different materials. It follows international standards, including ASTM, ISO, and DIN. The system is based on the pendulum method of testing, giving laboratories clear and precise data for both research and everyday quality control.

This equipment can be applied to many types of materials such as fabrics, plastic films, paper, nonwoven textiles, and thin foils. By testing how a tear develops in these materials, the GenElm Series helps evaluate strength, performance, and compliance with industry requirements. The results are especially valuable for production lines, product testing facilities, and research centers that need dependable measurements of material durability.

The GenElm Series comes with a simple touch-screen interface, automatic specimen cutting, and pneumatic clamping for stable handling of samples. Different pendulum options allow the user to cover several testing ranges, while the built-in system collects and processes the

data. This combination of functions makes the instrument practical for everyday laboratory work and a reliable solution for routine testing.

The pendulum assembly and the touch screen the operator works from:



The pendulum assembly with the specimen clamps.



The touch screen: settings, test runs, reports and calibration.

Two models cover the range; everything else about them is identical.

MODEL RANGE **64 N or 128 N**	**MEASURING RANGES** **16, 32, 64, 128 N**	**MEASUREMENT ACCURACY** **±0.2% F.S.**
CLAMP GAP **7.0 ± 0.25 mm**	**SLIT SIZE** **20 ± 0.2 mm**	**TEARING DISTANCE** **43 ± 0.15 mm**

Key Features

The GenElm Series Elmendorf Tearing Tester includes functions that simplify daily use and provide stable test results.

Automated testing	The system performs calculations and records results without manual processing.
Pneumatic clamping	Pneumatic clamping and pendulum release ensures uniform sample holding and a stable start of each test.
Interchangeable pendulums	16 N to 128 N, covering different load ranges for both light and heavy materials.
Automatic cutting	Prepares samples with consistent shape and size for repeatable results.
Integrated statistics	Calculates mean, minimum, maximum, standard deviation, and coefficient of variation directly on the device.
Data export	RS232 transfers results to a PC or printer for documentation and reports.
Multi-language interface	Supports different user needs across laboratories.
Calibration	Supplied with inspection and calibration documents to confirm compliance with standards.

Compliance with International Standards



The three standards bodies the instrument is certified against.

The GenElm Series Elmendorf Tearing Tester is supplied from the factory with compliance to all essential international standards. This allows laboratories worldwide to run tests under recognized procedures, compare results, and adapt reporting to regional or industry-specific requirements.

Below is the list of the main standards supported by the GenElm Series:

Standard	What it covers
ASTM D1424	Tearing strength of fabrics using a falling-pendulum (Elmendorf) apparatus.
ASTM D1922	Tear resistance of plastic film and thin sheeting by the pendulum method.
ASTM D5734	Tear strength of nonwoven fabrics using the trapezoid procedure.
ASTM D689	Tearing strength of paper determined by the Elmendorf method.
ISO 4674-2	Tear resistance of rubber- or plastics-coated fabrics, Part 2: Elmendorf method.

Standard	What it covers
ISO 9290	Tear resistance of plastic film and sheeting using the Elmendorf method.
ISO 6383-2	Tear resistance of plastics, film, and sheeting, Part 2: Elmendorf method.
ISO 1974	Determination of tearing resistance of paper using the Elmendorf method.
DIN 53862	Tearing strength test for textiles by Elmendorf method.
DIN 53128	Tearing resistance of paper and board by Elmendorf method.
EN ISO 13937-1	Tear properties of textiles, trouser-shaped test specimens.
EN 21974	Tearing resistance of paper by Elmendorf method.
JIS K 7128-2	Tear resistance of plastic film and sheeting by Elmendorf method.
JIS L0849	Tear strength testing of woven fabrics by Elmendorf method.
CSA D9	Canadian standard for paper tearing resistance, Elmendorf method.
BS 4468	British method for tearing strength of paper and board by Elmendorf method.
APPITA P 400	Tear resistance of paper, board, and pulps by Elmendorf method.
M&S P29	Fabric tear testing standard used by Marks & Spencer.
NEXT 17	Retail and apparel-specific fabric tear testing procedure.
NF T54 141	Tear resistance of plastic films and sheets, Elmendorf method.
WSP 100.1	Nonwoven fabric standard test methods (INDA/EDANA).

Technical Specifications

The GenElm Series is available in two versions to cover different material testing needs. The **64 N model** supports three ranges (0-16 N, 0-32 N, and 0-64 N), making it suitable for textiles, packaging films, and paper products. The **128 N high-energy model** extends the capacity up to 128 N, which is required for tougher or more technical materials. Both versions rely on the same pendulum principle, ensuring a unified approach to tear strength measurement.

Despite the difference in maximum load, both models share identical design features and geometry. Each tester is built with a clamp gap of 7.0 ± 0.25 mm, a slit length of 20 ± 0.2 mm, and a tear travel of 43 ± 0.15 mm. In this context, "N" stands for newtons, representing the pendulum capacity. This structure allows laboratories to choose the configuration that matches their materials without compromising consistency across tests.

Parameter	64 N Model	128 N Model
Measuring range	0-16 N, 32 N, 64 N	0-16 N, 32 N, 64 N, 128 N
Measurement accuracy	±0.2% F.S.	±0.2% F.S.
Distance between clamps	7.0 ± 0.25 mm	7.0 ± 0.25 mm
Slit size	20 ± 0.2 mm	20 ± 0.2 mm
Tearing distance	43 ± 0.15 mm	43 ± 0.15 mm
Dimensions	19.7 x 15.7 x 24.4 in (500 x 400 x 620 mm)	19.7 x 15.7 x 24.4 in (500 x 400 x 620 mm)
Weight	110-128 lbs (50-58 kg)	110-128 lbs (50-58 kg)
Power supply	AC 220 V, 50 Hz, 100 W	AC 220 V, 50 Hz, 100 W
Control system	LCD touch panel with microcomputer	LCD touch panel with microcomputer

Parameter	64 N Model	128 N Model
Sample clamping	Pneumatic, automatic pendulum release	Pneumatic, automatic pendulum release
Specimen cutting	Automatic, consistent sample shape	Automatic, consistent sample shape
Data output	RS232 port to PC and printer	RS232 port to PC and printer

Applications Across Industries and Materials

The Elmendorf tearing tester is recognized as a practical tool for laboratories and production sites that need to measure how different materials behave when subjected to tearing forces. Its ability to work with textiles, films, papers, and technical fabrics makes it suitable for both research and day-to-day quality control.

The instrument is applied in multiple industries where tear resistance is critical for safety, quality, and durability.

Packaging	Testing plastic films and sheets to confirm performance during storage, transport, and handling.
Paper and board	Evaluating tissue, printing paper, and packaging board for strength and reliability.
Textiles and nonwovens	Measuring tear resistance of woven, knitted, and nonwoven fabrics used in apparel and technical textiles.
Automotive and upholstery	Assessing fabrics and interior materials such as seat covers to ensure durability in use.
Laboratories	Research and quality control laboratories, providing consistent benchmarks for product development and compliance testing.

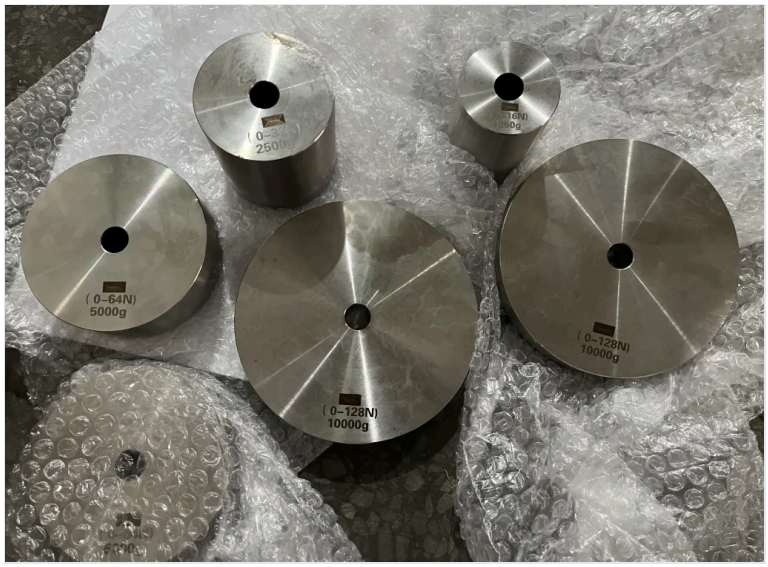
The system works with a variety of materials, from thin flexible films to heavy technical textiles: plastic films and sheeting, paper and cardboard, woven textiles, knitted fabrics, nonwoven fabrics, and reinforced or industrial fabrics such as canvas.

Elmendorf tear testing is also applied to finished or semi-finished products that must meet durability requirements: food, medical, and industrial packaging films; tissue, wrapping paper, and printed stock; clothing fabrics including sportswear and workwear; automotive upholstery and liners; disposable nonwoven products such as wipes and filters; and heavy-duty textiles used in industrial and outdoor applications.

Complete Set of Weights and Tools

The GenElm Series Elmendorf Tearing Tester is supplied with all the required pendulum weights and tools for accurate and repeatable tear strength measurements. Each weight corresponds to a specific test capacity, allowing laboratories to select the right load depending on the type and strength of the material being tested.

With options ranging from low-capacity weights for thin films and paper to high-capacity weights for technical fabrics and industrial materials, the full range is available in the standard package. Alongside the weights, the system is delivered with cutting templates, cables, and adjustment tools.



The pendulum weights supplied with the instrument.

Have Questions or Need to Confirm a Detail?

If you require this type of equipment for specific testing needs, the GenElm Series can be adapted to meet your requirements. Send us a quick request online or contact us directly with your questions: tell us the material you tear and the standard you report to, and we will confirm the model, the pendulums and the certificates you need.

For Laboratories

Need Additional Quality Control Equipment to Build Your Laboratory?

Tear testing is only one part of a complete quality control laboratory. NextGen can help you equip your entire lab with universal testing machines, impact and falling weight testers, melt flow indexers, HDT and Vicat systems, hardness and durometer systems, environmental chambers, and other supporting solutions, all coordinated as one complete project.

- One partner to equip your complete laboratory
- Installation, training, calibration
- Support for the life of the equipment