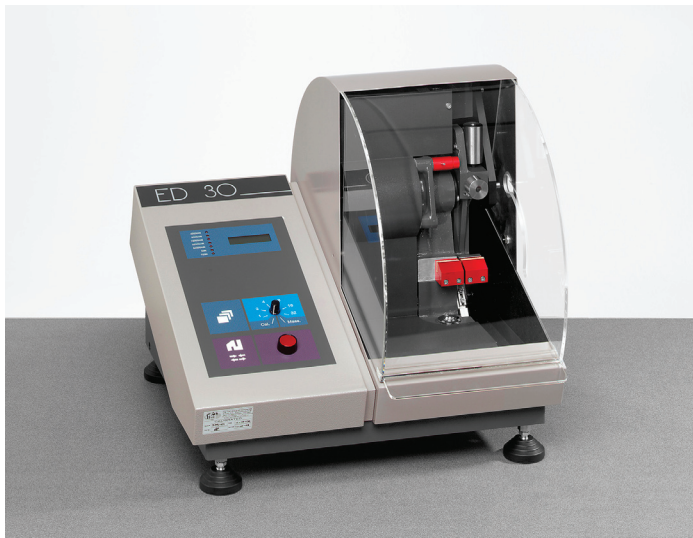


TEXTILE TEAR TESTER

LH 83-20, 83-21



TEAR TESTING

Tear testing measures the force required to continue the tearing of an initial cut in textile materials. Models and weights are available to test material with a variety of strengths. This is also useful to evaluate strength of perforated materials.

PRINCIPLE

Also known as the Elmendorf test, the tearing test has been performed in the textile industry for more than half century in order to measure the mean internal resistance of textiles to the propagation of a deliberately initiated tear. It enables rapid determination of the dynamic resistance of materials designed to be subjected to strong shearing loads (e.g. suitcases, industrial fabrics) or liable to be damaged by sharp or heavy objects (e.g. seat belts, outerwear, protective clothing).

Subsequently, the test was naturally adopted for all materials in the form of cloth, knitted fabrics, nylons, industrial fabrics, non-woven fabrics, etc. for which the service requirements are required to sustain high tolerance.

APPLICATIONS

- Textiles, Fabrics, Strength materials etc.

FEATURES

- Automatic specimen notching
- Mechanical-pneumatic clamping avoids sample slippage to ensure repeatable results
- Automatic pendulum reset with lifting device
- Tearing force displayed digitally
- RS-232 data output
- Quick information feedback
- Small, table-top instrument
- Aiding in better product design
- Maintaining a uniform quality level
- **Safety Hood:** As soon as the safety hood preventing access of the operator to the swinging pendulum zone is closed, the specimen is pre-notched automatically by a pneumatically driven shear.

Model 83-20-00, 83-21-00

OPERATION

The test is carried out on a specimen composed of one or more samples of standard dimensions, usually with a distance of 43mm (1.7") remaining to be torn after initiating the tear. The energy of a pendulum of suitable weight is used to completely tear the specimen. The difference in the angle from the vertical of the center of gravity of the pendulum between the downswing and the upswing is a measure of the energy absorbed in tearing the sample. This angular movement is measured with a digital encoder and is immediately converted to the mean tearing force for a single sheet by the microprocessor incorporated in the apparatus.

SPECIFICATIONS

- Textile Standards- NF G.07.149, ASTM D 1424, M&S P-29, ISO 13937-1

NEW FEATURES

•**Repeatability:** The mechanical-pneumatic specimen gripping system guarantees sufficient clamping pressure to avoid all slipping phenomena, thus ensuring perfect reproducibility of the experimental conditions.

•**Safety:** As soon as the safety hood preventing access of the operator to the swinging pendulum zone is closed, the specimen is pre-notched automatically by a pneumatically driven shear.

•**User-friendliness:** The mean tearing force is indicated on an easy-to-read alphanumeric liquid crystal display and can also be transferred to a computer, either for additional statistical treatment or for record keeping purposes.

•**Ergonomics:** When the apparatus is equipped with an automatic pendulum raising device, after each test, the pendulum raising device, after each test, the pendulum is immediately reset in its starting position.

Specifications

Model	83-20-00	83-21-00
Capacities	0-6400 grams	0-10,000 grams
Pendulum range	400, 800, 1600, 3200, 6400	5000, 10,000
Accuracy	1.0% of pendulum range	1.0% of pendulum range
Calibration weights	20%, 50% and 90%	20%, 50% and 90%
Measuring principle	Hi-resolution digital encoder	
Languages	German, French, English, Dutch, Italian, Spanish and Finnish	
Statistics	Average, Maximum, Minimum, SD, COV and Tear Index	
Standard ASTM D 1424	Standard Test Method for Tearing Strength of Fabrics by Falling Pendulum Type (Elmendorf) Apparatus	
Dimensions W x D x H	21.3 in x 19.7 in x 19.7 in 540mm x 500mm x 500mm	
Weight	52 kg (115 lbs)	
Electrical	110V/60Hz or 220V/50Hz	
Air Requirements	600-700 kPa	
Measuring Range	0-100 N for Textiles	

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