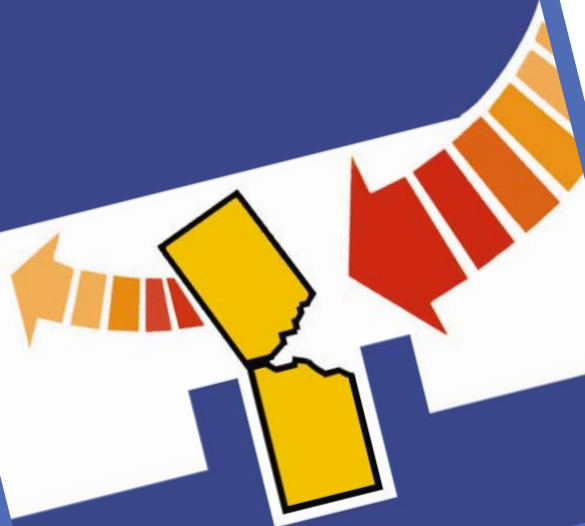




TEAR TESTER



**DESIGN AND PRODUCTION OF
INSTRUMENTS AND APPARATUS
FOR QUALITY CONTROL
ON MATERIALS**



**These instruments are made in
compliance with CE health and
safety requirements**





A ISO known as the Elmendorf test, the tearing test has been performed in the paper industry for more than half century in order to measure the mean internal resistance of cellulose or papers 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. newspaper) or liable to be damaged by sharp or heavy objects (e.g. paper bags). Subsequently, the test was naturally adopted for all materials in the form of sheet or films (cardboards, cloth, knitted fabrics, plastic films, aluminium foil, non-woven fabrics, complex flexible packaging, etc.) for which the service requirements are similar to those for paper.

Principle

The test is carried out on a specimen composed of one or more sheets of standard dimensions, usually with a distance of 43 mm (1,7") remaining to be torn after initiating the tear. The energy of a pendulum of suitable weight is 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 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.

Standards

The instrument was manufactured according the following standards
 ASTM D 689, ASTM D 1922, ASTM D 1424, ISO 1974, ISO 6383/2, BSI 4468, NF Q 03-011, NF T 54-141, NF G 07-149, UNI 6444, CSA D9, SCAN P 11, TAPPI 414, APPITA P 400, NEN 1760 and others equivalent.

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 is immediately reset in its starting position.

Unparalleled Performances

The apparatus exists in two basic versions:

- Model ED30 - ED.401.01 is designed for tests on paper, aluminium, plastic films, complex flexible packaging, non-woven fabrics and other low strength materials.
- Model ED32 - ED.401.02 is designed for testing cardboard, natural or synthetic fabrics, coated fabrics and other medium strength materials.

Technical Characteristics

Specifications	ED30 - ED.401.01	ED32 - ED.401.02
Maximum capacity	64000 mN (millinewtons)	100 N
Measurement scales (by adding or removing easily interchangeable weights)	4000-8000-16000 32000-64000 mN	50-100 N
Measurement and display units	mN	N
Accuracy of the mean force measurement	±% of the indicated value or ±0.25% of the scale employed	±1% of the indicated value or ±0.25% of the scale employed
Computer-assisted calibration software + set of weights and accessories	Option	Option
Weights for routine inspection	Option	Option
Automatic pendulum reset	Option	Standard
Automatic specimen notching	Standard	
Safety hood	Standard	
Automatic weights recognition	Standard	
Specimen preparation tools supplied with the apparatus	Shear (papers) or punch (plastic films)	Standard punch for use with a hammer or a press
Computer or printer output	RS 232 C	
Number of sheets selector	Standard	
Pneumatic grips	Standard	
Measurement and display of the balk upswing angle (zero)	Standard	
Software for PC	Dos: Loged 10; Windows: Edwin	
Overall dimensions (WxDxH) mm	540 x 500 x 500	
Weight (kg)	52	
Electric supply	115/230 V (±10%) Singlephase - -47 to 63 Hz	
Compressed air	600 kPa (90 psi)	

"Due to the continuous development policy of CEAST's Research and Development Department, changes may be introduced without notice"

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