TEAR TESTER
83-20-00, 83-21-00

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
- Small, table-top instrument
- Maintaining a uniform quality level
- Safety Hood protects operator from injury while pendulum is in motion.

TEAR TESTING

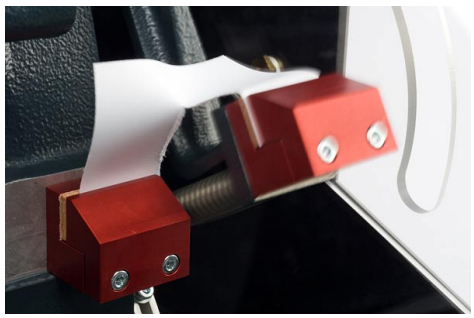
Tear testing measures the force required to continue the tearing of an initial cut in sheet materials. Models and weights are available to test material with a variety of strengths. This is also useful to evaluate strength of perforated materials.

Also 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, seat belts, protective clothing).

Subsequently, the test was naturally adopted for all materials in the form of sheet or films, cardboards, cloth, knitted fabrics, plastic films, aluminum foil, non-woven fabrics, complex flexible packaging etc. for which the service requirements are similar to those for paper.

OPERATION

The test is carried out on a specimen composed of one or more samples of standard dimensions, usually with a distance of 1.7 in (43mm) 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.



▲ *Shows Testing Apparatus in motion*