

# PROTEAR™ ELMENDORF TEARING TESTERS (Electronic & Mechanical Models)

The Elmendorf tear tester is essential in materials quality control - providing more information on tearing properties than any other instrument. Therefore it is recognised as the standard worldwide.

It is the best way to accurately measure the tear resistance of sheet materials including paper, packaging, foils, textiles, non-wovens and plastic films.

Our testers offer several capacity configurations ranging from 200 to 6400 grams. Capacities are changed quickly and easily with augmenting weights. This configuration eliminates the necessity of multiple pendulums and simplifies the testing of different materials.

## Operation

The materials' tearing resistance is measured via the transference of the potential energy stored in the raised pendulum to kinetic energy. A portion of this energy is absorbed during the tearing of the sample and is used as a measure of the materials' resistance to a continuing tear. The force required to tear the sample is reported as a percentage of the pendulum capacity.

## Electronical model

This model is distinguished by its appropriate design, easy operation and menu-driven software, which lets you control test parameters easily, obtain crucial data in seconds. It allows input of specimen data as thickness, g/m<sup>2</sup>, number of plies being torn, MD/CD direction and indication of the results of the pendulum capacity specific to the specimens, in %, in millinewton or in grams.

A statistical analysis of the results of max. 99 measurements can be activated and transmitted by means of a RS-232 interface or printerinterface to peripheral devices.

## Mechanical model

This model is a basic tear tester that offers an economic alternative to the electronic version. It offers the same pendulum configuration but forgoes the electronics. Test results are obtained by means of a pointer on a graduated scale from 0-100 %.



Model ProTear™ Electronic



Model ProTear™ Mechanical

## Features (electronical model)

- User-friendly, one-touch software :
  - test results include tear strength, tear per ply, average tear strength and tear index
  - quickly enter sample data - thickness, basis weight, sample id and sample direction
  - configurable display - test parameters, results and reports
  - obtain results as percent of pendulum capacity, grams, pounds and millinewtons
  - calculated statistics - average, high, low, standard deviation, range and variance
  - configurable reports
  - provision to delete and restore test results
- Digital encoder ensures accurate results (0.2 % accuracy of the pendulum capacity)
- Considering of the bearing friction when reporting results
- Easy change of the pendulum capacities comprised between 200 - 1600 g and 1600 - 6400 g
- Easy and precise, electronic levelling and pendulum adjustment

*Non-wovens, Packaging, Paper, Plastics, Textile...*

## Physical specifications

### Dimensions (WxLxH)

48 x 58 x 40 cm

### Net Weight

16.8 kg (basic device less pendulum and weight)

## Options

- **Augmenting weights**  
quick change of the pendulum capacities comprised between 200 - 6400 g.
- **Calibration check weights**  
provide the ability to verify calibration of your instruments. Available to check weights of 200, 400, 800, 1600, 3200 and 6400 grams.  
Calibration certificates available.
- **Spencer impact attachment**  
measures the impact resistance of various materials, typically plastic film. Complies with ASTM D3420.  
This attachment consists of a curved metal arm that is permanently attached to the pendulum and is fitted on the end with an interchangeable impact head that is available in various shapes and sizes. The pendulum wings the impact head through the clamped specimen and the energy required to puncture the sample is recorded.
- **Data acquisition software (DAS)**  
to capture serial data, customise it for specific requirements and then transfer it to any Windows application. Enables to create graphs and reports that automatically update with real-time data.
- **Air clamp assembly**  
available for the mechanical model to ensure uniform pressure and save testing time.

## Standards

**DIN 53862, 53128, ISO 1974, ASTM D295, D751, D1424, D1922, TAPPI T-414, T-496, BS 4253, 4468, CPPA D.9, SCAN P-11**

## Performance data

### Capacity

Electronic 200, 400, 800, 1600, 3200, 6400 g  
Mechanical 1600, 3200, 6400 g

### Result reporting

Electronic digital through encoder  
Mechanical pointer

### Results units

Electronic % of pendulum, g, lbs, mN  
Mechanical % of pendulum

### Specimen clamp

Electronic pneumatic  
Mechanical mechanical or pneumatic

### Pendulum release

Electronic pneumatic  
Mechanical mechanical

### Display

Electronic LCD display, 4 x 16 characters  
Mechanical pointer

### Statistical analysis

Electronic mean value, standard deviation, highest, lowest values, variance

### Test memory

Electronic 99 tests with statistics

### Power supply

Electronic 230V, 50 Hz compressed-air 6 bar

### Power consumption

Electronic max. 10 W

“Partners in Quality”