IMPACT RESISTANCE TESTING FOR PLASTIC FILMS

Film manufacturers that produce packaging materials for plastic bags and packaged goods require increased impact/puncture strength for product integrity during packaging and transport.

Impact resistance of plastic films provide useful information to determine the energy required to puncture a film sheet. Two primary dynamic impact methods exist for measuring plastic film. The Dart Drop method based on ASTM D 1709 is a pass/fail test. The test records the weight of the dart which penetrates through the film sample. (See TMI Part # 43-61).

The Spencer Impact method is based on ASTM D 3420. An attachment to the Elmendorf Tear Tester is mounted on the top of the instrument and measures the puncture impact resistance of a plastic film sheet or other related sheet-like material. The fixture consists of a probe mounted onto the end of the Elmendorf pendulum and an air-operated clamp used to secure the film sample. The unit measures the resistance to impact/puncture as the probe penetrates a sheet of plastic film. Both Elmendorf Tear and Spencer Impact measurements can be performed on one instrument.

The TMI Spencer Impact fixture consists of an air-operated clamping ring with a diameter of 89.0 +/- 0.5 mm. The puncture impact arm has a radius of 12.7 mm and a diameter of 19.0 mm. Measurement ranges include 200, 400, 800, 1600, 3200 and 6400 gf.

Spencer Impact Attachment meets ASTM D 3420 (Part B).

**Part Numbers:**
- 83-76-01-0002  Elmendorf/Spencer combination tester
- 83-76-06  3200 gram Tear/Spencer pendulum
- 83-76-07  6400 gram Tear/Spencer pendulum
- 83-76-08 Universal Tear/Spencer pendulum 200, 400, 800 & 1600 gram pendulums (required calibration weights included)

**Specimen sizes:**
- Square – 127 mm x 127 mm
- Round – 127 mm diameter

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