TC 61

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Textile glass — Determination of tensile breaking force of mats

Verre textile — Détermination de la force de rupture en traction des mats

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3342 was drawn up by Technical Committee ISO/TC 61, *Plastics*, and circulated to the Member Bodies in January 1974.

It has been approved by the Member Bodies of the following countries :

Belgium	India	South Africa, Rep. of
Brazil	Iran	Spain
Bulgaria	Israel	Sweden
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Germany	Poland	U.S.A.
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The Member Body of the following country expressed disapproval of the document on technical grounds :

Ireland

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Textile glass — Determination of tensile breaking force of mats

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the tensile breaking force of textile glass mats.

2 REFERENCES

ISO 139, *Textiles — Standard atmospheres for conditioning and testing.*

ISO/R 291, *Plastics — Standard atmospheres for conditioning and testing.*

3 DEFINITIONS

For the purposes of this International Standard, the following definitions apply.

3.1 tensile breaking force : The maximum force required to break the test specimen in a tensile test carried to rupture. It is generally expressed in newtons.

3.2 time to break : The time-interval, measured in suitable units such as seconds, during which the test specimen is under a (generally increasing) tension, i.e. absorbing the energy required to reach the maximum force.

NOTE — Time to break does not include the time to remove slack from the specimen. On machines fitted with an autographic recorder, the time to break is indicated by the time elapsing after the pen registers the initial force sustained by the specimen until the pen registers the maximum force.

4 PRINCIPLE

Elongation of a pre-conditioned test specimen[1] of standard dimensions by a suitable mechanical device which indicates the tensile breaking force on a recorder or scale.

5 APPARATUS

5.1 Tensile testing machine.

5.1.1 All testing machines shall include :

a) A pair of suitable clamps to grip the specimen. They shall have a width of 160 mm and a minimum depth of 25 mm.

The faces of the clamps shall be plane and parallel, shall ensure uniform pressure over the whole width of the test specimen, and shall prevent it from slipping.

The clamps shall also allow, at any moment, alignment of the axis of the test specimen with the direction of the applied force. The initial distance between the clamps shall be 200 mm.

b) A means for applying tension to the specimen.

c) A mechanism which will continuously indicate or record the force sustained by the specimen.

The mechanism shall be practically free from inertia at the specified speed of testing and shall indicate the force with an accuracy within 1 % of the true value.

Two types of testing machine are generally used, one with a constant rate of separation, the other with a constant time to break.

5.1.2 The maximum error of the indicated force, at any point in the range in which the machine is used, shall not exceed 1 % of the true force. The error allowed for the indicated clamp separation shall not exceed 1 mm. The accuracy of the tensile testing machine shall be verified, for example by means of calibrated springs of appropriate characteristics.

5.2 Equipment for producing a suitable atmosphere for pre-conditioning (see 6.1).

5.3 Equipment for producing and maintaining the standard test laboratory atmosphere (see 6.2).

5.4 Polished template, 150 mm wide and of suitable length *b* (see clause 7).

5.5 Suitable trimming tool, for example knife, scissors or disk cutter.

5.6 Stopwatch.

1) Test specimens shall always be taken from rolls of mat even when sampling is done at the delivery end of the mat plant.