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## Textile glass — Mats — Determination of tensile breaking force

*Verre textile — Mats — Détermination de la force de rupture en traction*

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Reference number  
ISO 3342:1987 (E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3342 was prepared by Technical Committee ISO/TC 61, *Plastics*.

This second edition cancels and replaces the first edition (ISO 3342:1975), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Textile glass — Mats — Determination of tensile breaking force

## 1 Scope and field of application

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

The method has been established for chopped strand mat but is equally applicable to certain types of continuous filament mat intended for pultrusion.

## 2 References

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

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

ISO 2602, *Statistical interpretation of test results — Estimation of the mean — Confidence interval.*

ISO 3374, *Textile glass — Mats — Determination of mass per unit area.*

## 3 Definition

For the purposes of this International Standard, the following definition applies:

**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.

## 4 Principle

Elongation of a pre-conditioned test specimen<sup>1)</sup> 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 that 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.

The recommended machine is one having constant rate of extension. Other types of test machine exist, e.g. constant rate of loading, constant rate of traverse. If such machines only are available, they may be used by agreement between interested parties, but the results from different types of machines cannot necessarily be compared.

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 316 mm long.

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