
INTERNATIONAL STANDARD



3597

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Textile glass reinforced plastics — Composites in the form of rods made from textile glass rovings — Determination of flexural (cross-breaking) strength

Plastiques renforcés au verre textile — Composites sous forme de joncs à base de stratifils — Détermination de la résistance à la flexion

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 3597 was developed by Technical Committee ISO/TC 61, *Plastics*, and was circulated to the member bodies in November 1974.

It has been approved by the member bodies of the following countries :

Austria	India	Portugal
Belgium	Iran	Romania
Brazil	Ireland	South Africa, Rep. of
Canada	Israel	Sweden
Chile	Italy	Switzerland
Czechoslovakia	Japan	Turkey
Finland	Netherlands	United Kingdom
Germany	New Zealand	U.S.A.
Hungary	Poland	Yugoslavia

No member body expressed disapproval of the document.

Textile glass reinforced plastics – Composites in the form of rods made from textile glass rovings – Determination of flexural (cross-breaking) strength

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining, by a three-point loading technique, the flexural (cross-breaking) strength of composites in the form of rods of circular cross-section made from textile glass rovings impregnated with resin.

2 REFERENCES

ISO 178, *Plastics – Determination of flexural properties of rigid plastics*.

ISO 291, *Plastics – Standard atmospheres for conditioning and testing*.¹⁾

ISO 1172, *Textile glass reinforced plastics – Determination of the loss on ignition*.

3 APPARATUS AND MATERIAL

3.1 Mould, in the form of a straight rigid cylinder having a minimum length of 400 mm and a standard internal diameter of $6 \pm 0,1$ mm; if other diameters are chosen, these shall be selected upon agreement between the interested parties from the range of 4 to 10 mm (with tolerances of $\pm 0,1$ mm). The mould may be constructed of glass, polytetrafluorethylene, or any other suitable material.

3.2 Resin

Not all resin systems are necessarily suitable and the system to be used shall be at the discretion of the roving supplier. In the event of dispute, the system used shall be declared and shall form the basis for the test, subject to an

agreement between the interested parties. The selected resin system shall be mixed in accordance with the resin manufacturer's detailed instructions.

3.3 Suitable wire, for pulling the roving through the mould (3.1).

3.4 Oven with air circulation, for curing and/or postcuring the resin at the recommended temperature.

3.5 Flexural test apparatus, as specified in ISO 178, but with the following additional characteristics :

- a) the loading nose and supports shall be steel rods waisted in the middle to ensure specimen alignment. An example for a 6 mm diameter test specimen is shown in figure 1;
- b) the span shall be 16 times the chosen rod diameter.

Dimensions in millimetres

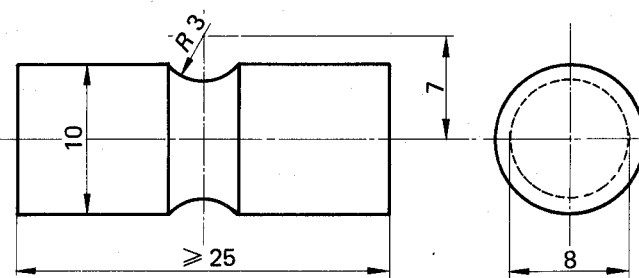


FIGURE 1 — Example of supports and loading nose for testing textile glass fibre reinforced plastic rods of 6 mm diameter

1) At present at the stage of draft. (Revision of ISO/R 291.)