

Reinforced thermoplastic moulding compounds — Specification for GMT —

Part 2: Methods of test and general requirements

The European Standard EN 13677-2:2003 has the status of a
British Standard

ICS 83.120

National foreword

This British Standard is the official English language version of EN 13677-2:2003.

The UK participation in its preparation was entrusted to Technical Committee PRI/42, Fibre reinforced thermosetting plastics and prepregs, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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générales

Verstärkte Thermoplast-Formmassen - Spezifikation für
GMT - Teil 2: Prüfverfahren und allgemeine Anforderungen

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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Foreword

This document (EN 13677-2:2003) has been prepared by Technical Committee CEN /TC 249 "Plastics", the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2003, and conflicting national standards shall be withdrawn at the latest by August 2003.

This standard is one part of EN 13677 which is structured as follows :

Reinforced thermoplastic moulding compounds – Specification for GMT

$\frac{3}{4}$ *Part 1 : Designation*

$\frac{3}{4}$ *Part 2 : Methods of test and general requirements*

$\frac{3}{4}$ *Part 3 : Specific requirements*

Annexes A to H are normative. Annex I is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard defines the general requirements applicable to the specification of all types of glass mat reinforced polypropylene composite sheet (GMT) falling within the scope of this specification as defined in Part 1 of the standard including the sampling procedures, packaging, storage and labelling requirements.

This European Standard describes the procedures to be followed in the preparation moulded plaques from which are cut the test specimens for the determination of mechanical properties as specified in Parts 1 & 3.

This European Standard also defines the test methods to be used to determine the designated and specified properties given in Parts 1 & 3 respectively.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 10204, *Metallic products – Types of inspection documents*.

EN ISO 75-2, *Plastics – Determination of temperature of deflection under load – Part 2: Plastics and ebonite (ISO 75-2:1993)*.

EN ISO 179-2, *Plastics – Determination of Charpy impact properties – Part 2: Instrumented impact test (ISO 179-2:1997)*.

EN ISO 472:2001, *Plastics – Vocabulary (ISO 472:1999)*.

EN ISO 527-2, *Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:1993 including Corr 1:1994)*.

EN ISO 527-4, *Plastics – Determination of tensile properties – Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites (ISO 527-4:1997)*.

EN ISO 1172, *Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates – Determination of the textile-glass and mineral-filler content – Calcination methods (ISO 1172:1996)*.

EN ISO 3146, *Plastics – Determination of melting behaviour (melting temperature or melting range) of semi-crystalline polymers by capillary tube and polarizing-microscope methods (ISO 3146:2000)*.

EN ISO 6603-2, *Plastics – Determination of puncture impact behaviour of rigid plastics – Part 2: Instrumented puncture test (ISO 6603-2:2000)*.

EN ISO 11403-2, *Plastics - Acquisition and presentation of comparable multipoint data - Part 2: Thermal and processing properties (ISO 11403-2:1995)*.

ISO 1183, *Plastics – Methods for determining the density and relative density of non-cellular plastics*.

ISO 2577, *Plastics – Thermosetting moulding materials – Determination of shrinkage*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 472:2001 apply.

4 General Requirements

4.1 Appearance

4.1.1 Surface

The glass fibre reinforcement shall be thoroughly impregnated with the polypropylene matrix. No unimpregnated fibre bundles shall be visible on the surface of an "as supplied" blank after heating to the moulding temperature as defined in 6.1.5.

4.1.2 Rectangularity

If supplied as pre-cut blank, rectangularity shall be determined by measuring the diagonals of a blank using the procedure given in the normative annex B.

4.1.3 Warpage

Warpage of blanks shall be determined by guiding a template over a blank using the procedure given in the normative annex A.

4.2 Packaging

Unless agreed to the contrary between customer and supplier, the GMT material shall be supplied packed on pallets suitable for handling by fork lift stacker truck and transportation by road truck without slipping of individual blanks or distortion of the pallet likely to give rise to instability of the pallet.

4.3 Labelling

Each package shall be clearly identified with :

- 4.3.1 Reference to the designation code.
- 4.3.2 Product type.
- 4.3.3 Number of the production lot.
- 4.3.4 Number of the pallet with the lot.
- 4.3.5 Blank or coil dimensions.
- 4.3.6 Gross and net weight of the pallet.
- 4.3.7 The number of blanks or coils may also be included (optional).

5 Sampling

5.1 General

The properties of GMT shall be measured by the manufacturer one occasion only on each lot and documented in the form of a certificate of conformity. One lot is, as a maximum, the amount of GMT produced without changing the product specification.

5.2 Certificate of Conformity

Samples shall be taken out of the production as needed to undertake both the obligatory tests defined in this specification plus such other optional tests as may be agreed between customer and supplier. The results of these tests shall be reported in the certificate of conformity. The certificate shall comply with the requirements of EN 10204.