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Extruded sheets of impact-modified polystyrene (PS-I) — Requirements and test methods

Plaques extrudées en polystyrène modifié résistant au choc (PS-I) — Exigences et méthodes d'essai

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14631:1999), of which it constitutes a minor revision.

The change compared to the previous edition are as follows:

— references to ISO 2897-1 have been replaced by ISO 19063-1.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Extruded sheets of impact-modified polystyrene (PS-I) — Requirements and test methods

1 Scope

This document specifies the requirements and test methods for solid flat extruded sheets of impact-modified polystyrene (PS-I) without fillers and reinforcing materials.

This document applies only to thickness 0,25 mm to 20,0 . It also applies to PS-I sheet in roll form.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 2: Instrumented impact test*

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

ISO 306, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method*

ISO 1183-2, *Plastics — Methods for determining the density of non-cellular plastics — Part 2: Density gradient column method*

ISO 2039-1, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 2818, *Plastics — Preparation of test specimens by machining*

ISO 6603-1, *Plastics — Determination of multiaxial impact behaviour of rigid plastics — Part 1: Falling dart method*

ISO 11501, *Plastics — Film and sheeting — Determination of dimensional change on heating*

ISO 19063-1, *Plastics — Impact-resistant polystyrene (PS-I) moulding and extrusion materials — Part 1: Designation system and basis for specifications*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Material

Sheets shall be made of PS-I extrusion compounds designated by ISO 19063-1 without filler and reinforcing material. Extrusion compounds can contain additives such as processing aids, stabilizers, flame protective agents and colorants. Compounds and additives of unknown identity shall not be used.

NOTE Legal conditions can cause a specific choice of extrusion compounds.

See 5.3.3.

5 Requirements

5.1 Appearance

Sheets shall be substantially free from bubbles, voids, cracks, visible impurities and other defects which would make them unfit for the intended use. Surfaces shall be substantially smooth, if not embossed, and free from grooves, sink marks or damages. Colorants shall be homogeneously distributed throughout the material. Slight colour differences based on extrusion compounds and processing are admissible. Admissible variations in any of the above as well as gloss level specifications, if required, shall be agreed between the interested parties. Sheets shall be examined in accordance with 6.3.

5.2 Dimensional tolerances

5.2.1 Thickness

Within any delivery of sheets, the maximum thickness difference from the nominal,

Δh_1, in millimetres shall fall within the range shown in Formula (1):

$$|\Delta h_1| \leq (0{,}03 \text{ mm} + 0{,}04 \times h_n) \quad (1)$$

where h_n is the nominal sheet thickness in millimetres.

Within any individual sheet, the maximum thickness variation from the average actual value, Δh_2, in millimetres, shall fall within the range shown in Formula (2):

$$|\Delta h_2| \leq (0{,}03 \text{ mm} + 0{,}02 \times h_n) \quad (2)$$

Testing shall be in accordance with 6.4.1.

5.2.2 Length and width

Nominal length, l_n, and nominal width, b_n, of sheets shall be agreed between the interested parties. Unless agreed otherwise, the length is in the direction of extrusion. For any individual sheet selected at random from any delivery, the tolerances of length and width shall be in accordance with Table 1. Testing shall be in accordance with 6.4.2.