INTERNATIONAL STANDARD

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Plastics — Polycarbonate sheets — Types, dimensions and characteristics

Plastiques — Plaques en polycarbonate — Types, dimensions et caractéristiques

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Contents

Page

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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11963 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

This second edition cancels and replaces the first edition (ISO 11963:1995), which has been technically revised.

Plastics — Polycarbonate sheets — Types, dimensions and characteristics

1 Scope

This International Standard specifies the requirements for solid, flat extruded sheets of polycarbonate (PC) for general applications. It applies specifically to sheets made of poly(*p,p′*-isopropylidene-diphenyl carbonate). The sheets may be coloured or colourless, and they may be transparent, translucent or opaque. The sheets may also have a special weather-protective layer on one or both surfaces.

This International Standard applies only to thicknesses equal to or greater than 1,5 mm.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 62:2008, *Plastics — Determination of water absorption*

ISO 75-1, *Plastics — Determination of temperature of deflection under load — Part 1: General test method*

ISO 75-2:2004, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 179-1:2010, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test*

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

ISO 306:2004, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

ISO 489:1999, *Plastics — Determination of refractive index*

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 877-1, *Plastics — Methods of exposure to solar radiation — Part 1: General guidance*

ISO 877-2, *Plastics — Methods of exposure to solar radiation — Part 2: Direct weathering and exposure behind window glass*

ISO 877-3, *Plastics — Methods of exposure to solar radiation — Part 3: Intensified weathering using concentrated solar radiation*

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

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 2859-10, *Sampling procedures for inspection by attributes — Part 10: Introduction to the ISO 2859 series of standards for sampling for inspection by attributes*

ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 7391-1, *Plastics — Polycarbonate (PC) moulding and extrusion materials — Part 1: Designation system and basis for specifications*

ISO 8256:2004, *Plastics — Determination of tensile-impact strength*

ISO 11359-2, *Plastics — Thermomechanical analysis (TMA) — Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ISO 13468-1, *Plastics — Determination of the total luminous transmittance of transparent materials — Part 1: Single-beam instrument*

ISO 14782, *Plastics — Determination of haze for transparent materials*

IEC 60093, *Methods of test for volume resistivity and surface resistivity of solid electrical insulating materials*

CIE 15, *Colorimetry*

CIE 85, *Solar spectral irradiance*

3 Composition

3.1 The following type of PC is preferred for PC sheet extrusion:

Thermoplastics ISO 7391-PC,E,61-09

(see ISO 7391-1 for explanation of designation system for PC)

3.2 The sheet may contain colorants, additives, processing aids and stabilizers (e.g. UV-absorbers) up to a total mass content of 5 %.

3.3 Sheets of the type specified in Clause 4 may have a protective layer (on one or both surfaces) with a UV-absorber content higher than that of the substrate. The composition of the protective layer (e.g. polycarbonate and UV-absorber, or PMMA and UV-absorber, or other materials) and the application techniques (e.g. co-extrusion, coating, lamination, flow-coating, dipping) are not specified by this International Standard.

4 Requirements

4.1 Masking

The surface of the sheet as delivered shall be protected by plastic film or paper or a combination of both.

4.2 Appearance

Requirements concerning defects and optical quality shall be agreed upon between the interested parties.

4.3 Colour

The colorant(s) shall be homogeneously and uniformly distributed throughout the material, unless otherwise specified. For critical requirements, the degree of homogeneity shall be specified by the interested parties.