

INTERNATIONAL
STANDARD

ISO
11963

Third edition
2019-07

**Plastics — Polycarbonate sheets —
Types, dimensions and characteristics**

*Plastiques — Plaques en polycarbonate — Types, dimensions et
caractéristiques*



Reference number
ISO 11963:2019(E)

© ISO 2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Composition	2
5 Requirements	2
5.1 Masking	2
5.2 Appearance	2
5.3 Colour	2
5.4 Dimensions	2
5.4.1 Conditions of measurement	2
5.4.2 Length and width	2
5.4.3 Deviation of shape from rectangular	3
5.4.4 Thickness	3
5.5 Shrinkage	3
5.6 Basic properties	3
5.7 Weathering behaviour	3
5.8 Other properties	4
6 Test methods	4
6.1 General	4
6.1.1 Sampling	4
6.1.2 Conditioning and testing of specimens	4
6.1.3 Preparation of specimens	4
6.2 Colour	4
6.3 Dimensions	5
6.4 Mechanical properties	5
6.5 Thermal properties	6
6.6 Optical properties	6
6.7 Weathering behaviour	6
6.7.1 Natural weathering	6
6.7.2 Artificial-weathering tests	6
7 Reaction to fire	6
8 Use in contact with food	6
9 Retest and rejection	7
Annex A (normative) Determination of change in dimensions at elevated temperature (shrinkage)	8
Bibliography	10

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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*.

This third edition cancels and replaces the second edition (ISO 11963:2012), which has been technically revised. The main changes compared to the previous edition are as follows.

- Relative humidity rule (50 ± 10 %) was deleted from [5.4.1](#). Dimension change by the moisture absorption is very small, and the polycarbonate materials do not need to state adjustment of the relative humidity in the dimensional measurement.
- Relative humidity rule was changed from (65 ± 5 %) to (50 ± 10 %) in [6.7.2](#). Polycarbonate materials are not humidity sensitive material in weathering.

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.

Plastics — Polycarbonate sheets — Types, dimensions and characteristics

1 Scope

This document 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 can be coloured or colourless, and they can be transparent, translucent or opaque. The sheets can also be those that have a special weather-protective layer on one or both surfaces.

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

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

ISO 75-2:2013, *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 306:2013, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

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

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

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

3 Terms and definitions

No terms and definitions are listed in this document.