



SLOVENSKI STANDARD

SIST EN 3656:2023

01-marec-2023

Aeronavtika - Polikarbonat, samougasljiv, majhne emisije dima - Značilnosti

Aerospace series - Polycarbonate, self-extinguishing, low smoke emission - Characteristics

Luft- und Raumfahrt - Polycarbonat, flammgeschützt, raucharm - Eigenschaften

Série aérospatiale - Polycarbonate auto-extinguible, à faible émission de fumée - Caractéristiques

Ta slovenski standard je istoveten z: **EN 3656:2022**

ICS:

49.025.40 Guma in polimerni materiali Rubber and plastics

SIST EN 3656:2023

en,fr,de

EUROPEAN STANDARD

EN 3656

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2022

ICS 49.025.40

English Version

Aerospace series - Polycarbonate, self-extinguishing, low smoke emission - Characteristics

Série aérospatiale - Polycarbonate auto-extinguible, à faible émission de fumée - Caractéristiques

Luft- und Raumfahrt - Polycarbonat, flammgeschützt, raucharm - Eigenschaften

This European Standard was approved by CEN on 24 July 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

[SIST EN 3656:2023](https://standards.iteh.ai/catalog/standards/sist/4847f65e-9344-498e-a610-f0161696d2fd/sist-en-3656-2023)

<https://standards.iteh.ai/catalog/standards/sist/4847f65e-9344-498e-a610-f0161696d2fd/sist-en-3656-2023>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Field of application	4
4.1 Typical application	4
4.2 Material condition	4
4.3 Surface finish	4
5 Required characteristics	4
6 Designation	5
7 Technical specification	5

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 3656:2023](#)

<https://standards.iteh.ai/catalog/standards/sist/4847f65e-9344-498e-a610-f0161696d2fd/sist-en-3656-2023>

European foreword

This document (EN 3656:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

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 June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

[SIST EN 3656:2023](https://standards.iteh.ai/catalog/standards/sist/4847f65e-9344-498e-a610-f0161696d2fd/sist-en-3656-2023)

<https://standards.iteh.ai/catalog/standards/sist/4847f65e-9344-498e-a610-f0161696d2fd/sist-en-3656-2023>

EN 3656:2022 (E)**1 Scope**

This document specifies the characteristics of self-extinguishing and low smoke emission semi-finished polycarbonate sheets with and without UV radiation protection requirement, as used for aircraft equipment, such as internal panelling, simple internal glazing, sound-proofing panels, light covers, etc.

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.

EN 2719, *Aerospace series — Polycarbonate sheet — Technical specification*¹

EN 3779, *Aerospace series — Polycarbonate sheet — Dimensions*¹

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*²

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 <https://www.electropedia.org/>

4 Field of application**4.1 Typical application**

Extruded sheet of the thermoformed moulded parts for aerospace components which are not required to meet regulations concerning heat emission in case of fire.

4.2 Material condition

For colourless or coloured transparent material, up to 20 % of clean reprocessed material may be used.
For coloured opaque material, up to 50 % of clean reprocessed material may be used.

4.3 Surface finish

Smooth or textured.

5 Required characteristics

According to Table 1 to Table 3.

For qualification testing, all characteristics called for in this material standard shall be substantiated by performing tests on three production batches.

For acceptance testing, all tests identified in footnote b in Table 1 to Table 3 shall be performed.

¹ Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), <https://www.asd-stan.org/>.

² Published by: ISO International Organization for Standardization <http://www.iso.ch/>.

6 Designation

It shall be in accordance with EN 3779.

7 Technical specification

It shall be in accordance with EN 2719

Table 1 — Physical tests

Column	1	2	3	
No.	Characteristics	Units	Min.	Max.
1				
2	Density ^a	g/cm ³	1,18 ^b	1,24 ^b
3				
4	Deep drawing characteristics	—	EN 2719, see 4.9.	
5				
6				
7	Water absorption	mg	—	30
8	Mechanical characteristics			
9	Tensile stress at yield ^c	MPa	50 ^b	—
10	Tensile strain at yield ^c	%	55 ^b	—
11	Modulus of elasticity ^d	MPa	2 000 ^b	—
12	Impact strength ^e	kJ/m ²	No rupture	
13				
14				
15				
16	Thermal characteristics			
17	Temperature of deflection under load	°C	128	—
18	Vicat softening temperature	°C	140	—
19	Linear coefficient of thermal expansion	°C	65 × 10 ⁻⁷	—
20				
21				
22				
23				

^a After 48 h of conditioning at standard atmosphere (23 ± 2) °C and relative humidity (50 ± 5) % according to ISO 554.

^b These values are to be demonstrated during acceptance testing of the production batch.

^c Test speed: 50 mm/min

^d Test speed: 1 mm/min

^e Only for sheets with thickness ≥ 4 mm.