

English Version

**Aluminium and aluminium alloys - Extruded precision
profiles in alloys EN AW-6060 and EN AW-6063 - Part 2:
Tolerances on dimensions and form**

Aluminium et alliages d'aluminium - Profils de
précision filés en alliages EN AW-6060 et EN AW-6063
- Partie 2 : Tolérances sur dimensions et forme

Aluminium und Aluminiumlegierungen -
Stranggepresste Präzisionsprofile aus Legierungen EN
AW-6060 und EN AW-6063 - Teil 2: Grenzabmaße und
Formtoleranzen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (prEN 12020-2:2021) has been prepared by Technical Committee CEN/TC 132 “Aluminium and aluminium alloys”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12020-2:2016.

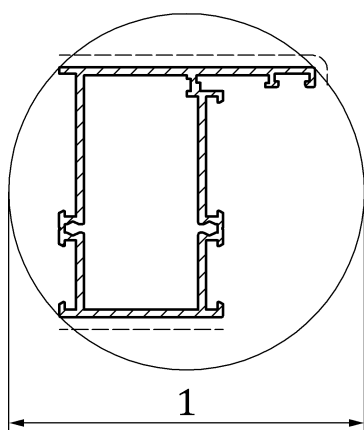
1 Scope

This document specifies tolerances on dimensions and form of extruded precision profiles in alloys EN AW-6060 and EN AW-6063, manufactured with and without a thermal barrier (see Figures 1 and 2). It applies to extruded products supplied without further surface treatment. Precision profiles covered in this document are distinguished from extruded profiles for general applications covered in EN 755-9 by the following characteristics:

- they are mainly for architectural applications designed with mostly uniformly wall-thicknesses;
- they are mainly used for architecture, mechanical engineering and automotive applications (except structural-parts and crash-elements);
- the maximum weight per metre of 10 kg/m;
- the max. wall-thickness proportion (S_{\max}/S_{\min}) of 3,5 mm.

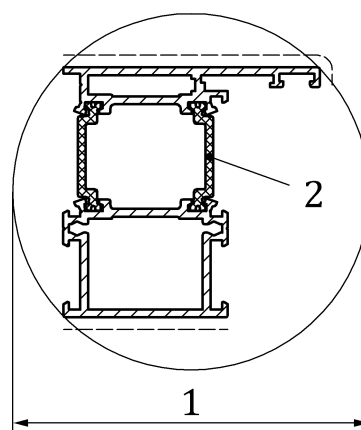
In the case of profiles which, due to the complexity of their design, are difficult to manufacture and specify, then special agreements between supplier and purchaser may need to be reached.

NOTE The effect of the thermal barrier material on the dimensional tolerances is covered by this document although the actual thermal barrier material itself is not (see EN 14024).



Key

1 CD maximum 350 mm



Key

1 CD maximum 350 mm

2 thermal barriers

Figure 1 — Profile without thermal barrier

Figure 2 — Profile containing thermal barrier

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 ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out (ISO 1101)*

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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Tolerances on dimensions

4.1 General

If, for compelling reasons, tolerances closer than those specified in 4.2.2 are required, these shall only be specified for dimensions that are critical to the function, subject to specific agreement between supplier and purchaser. Any such reduction shall not exceed two-thirds of the values specified in this document and is subject to a minimum tolerance band of 0,3 mm.

4.2 Cross-sectional dimensions

4.2.1 General

The tolerances of the following dimensions (see Figure 3) are specified in Tables 1 and 2.

- *A*: wall thicknesses except those enclosing the hollow spaces in hollow profiles;
- *B*: wall thicknesses enclosing the hollow spaces in hollow profiles, except those between two hollow spaces;
- *C*: wall thicknesses between two hollow spaces in hollow profiles;
- *E*: the length of the shorter leg of profiles with open ends;
- *H*: all dimensions (except wall thickness) between points on the cross section of the profile or the centres of open screw holes, including open ends.

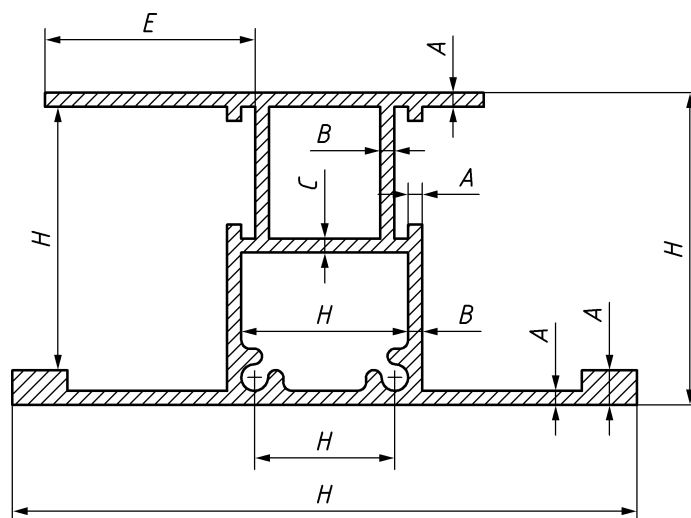


Figure 3 — Definition of dimensions *A*, *B*, *C*, *E*, *H*

4.2.2 Tolerances on dimensions other than wall thickness

The tolerances for dimension H shall be as specified in Table 1.

Table 1 — Tolerances on cross-sectional dimensions

Dimensions in millimetres

Dimension H		Tolerances on H (except open ends)	Tolerances on H (open ends)	
Over	Up to and including		$E \leq 60$	$60 < E \leq 120$ ^a
-	10	$\pm 0,15$	$\pm 0,15$	^b
10	15	$\pm 0,20$	$\pm 0,20$	^b
15	30	$\pm 0,25$	$\pm 0,25$	^b
30	45	$\pm 0,30$	$\pm 0,30$	$\pm 0,45$
45	60	$\pm 0,40$	$\pm 0,40$	$\pm 0,55$
60	90	$\pm 0,45$	$\pm 0,45$	$\pm 0,65$
90	120	$\pm 0,60$	$\pm 0,60$	$\pm 0,80$
120	150	$\pm 0,80$	$\pm 0,80$	$\pm 1,0$
150	180	$\pm 1,0$	$\pm 1,0$	$\pm 1,3$
180	240	$\pm 1,2$	$\pm 1,2$	$\pm 1,5$
240	300	$\pm 1,5$	$\pm 1,5$	$\pm 1,8$
300	350	$\pm 1,8$	$\pm 1,8$	$\pm 2,1$

NOTE Tolerances given in Table 1 do not cover dimensions from a given point inside a closed hollow chamber to any other point outside the chamber.

^a Tolerances for values of dimension E over 120 mm shall be subject to agreement between supplier and purchaser.

^b Shall be subject to agreement between purchaser and supplier.

4.2.3 Tolerances on wall thickness of solid and hollow profiles

The tolerances on wall thickness (see Figure 3) of solid and hollow profiles shall be as specified in Table 2.