

SLOVENSKI STANDARD

SIST EN 485-3:1998

01-april-1998

5`i a]b]^[b`U i a]b]Yj Y`n`h]bY!`D`c Yj]bYžhU_cj]]b`d`cy Y!` "XY.`Hc`YfUbWV`cV`_]b`cXg]cd_]`a Yf`hcd`c`j U`Ub]`]nXY_cj

Aluminium and aluminium alloys - Sheet, strip and plate - Part 3: Tolerances on shape and dimensions for hot-rolled products

Aluminium und Aluminiumlegierungen - Bänder, Bleche und Platten - Teil 3: Grenzabmaße und Formtoleranzen für warmgewalzte Erzeugnisse

Aluminium et alliages d'aluminium - Tôles, bandes et tôles épaisses - Partie 3: Tolérances sur forme et dimensions des produits laminés à chaud

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ICS:

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Aluminijski izdelki

Aluminium products

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en

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EUROPEAN STANDARD

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English version

Aluminium and aluminium alloys - Sheet, strip and plate - Part 3: Tolerances on shape and dimensions for hot-rolled products

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This European Standard was approved by CEN on 1993-10-08. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard was prepared by CEN/TC 132 "Aluminium and aluminium alloys", the secretariat of which is held by AFNOR.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 7 "Sheet, strip and plate" to work out the following standard :

EN 485-3 "Aluminium and aluminium alloys - Sheet, strip and plate - Part 3 : Tolerances on dimensions and form for hot-rolled products".

This standard is part of a set of four standards. The other standards deal with :

EN 485-1 "Aluminium and aluminium alloys - Sheet, strip and plate - Part 1 : Technical conditions for inspection and delivery".

EN 485-2 "Aluminium and aluminium alloys - Sheet, strip and plate - Part 2 : Mechanical properties".

EN 485-4 "Aluminium and aluminium alloys - Sheet, strip and plate - Part 4 : Tolerances on dimensions and form for cold-rolled products".

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 April 1994, and conflicting national standards shall be withdrawn at the latest by April 1994.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This part of EN 485 specifies the tolerances on shape and dimensions for wrought aluminium and aluminium alloy sheet, strip and plate obtained by hot-rolling, for general engineering applications.

It applies to products with a thickness from 2,5 mm up to and including 200 mm.

It does not apply to semi-finished rolled products in coiled form to be subjected to further rolling (reroll stock) or to special products such as corrugated, embossed, etc. sheet and strip or to special applications such as aerospace which are dealt with in separate European Standards.

Technical conditions for inspection and delivery of products covered by this standard are specified in EN 485-1.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 485-1 Aluminium and aluminium alloys - Sheet, strip and plate - Part 1 : Technical conditions for inspection and delivery.

3 Dimensional tolerances

3.1 Thickness

Thickness tolerances for sheet, strip and plate are specified in table 1.

3.2 Width

3.2.1 Width tolerances for strip are specified in table 2.

3.2.2 Width tolerances for sheet and plate are specified in table 3.

3.3 Length

3.3.1 Length tolerances for strip are not specified.

3.3.2 Length tolerances for sheet and plate are specified in table 3.

4 Shape tolerances

4.1 Lateral curvature

4.1.1 Lateral curvature tolerances for strip are not specified.

4.1.2 Lateral curvature tolerances for sheet and plate with cut or sawn edges are specified in table 4.

The deviation from straightness, d , is measured as indicated in figure 1, while the sheet or plate is resting on an horizontal base plate.

4.2 Flatness

4.2.1 Flatness tolerances for strip are not specified.

4.2.2 Flatness tolerances for sheet and plate are specified in table 5 and are expressed as a percentage of the length L and/or the width W and/or the measured chord length l .

Deviation from flatness, d , resulting from arching, buckling or edge waves, is measured as shown in figures 2 to 5, using a lightweight straightedge and a feeler gauge, dial gauge or scale, while the sheet or plate is resting on an horizontal base plate concave side upwards.

These tolerances do not apply to sheet and plate supplied in the O (annealed) or F (as fabricated) tempers.

These tolerances do not include end or corner turnup.

4.3 Squareness

4.3.1 Squareness tolerances for strip are not specified.

4.3.2 Squareness tolerances for sheet and plate are specified in table 6.

The squareness tolerance is expressed as the maximum allowable difference in length of diagonals AA and BB as shown in figure 6.

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Table 1 : Thickness tolerances

Specified thickness		Thickness tolerance for specified width				
Over	Up to and including	Up to and including 1250	Over 1250 up to and including 1600	Over 1600 up to and including 2000	Over 2000 up to and including 2500	Over 2500 up to and including 3500
≥ 2,5	4	± 0,28	± 0,28	± 0,32	± 0,35	± 0,40
4	5	± 0,30	± 0,30	± 0,35	± 0,40	± 0,45
5	6	± 0,32	± 0,32	± 0,40	± 0,45	± 0,50
6	8	± 0,35	± 0,40	± 0,40	± 0,50	± 0,55
8	10	± 0,45	± 0,50	± 0,50	± 0,55	± 0,60
10	15	± 0,50	± 0,60	± 0,65	± 0,65	± 0,80
15	20	± 0,60	± 0,70	± 0,75	± 0,80	± 0,90
20	30	± 0,65	± 0,75	± 0,85	± 0,90	± 1,0
30	40	± 0,75	± 0,85	± 1,0	± 1,1	± 1,2
40	50	± 0,90	± 1,0	± 1,1	± 1,2	± 1,5
50	60	± 1,1	± 1,2	± 1,4	± 1,5	± 1,7
60	80	± 1,4	± 1,5	± 1,7	± 1,9	± 2,0
80	100	± 1,7	± 1,9	± 1,9	± 2,1	± 2,2
100	150	± 2,2	± 2,2	± 2,7	± 2,8	-
150	200	± 2,8	± 2,8	± 3,3	± 3,3	-

Table 2 : Width tolerances for strip

Specified thickness	Width tolerance for specified width	
	Less than 500	500 up to and including 2500
From 2,5 up to and including 15	by agreement	+ 8 0

Table 3 : Width and length tolerances for sheet and plate

Dimensions in millimetres					
Specified thickness		Width and length tolerance for specified width and length			
Over	Up to and including	Up to and including 1000	Over 1000 up to and including 2000	Over 2000 up to and including 3000	Over 3000 up to and including *)
-	6	+ 6 0	+ 7 0	+ 8 0	+ 11 0
6	12	+ 6 0	+ 8 0	+ 10 0	+ 12 0
12	50	+ 7 0	+ 9 0	+ 12 0	+ 14 0
50	200	+ 10 0	+ 12 0	+ 14 0	+ 16 0
*) Width up to 3500 mm and length up to 15 000 mm					

Table 4 : Lateral curvature tolerances for sheet and plate

Dimensions in millimetres					
Specified width		Lateral curvature d_{max} for specified length L			
Over	Up to and including	Up to and including 2000	Over 2000 up to and including 3000	Over 3000 up to and including 5000	Over 5000 up to and including 15000
-	1250	4	7	10	0,2 % of specified length
1250	1500	3	6	8	
1500	2000	3	6	7	
2000	3500	-	5	6	

Table 5 : Flatness tolerances for sheet and plate

Specified thickness mm		Total deviation %		Partial deviation % (for a chord of at least 300 mm) d_{max}/l
Over	Up to and including	on length d_{max}/L	on width d_{max}/W	
≥ 2,5	3,0	0,4	0,5	0,5
3,0	6,0	0,3	0,4	0,35
6,0	50	0,2	0,4	0,3
50	200	0,2	0,2	by agreement