SLOVENSKI STANDARD

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Aluminij in aluminijeve zlitine - Hladno vleļene palice/drogovi in cevi - 5. del: Palice s pravokotnim prerezom, tolerance mer in oblike

Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 5: Rectangular bars, tolerances on dimensions and form

Aluminium und Aluminiumlegierungen - Gezogene Stangen und Rohre - Teil 5: Rechteckstangen, Grenzabmaße und Formtoleranzen

Aluminium et alliages d'aluminium - Barres et tubes étirés - Partie 5: Barres rectangulaires, tolérances sur dimensions et forme

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Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 5: Rectangular bars, tolerances on dimensions and form

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Foreword

This document (EN 754-5:2008) has been prepared by Technical Committee CEN/TC 132 “Aluminium and aluminium alloys”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

This document supersedes EN 754-5:1995.

Within its programme of work, Technical committee CEN/TC 132 entrusted CEN/TC 132/WG 5 "*Extruded and drawn products*" to revise EN 754-5:1995.

The following technical modifications have been introduced during the revision:

— Clause 2: Alloy EN AW-6262A and EN AW 6065 are added in Group I

— Clause 2: Alloy EN AW-5049 is added in Group II

EN 754 comprises the following parts under the general title "*Aluminium and aluminium alloys — Cold drawn rod/bar and tube*":

— *Part 1: Technical conditions for inspection and delivery*

— *Part 2: Mechanical properties*

— *Part 3: Round bars, tolerances on dimensions and form*

— *Part 4: Square bars, tolerances on dimensions and form*

— *Part 5: Rectangular bars, tolerances on dimensions and form*

— *Part 6: Hexagonal bars, tolerances on dimensions and form*

— *Part 7: Seamless tubes, tolerances on dimensions and form*

— *Part 8: Porthole tubes, tolerances on dimensions and form*

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1 Scope

This document specifies the tolerances on dimensions and form for aluminium and aluminium alloy cold drawn rectangular bars having thicknesses in the range from 2 mm up to and including 60 mm and widths in the range from 5 mm up to and including 200 mm.

The temper designations used in this part are according to EN 515.

2 Alloy groups

The division into group I and group II of the most commonly used general engineering alloys is specified in Table 1. Grouping of other alloys is subject to agreement between supplier and purchaser.

Table 1 — Alloy groups

Group I	EN AW-1050A, EN AW-1200 EN AW-3003, EN AW-3103 EN AW-5005, EN AW-5005A, EN AW-5251 EN AW-6012, EN AW-6060, EN AW-6061, EN AW-6262, EN AW-6262A, EN AW-6063, EN AW-6063A, EN AW-6065 EN AW-6082
Group II	EN AW-2007, EN AW-2011, EN AW-2011A, EN AW-2014, EN AW-2014A, EN AW-2017A, EN AW-2024, EN AW-2030
	EN AW-5019, EN AW-5049, EN AW-5052, EN AW-5154A, EN AW-5754, EN AW-5083, EN AW-5086
	EN AW-7020, EN AW-7022, EN AW-7049A, EN AW-7075

3 Tolerances on dimensions

3.1 Thickness and width

The tolerances on thickness and width are specified in Tables 2 and 3.

For the purpose of this document the alloys are distributed into two groups which correspond to varying difficulty when manufacturing the products.

The division into group I and group II of the most commonly used general engineering alloys is specified in Table 1.

Table 2 — Width and thickness tolerances for alloy group I

Dimensions in millimetres

Width W			Thickness tolerances for thickness range t					
Over	Up to and including	Tolerances	$2 \le t \le 6$	$6 < t \le 10$	$10 < t \le 18$	$18 < t \le 30$	$30 < t \le 40$	$40 < t \le 60$
≥ 5	10	± 0,08	± 0,06	± 0,08	-	-	-	-
10	18	± 0,10	± 0,06	± 0,08	± 0,10	-	-	-
18	30	± 0,15	± 0,06	± 0,08	± 0,10	± 0,15	-	-
30	50	± 0,20	± 0,08	± 0,10	± 0,12	± 0,15	± 0,20	-
50	80	± 0,25	± 0,10	± 0,10	± 0,12	± 0,15	± 0,20	± 0,25
80	120	± 0,28	± 0,12	± 0,12	± 0,15	± 0,20	± 0,25	± 0,30
120	160	± 0,32	-	± 0,12	± 0,15	± 0,20	± 0,30	± 0,35
160	200	± 0,35	-	± 0,15	± 0,20	± 0,25	± 0,35	± 0,40

Table 3 — Width and thickness tolerances for alloy group II

Dimensions in millimetres

Width W			Thickness tolerances for thickness range t					
Over	Up to and including	Tolerances	$2 \le t \le 6$	$6 < t \le 10$	$10 < t \le 18$	$18 < t \le 30$	$30 < t \le 40$	$40 < t \le 60$
≥ 5	10	± 0,12	± 0,09	± 0,12	-	-	-	-
10	18	± 0,15	± 0,09	± 0,12	± 0,15	-	-	-
18	30	± 0,22	± 0,09	± 0,12	± 0,15	± 0,22	-	-
30	50	± 0,30	± 0,12	± 0,15	± 0,18	± 0,22	± 0,30	-
50	80	± 0,37	± 0,15	± 0,15	± 0,18	± 0,22	± 0,30	± 0,37
80	120	± 0,42	± 0,18	± 0,18	± 0,22	± 0,30	± 0,37	± 0,45
120	160	± 0,48	-	± 0,18	± 0,22	± 0,30	± 0,45	± 0,52
160	200	± 0,52	-	± 0,22	± 0,30	± 0,37	± 0,52	± 0,60

3.2 Corner radii

Maximum corner radii are specified in Table 4.

Table 4 — Maximum corner radii

Dimensions in millimetres

Thickness t		Maximum corner radii	
Over	Up to and including	Alloy group I	Alloy group II
≥ 2	10	0,4	0,6
10	30	0,8	1,0
30	60	1,5	2,0

3.3 Length

If fixed lengths are to be supplied, this shall be stated in the order document. The fixed length tolerances are specified in Table 5.

Table 5 — Fixed length tolerances

Dimensions in millimetres

With W		Tolerances on length		
Over	Up to and including	$L \leq 2\,000$	$2\,000 < L \leq 5\,000$	$L > 5\,000$
≥ 5	100	$^{+5}_{0}$	$^{+7}_{0}$	$^{+10}_{0}$
100	200	$^{+7}_{0}$	$^{+9}_{0}$	$^{+12}_{0}$

If no fixed or minimum length is specified in the order document, rectangular drawn bars may be delivered in random lengths. The actual lengths and tolerances on random lengths shall be agreed between supplier and purchaser.

3.4 Squareness of cut ends

The squareness of cut ends shall be within half of the fixed-length tolerance range (Table 5) for both fixed and random lengths, (e.g. for a fixed length tolerance of $^{+10}_{0}$ mm the squareness of cut ends shall be within 5 mm).

4 Tolerances on form

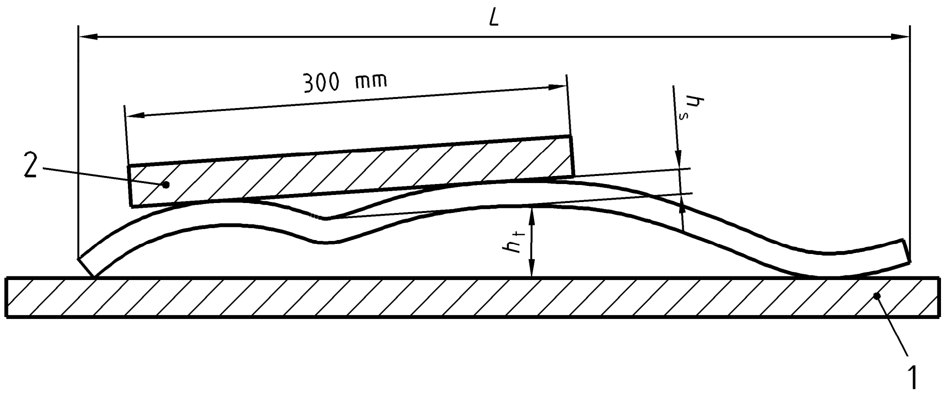
4.1 Straightness

Deviations from straightness, h_s and h_t, shall be measured as shown in Figure 1 with the rectangular bar placed on a horizontal base plate so that its mass decreases the deviation.

For rectangular bars with thickness equal to or greater than 6 mm, the straightness tolerances are specified in Table 6. (The straightness tolerance h_t applies to the whole length, e.g. for a length of 6 m the maximum deviation from straightness h_t is the value given in the table multiplied by 6 m).

For rectangular bars with thickness less than 6 mm, the straightness tolerances shall be agreed upon between supplier and purchaser.

The straightness tolerances apply to rectangular bars in all tempers except O and Tx51. If a straightness tolerance is required for either O or Tx51 temper, it shall be agreed between supplier and purchaser.



Key

1 base plate
2 straight edge

Figure 1 — Measurement of deviation from straightness

Table 6 — Straightness tolerances

Dimensions in millimetres

With W		Thickness t		Maximum deviation from straightness per metre length h_t/*length* mm/m	Maximum localized kink in any 300 mm portion h_s
Over	Up to and including	Over	Up to and including		
≥ 6	120	≥ 6	40	2	0,6
		40	60	3	1,0
120	200	≥ 6	40	3	1,0
		40	60	4	1,5

4.2 Convexity - Concavity

The convexity - concavity shall be measured as shown in Figure 2.

The tolerances are specified in Table 7.