



# SLOVENSKI STANDARD

## SIST EN 755-4:1998

01-april-1998

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### Aluminij in aluminijeve zlitine - Iztiskane palice/drogovi, cevi in profili - 4. del: Palice s kvadratnim prerezom, tolerance mer in oblike

Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 4: Square bars, tolerances on dimensions and form

Aluminium und Aluminiumlegierungen - Stranggepreßte Stangen, Rohre und Profile - Teil 4: Vierkantstangen, Grenzabmaße und Formtoleranzen

Aluminium et alliages d'aluminium - Barres, tubes et profilés filés - Partie 4: Barres carrées, tolérances sur dimensions et forme

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Ta slovenski standard je istoveten z: EN 755-4:1995

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#### **ICS:**

77.150.10      Aluminijski izdelki                      Aluminium products

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EUROPEAN STANDARD

EN 755-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 1995

ICS 77.120.10; 77.140.90

Descriptors: extruded products, rolled products, aluminium, aluminium alloys, metal bars, square bars, dimensions, dimensional tolerances, form tolerances

English version

**Aluminium and aluminium alloys - Extruded  
rod/bar, tube and profiles - Part 4: Square bars,  
tolerances on dimensions and form**

Aluminium et alliages d'aluminium - Barres,  
tubes et profilés filés - Partie 4: Barres  
carrées, tolérances sur dimensions et forme

Aluminium und Aluminiumlegierungen -  
Stranggeprägte Stangen, Rohre und Profile -  
Teil 4: Vierkantstangen, Grenzabmaße und  
Formtoleranzen

This European Standard was approved by CEN on 1995-05-14. 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.

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**CEN**

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

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

• 1995

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## Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 132 "Aluminium and aluminium alloys" of which the secretariat 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 December 1995, and conflicting national standards shall be withdrawn at the latest by December 1995.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 5 "Extruded and drawn products" to prepare the following standard :

**EN 755-4 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 4 : Square bars, tolerances on dimensions and form**

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

**EN 755-1 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 1 : Technical conditions for inspection and delivery**

**EN 755-2 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 2 : Mechanical properties**

**EN 755-3 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 3 : Round bars, tolerances on dimensions and form**

**EN 755-5 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 5 : Rectangular bars, tolerances on dimensions and form**

**EN 755-6 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 6 : Hexagonal bars, tolerances on dimensions and form**

**EN 755-7 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 7 : Seamless tubes, tolerances on dimensions and form**

**EN 755-8 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 8 : Porthole tubes, tolerances on dimensions and form**

**EN 755-9 Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 9 : Profiles, tolerances on dimensions and form.**

According to 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.

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## 1 Scope

This part of EN 755 specifies the tolerances on dimensions and form for aluminium and aluminium alloy extruded square bars having widths across flats from 10 mm up to 220mm.

## 2 Tolerances on dimensions and form

### 2.1 Width across flats

The tolerances on width across flats are specified in table 1.

For the purpose of this standard 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 7.

**Table 1: Width across flats tolerances**

Dimensions in millimetres			
Width across flats S		Tolerances	
over	up to	Alloy group I	Alloy group II
≥ 10	18	± 0,22	± 0,30
18	25	± 0,25	± 0,35
25	40	± 0,30	± 0,40
40	50	± 0,35	± 0,45
50	65	± 0,40	± 0,50
65	80	± 0,45	± 0,70
80	100	± 0,55	± 0,90
100	120	± 0,65	± 1,0
120	150	± 0,80	± 1,2
150	180	± 1,0	± 1,4
180	220	± 1,15	± 1,7

### 2.2 Corner radii

Maximum corner radii are specified in table 2.

**Table 2 : Maximum corner radii**

Dimensions in millimetres			
Width across flats S		Maximum corner radii	
over	up to	Alloy group I	Alloy group II
≥ 10	25	1,0	1,5
25	50	1,5	2,0
50	80	2,0	3,0
80	120	2,5	3,0
120	180	2,5	4,0
180	220	3,5	5,0

### 2.3 Squareness

The deviation from square shall be measured as shown in figure 1.

Squareness tolerances are specified in table 3.

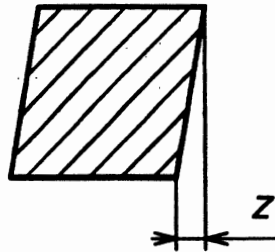


Figure 1 : Measurement of deviation from square

Table 3 : Squareness tolerances

Width across flats $S$		Dimensions in millimetres
over	up to	Maximum deviation from square $Z$
$\geq 10$	100	$0,01 \times \text{width}$
100	180	1,0
180	220	1,5

### 2.4 Convexity - Concavity

The convexity - concavity for square bars shall be included within the width across flats tolerances.

### 2.5 Straightness

Deviations from straightness,  $h_s$  and  $h_t$ , shall be measured as shown in figure 2 with the bar placed on a horizontal baseplate so that its mass decreases the deviation.

The straightness tolerances are specified in table 4.

The straightness tolerances apply to bars in all tempers except O and Tx510. If a straightness tolerance is required for either O or Tx510 temper, it shall be agreed between purchaser and supplier.

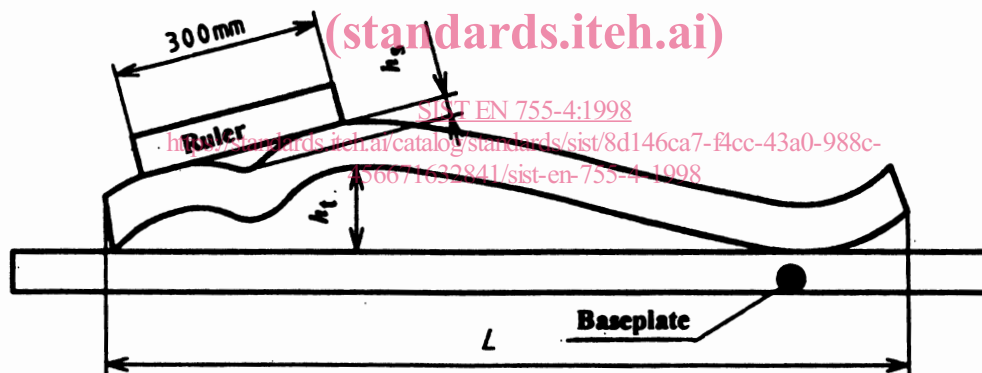


Figure 2 : Measurement of deviation from straightness

Table 4 : Straightness tolerances

Dimensions in millimetres

Width across flats $S$		Maximum deviation from straightness $h_t$ in mm/m	Maximum localised kink in any 300 mm portion $h_s$
over	up to		
$\geq 10$	80	2	0,8
80	120	2	1,0
120	220	3	1,5

2.6 Twist

The twist measurement shall be carried out as shown in figure 3.

The twist tolerances are specified in table 5.

The twist tolerances apply to bars in all tempers except O and Tx510. If a twist tolerance is required for either O or Tx510 temper, it shall be agreed between purchaser and supplier.

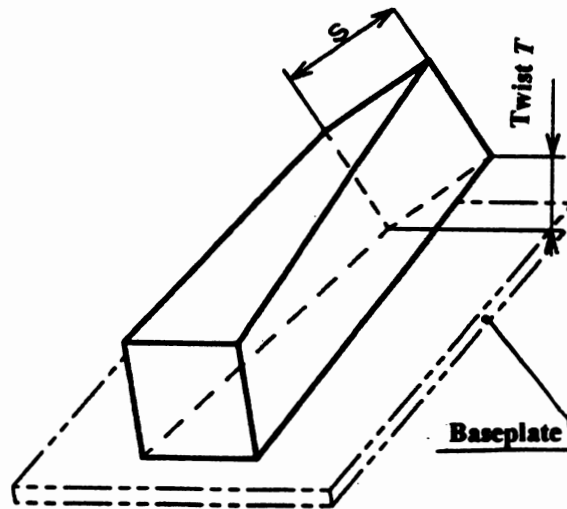


Figure 3 : Measurement of twist

Table 5 : Twist tolerances

Dimensions in millimetres

Width across flats $S$		Twist tolerances $T$	
over	up to	per 1 000 mm of length	over the total length
$\geq 10$	30	1,5	3
30	50	1,5	4
50	120	2	5
120	220	3	6



## 2.7 Length

If fixed lengths are to be supplied, this shall be stated on the order. The fixed length tolerances are specified in table 6.

**Table 6 : Fixed length tolerances**

Width across flats <i>S</i>		Tolerances on length		
over	up to	$L \leq 2000$	$2000 < L \leq 5000$	$L > 5000$
$\geq 10$	100	+ 5 0	+ 7 0	+ 10 0
100	200	+ 7 0	+ 9 0	+ 12 0
200	220	+ 8 0	+ 11 0	+ 14 0

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

## 2.8 Squareness of cut ends

The squareness of cut ends shall be within half of the fixed-length tolerance range (table 6) for both fixed and random lengths, e.g. for a fixed length tolerance of + 10 the squareness of cut ends shall be within 5 mm.

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