



# SLOVENSKI STANDARD

## SIST EN 754-8:2016

01-september-2016

Nadomešča:  
SIST EN 754-8:2008

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**Aluminij in aluminijeve zlitine - Hladno vlečene palice, drogovi in cevi - 8. del: Z večdelnimi matricami iztiskane cevi, tolerance mer in oblike**

Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 8: Porthole tubes, tolerances on dimensions and form

Aluminium und Aluminiumlegierungen - Gezogene Stangen und Rohre - Teil 8: Mit Kammerwerkzeug Stranggepresste Rohre, Grenzabmaße und Formtoleranzen

Aluminium et alliages d'aluminium - Barres et tubes étirés - Partie 8 : Tubes filés à pont, tolérances sur dimensions et forme

**Ta slovenski standard je istoveten z: EN 754-8:2016**

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**ICS:**

77.150.10      Aluminijski izdelki                      Aluminium products

**SIST EN 754-8:2016**                                      **en,fr,de**

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EUROPEAN STANDARD

**EN 754-8**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2016

ICS 77.150.10

Supersedes EN 754-8:2008

English Version

## Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 8: Porthole tubes, tolerances on dimensions and form

Aluminium et alliages d'aluminium - Barres et tubes  
étirés - Partie 8 : Tubes filés à pont, tolérances sur  
dimensions et forme

Aluminium und Aluminiumlegierungen - Gezogene  
Stangen und Rohre - Teil 8: Mit Kammerwerkzeug  
Stranggepresste Rohre, Grenzabmaße und  
Formtoleranzen

This European Standard was approved by CEN on 11 April 2016.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 754-8:2016) 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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

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

This document supersedes EN 754-8:2008.

The following technical modifications have been introduced during the revision:

- Subclause 3.2 Diameter - Round tube.

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.*

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

## 1 Scope

This European Standard specifies the tolerances on dimensions and form for aluminium and aluminium alloy cold drawn porthole tubes with an outside diameter (*OD*) from 3 mm to 350 mm (round tube, see Figure 1) or with a cross section contained within a circumscribing circle (*CD*) from 8 mm to 300 mm (other than round tube, see Figure 2), supplied in straight lengths.

This document only applies to cold drawn tube for general engineering applications made in the following alloys:

- EN AW-1050A, EN AW-1200;
- EN AW-3003, EN AW-3103;
- EN AW-5005, EN AW-5005A, EN AW-5049, EN AW-5251, EN AW-5052;
- 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;
- EN AW-7020.

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

This document only applies to tube produced by the porthole/bridge method of extrusion only (and then cold drawn to the final dimensions).

This document does not apply to:

- cold drawn tubes produced by the seamless, die/mandrel method (EN 754-7),
- tubes delivered in coils (EN 13958),
- coiled tubes cut to length (EN 13958).

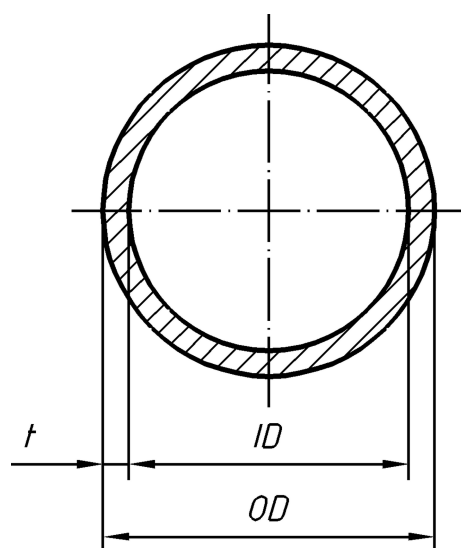


Figure 1 — Round tube

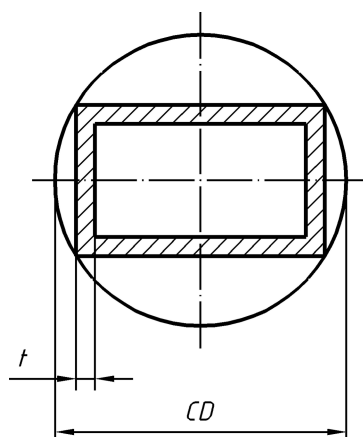


Figure 2 — Circumscribing circle for other than round tube

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 754-1:2016, *Aluminium and aluminium alloys — Cold drawn rod/bar and tube — Part 1: Technical conditions for inspection and delivery*

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## 3 Tolerances on dimensions

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### 3.1 General

When outside diameter  $OD$ , inside diameter  $ID$ , and wall thickness  $t$ , (or their equivalent dimensions in other than round tube) are all specified, standard tolerances shall apply to any two of these dimensions, but not to all three. As a result, the purchaser shall only state two nominal dimensions on any given order.

### 3.2 Diameter - Round tube

Mean diameter is defined as the average of two diameter measurements taken at right angles to each other at any position along the length.

The maximum allowable deviation at any point from the specified diameter is the maximum difference measured at any point along the length of the tube, i.e. it is inclusive of any ovality in the cross section.

The tolerances on diameter are specified in Table 1.

As detailed in EN 754-1:2016, Clause 4, if the original order does not make clear the nature of the diameter tolerances required, the supplier shall interpret them as inclusive of any ovality (i.e. maximum allowable deviation at any point from the specified diameter in Table 1). However, the diameter tolerances may be expressed as both mean and inclusive of ovality if this is specifically requested by the purchaser.

Table 1 — Tolerances on diameter for round tube

Dimensions in millimetres

Diameter ( <i>OD</i> or <i>ID</i> )		Tolerance on diameter			
		Maximum allowable deviation of mean diameter from specified diameter <sup>e</sup>	Maximum allowable deviation of diameter at any point from specified diameter <sup>a</sup>		
Over	Up to and including		Non-annealed and non heat treated tube <sup>b</sup>	Heat treated tube <sup>c</sup>	Tempers O, H111 and Tx510
≥ 3	8	±0,04 <sup>d</sup>	±0,08 <sup>d</sup>	±0,12 <sup>d</sup>	±0,25 <sup>d</sup>
8	18	±0,05	±0,09	±0,15	±0,30
18	30	±0,06	±0,10	±0,20	±0,40
30	50	±0,07	±0,12	±0,25	±0,50
50	80	±0,09	±0,15	±0,35	±0,70
80	120	±0,14	±0,20	±0,60	±1,2
120	200	±0,25	±0,40	±1,2	±2,4
200	350	±0,38	±0,60	±1,7	±3,4

<sup>a</sup> Not applicable to tubes having a wall thickness less than 2,5 % of the specified outside diameter. The tolerance for tubes with wall thickness less than 2,5 % of the specified outside diameter shall be determined by multiplying the applicable tolerance as follows:

- wall thickness over 2,0 % up to and including 2,5 % of outside diameter: 1,5 × tolerance;
- wall thickness over 1,5 % up to and including 2,0 % of outside diameter: 2,0 × tolerance;
- wall thickness over 1,0 % up to and including 1,5 % of outside diameter: 3,0 × tolerance;
- wall thickness over 0,5 % up to and including 1,0 % of outside diameter: 4,0 × tolerance.

<sup>b</sup> Applies to all alloys in H1x, H2x, H3x tempers, and to alloy EN AW-6063 in the T832 temper.

<sup>c</sup> Applies to all alloys in T3, T4, T6, T66, T73, T8, T9 and Tx511 tempers.

<sup>d</sup> This tolerance applies for outside diameter only, i.e. tube in this size range can only be specified as “Outside Diameter x Wall Thickness”.

<sup>e</sup> Shall not apply to Tx510 or Tx511 tempers.

### 3.3 Width, depth or width across flats - squares, rectangles, hexagons, octagons

The tolerances on width, depth or width across flats are specified in Table 2.



**Table 2 — Tolerances on width, depth or width across flats**

Dimensions in millimetres

Width, depth or width across flats		Maximum allowable deviation of width, depth or width across flats at any point from the specified value <sup>a</sup>		
Over	Up to and including	Non-annealed and non heat treated tube <sup>b</sup>	Heat treated tube <sup>c</sup>	Annealed tube <sup>d</sup>
≥ 8	18	±0,20	±0,30	±0,60
18	30	±0,25	±0,40	±0,80
30	50	±0,35	±0,50	±1,0
50	80	±0,50	±0,70	±1,4
80	120	±0,70	±1,0	±2,0
120	200	±1,0	±1,5	±3,0

<sup>a</sup> Not applicable to tubes having a wall thickness less than 2,5 % of the specified outside width, depth or width across flats. The tolerance for tubes with wall thickness less than 2,5 % of the specified width, depth or width across flats shall be determined by multiplying the applicable tolerance as follows:  
— wall thickness over 2,0 % up to and including 2,5 % of outside parameter: 1,5 × tolerance;  
— wall thickness over 1,5 % up to and including 2,0 % of outside parameter: 2,0 × tolerance;  
— wall thickness over 1,0 % up to and including 1,5 % of outside parameter: 3,0 × tolerance;  
— wall thickness over 0,5 % up to and including 1,0 % of outside parameter: 4,0 × tolerance.

<sup>b</sup> Applies to all alloys in F, H1x, H2x, H3x tempers.

<sup>c</sup> Applies to all alloys in T3, T4, T6, T66, T73, T8, T9 and Tx511 tempers.

<sup>d</sup> Applies to all alloys in O, H111 and Tx510 tempers.

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### 3.4 Wall thickness variation (eccentricity)

The tolerances on wall thickness variation (eccentricity) for round tubes are specified in Table 3. For other than round tubes the wall thickness variation tolerances shall be agreed between supplier and purchaser.