



**SLOVENSKI STANDARD**  
**SIST EN 754-7:1999**

**01-november-1999**

---

5`i a ]b]^[b`Ui a ]b]Yj Y`n`h]bY!`+`"XY.`<`UXbc`j`Y YbY`dU]WZ`Xfc[ c j ]]b`Wj ]`!  
BYj Uf`YbY`fbUfY`YbY`n`W`Y[ U`L`Wj ]z`cXg`h`c`d`\_]`a Yf`]b`h`c`Yf`Ub`W`c`V`\_

Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 7: Seamless tubes, tolerances on dimensions and form

Aluminium und Aluminiumlegierungen - Gezogene Stangen und Rohre - Teil 7: Nahtlose Rohre, GrenzabmaÙe und Formtoleranzen

Aluminium et alliages d'aluminium - Barres et tubes étirés - Partie 7: Tubes filés sur aiguille, tolérances sur dimensions et forme

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>

**Ta slovenski standard je istoveten z: EN 754-7:1998**

---

**ICS:**

77.150.10      Alumijski izdelki      Aluminium products

**SIST EN 754-7:1999**      en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 754-7:1999

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>

ICS 77.150.10

Descriptors: aluminium, aluminium alloys, drawn products, aluminium tubes, tolerances on dimension, tolerances on form

English version

## Aluminium and aluminium alloys - Cold drawn rod/bar and tube - Part 7: Seamless tubes, tolerances on dimensions and form

Aluminium et alliages d'aluminium - Barres et tubes étirés -  
Partie 7: Tubes filés sur aiguille, tolérances sur dimensions  
et forme

Aluminium und Aluminiumlegierungen - Gezogene Stangen  
und Rohre - Teil 7: Nahtlose Rohre, Grenzabmaße und  
Formtoleranzen

This European Standard was approved by CEN on 1 July 1998.

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.

This European Standard exists 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1998>



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

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

## Contents

<b>Foreword</b> .....	<b>3</b>
<b>1 Scope</b> .....	<b>4</b>
<b>2 Tolerances on dimensions</b> .....	<b>5</b>
2.1 General.....	5
2.2 Diameter - Round tube.....	5
2.3 Width, depth or width across flats - squares, rectangles, hexagons, octagons .....	6
2.4 Wall thickness.....	7
2.5 Length.....	8
2.6 Squareness of cut ends .....	8
<b>3 Tolerances on form</b> .....	<b>8</b>
3.1 General.....	8
3.2 Straightness.....	9
3.3 Convexity - Concavity .....	10
3.4 Twist .....	11
3.5 Angularity.....	12
3.6 Corner and fillet radii.....	13
3.7 Depth of dents for round tube .....	13

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 754-7:1999](#)

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>



## Foreword

This European Standard 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 January 1999, and conflicting national standards shall be withdrawn at the latest by January 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom

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 754-7            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 7 : Seamless tubes, tolerances on dimensions and form

This standard is part of a series of eight standards. The other standards deal with :

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

EN 754-2            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 2 : Mechanical properties

EN 754-3            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 3 : Round bars, tolerances on dimensions and form

EN 754-4            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 4 : Square bars, tolerances on dimensions and form

EN 754-5            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 5 : Rectangular bars, tolerances on dimensions and form

EN 754-6            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 6 : Hexagonal bars, tolerances on dimensions and form

EN 754-8            Aluminium and aluminium alloys - Cold drawn rod/bar and tube -  
Part 8 : Porthole tubes, tolerances on dimensions and form

## 1 Scope

This part of EN 754 specifies the tolerances on dimensions and form for aluminium and aluminium alloy cold drawn seamless 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 standard only applies to tube produced by the seamless die/mandrel method of extrusion (and then cold drawn to the final dimensions required).

This standard applies to cold drawn, seamless tube for general engineering applications.

This standard does not apply to extruded, cold drawn tube produced by the porthole/bridge method or to coiled tube.

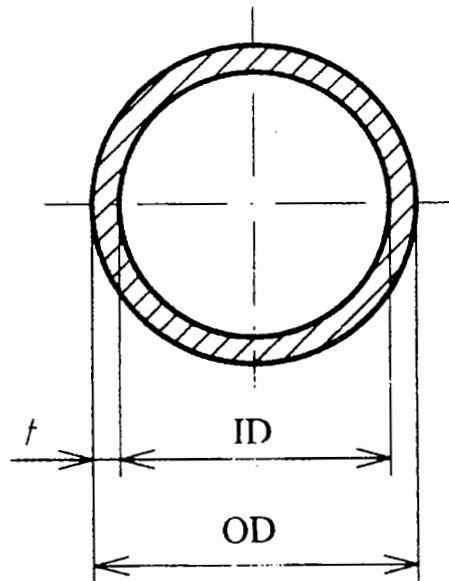


Figure 1 : Round tube

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

SIST EN 754-7:1999

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>

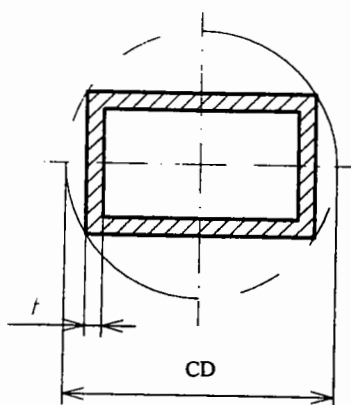


Figure 2 : Circumscribing circle for other than round tube

## 2 Tolerances on dimensions

### 2.1 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.

### 2.2 Diameter - Round tube

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

The tolerances on diameter are specified in table 1.

SIST EN 754-7:1999

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>

**Table 1 : Tolerances on diameter for round tube**

Dimensions in millimetres

Diameter (OD or ID)		Tolerance on diameter			
		Maximum allowable deviation of mean diameter from specified diameter <sup>6)</sup>	Maximum allowable deviation of diameter at any point from specified diameter <sup>1)</sup>		
Over	Up to and including		non-annealed and non heat treated tube <sup>2)</sup>	heat treated tube <sup>3)</sup>	annealed tube <sup>4)</sup>
≥ 3	8	± 0,04 <sup>5)</sup>	± 0,08 <sup>5)</sup>	± 0,12 <sup>5)</sup>	± 0,25 <sup>5)</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	± 0,36	± 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

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

2) Applies to all alloys in F, H1x, H2x, H3x tempers, and to alloy EN AW-6063 in the T832 temper.

3) Applies to all alloys in T3, T4, T6, T66, T73, T8, T9 and Tx511 tempers.

4) Applies to all alloys in O, H111 and Tx510 tempers.

5) This tolerance applies for outside diameter only, i.e. tube in this size range can only be specified as "Outside Diameter x Wall Thickness".

6) Shall not apply to Tx510 or Tx511 tempers.

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

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

SIST EN 754-7:1999

<https://standards.iteh.ai/catalog/standards/sist/65224456-c5ea-4e67-94d0-3b23d2855056/sist-en-754-7-1999>



**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>1)</sup>		
Over	Up to and including	non-annealed and non heat treated tube <sup>2)</sup>	heat treated tube <sup>3)</sup>	annealed tube <sup>4)</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

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

2) Applies to all alloys in F, H1x, H2x, H3x tempers.

3) Applies to all alloys in T3, T4, T6, T66, T73, T8, T9 and Tx511 tempers.

4) Applies to all alloys in O, H111 and Tx510 tempers.

## 2.4 Wall thickness

The tolerances on wall thickness are specified in table 3.

**Table 3 : Tolerances on wall thickness**

Wall thickness <i>t</i> mm		Maximum allowable deviation of wall thickness at any point from the specified value %	
Over	Up to and including	Round tube	Other than round tube
≥ 0,5	2	± 10	± 12
2	3	± 9	± 11
3	-	± 8	± 10