



SLOVENSKI STANDARD

SIST EN 754-7:2008

01-maj-2008

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SIST EN 754-7:1999

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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, Grenzabmaße und Formtoleranzen

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

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Ta slovenski standard je istoveten z: **EN 754-7:2008**

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English Version

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

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et forme

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

This European Standard was approved by CEN on 10 February 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 754-7:2008) 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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.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 754-7:1998.

Within its programme of work, Technical committee CEN/TC 132 entrusted CEN/TC 132/WG 5 "*Extruded and drawn products*" to revise EN 754-7:1998.

The following technical modifications have been introduced during the revision:

- Clause 1: Scope is clarified with respect to what is not included
- Subclause 2.4 and Table 3: Requirements to wall thickness variation (eccentricity) is introduced
- Annex A: Informative Annex A is added explaining wall thickness variation (eccentricity)

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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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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This document specifies the tolerances on dimensions and form for aluminium and aluminium alloys 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).

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

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

This document does not apply to:

- cold drawn tube produced by the porthole/bridge method (EN 754-8),
- tubes delivered in coils (EN 13958),
- coiled tubes cut to length (EN 13958).

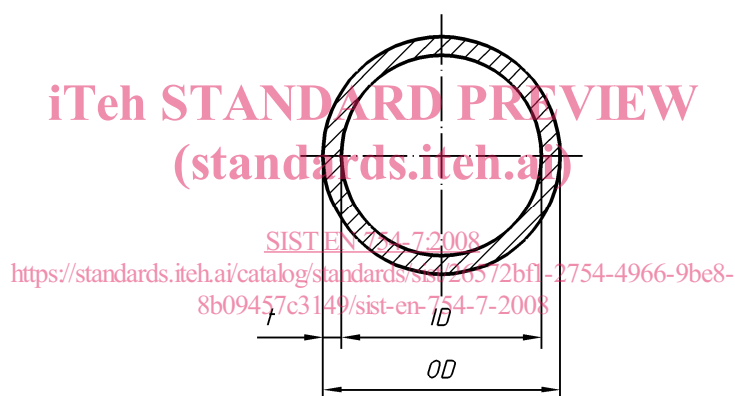


Figure 1 — Round tube

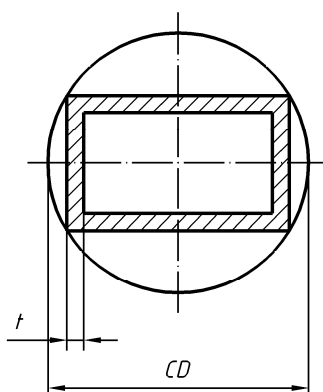


Figure 2 — Circumscribing circle for other than round tube

2 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 position along the length.

The tolerances on diameter are specified in Table 1.

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 ^e	Maximum allowable deviation of diameter at any point from specified diameter ^a		
Over	Up to and including		Non-annealed and non heat treated tube ^b	Heat treated tube ^c	Temper O, H111 and Tx510
≥ 3	8	± 0,04 ^d	± 0,08 ^d	± 0,12 ^d	± 0,25 ^d
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

^a 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.

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

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

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

^e 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.

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 ^a		
Over	Up to and including	Non-annealed and non heat treated tube ^b	Heat treated tube ^c	Annealed tube ^d
≥ 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

^a 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.

^b Applies to all alloys in F, H1x, H2x, H3x tempers.

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

^d Applies to all alloys in O, H111 and Tx510 tempers.

2.4 Wall thickness variation (eccentricity)

The tolerances on wall thickness variation (eccentricity) are specified in Table 3.