

Aluminium and aluminium alloys — Cold drawn rod/bar and tube —

Part 3: Round bars, tolerances on dimensions and form

ICS 77.150.10

National foreword

This British Standard is the UK implementation of EN 754-3:2008. It supersedes BS EN 754-3:1996 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NFE/35, Light metals and their alloys.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

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Partie 3: Barres rondes, tolérances sur dimensions et
forme

Aluminium und Aluminiumlegierungen - Gezogene Stangen
und Rohre - Teil 3: Rundstangen, Grenzabmaße und
Formtoleranzen

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Foreword

This document (EN 754-3:2008) 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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.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 754-3:1995.

Within its programme of work, Technical committee CEN/TC 132 entrusted CEN/TC 132/WG 5 "*Extruded and drawn products*" to revise EN 754-3:1995.

The following technical modifications have been introduced during the revision:

- Only editorial changes to bring this part in line with the other parts of EN 754

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 round bars having diameters in the range from 3 mm up to and including 100 mm.

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

2 Tolerances on dimensions

2.1 Diameter

The tolerances on diameter are specified in Table 1.

Table 1 — Diameter tolerances

Diameter D		Tolerances
Over	Up to and including	
≥ 3	6	0 -0,08
6	10	0 -0,09
10	18	0 -0,11
18	30	0 -0,13
30	50	0 -0,16
50	65	0 -0,19
65	80	0 -0,30
80	100	0 -0,35

2.2 Length

If fixed lengths are to be supplied, this shall be stated in the order document. The fixed length tolerances are specified in Table 2.

Table 2 — Fixed length tolerances

Dimensions in millimetres

Diameter D		Tolerances on fixed length		
From	Up to and including	$L \leq 2\,000$	$2\,000 < L \leq 5\,000$	$L > 5\,000$
3	100	+5 0	+7 0	+10 0

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

2.3 Squareness of cut ends

The squareness of cut ends shall be within half of the fixed length tolerance range (Table 2) 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).

3 Tolerances on form

3.1 Ovality

Ovality is the difference between the maximum and minimum diameters measured in one cross-section.

The maximum permissible ovality is 50 % of the tolerance range specified in Table 1, (e.g. for a diameter tolerance of ${}^0_{-0,08}$ mm the maximum permissible ovality is 0,04 mm).

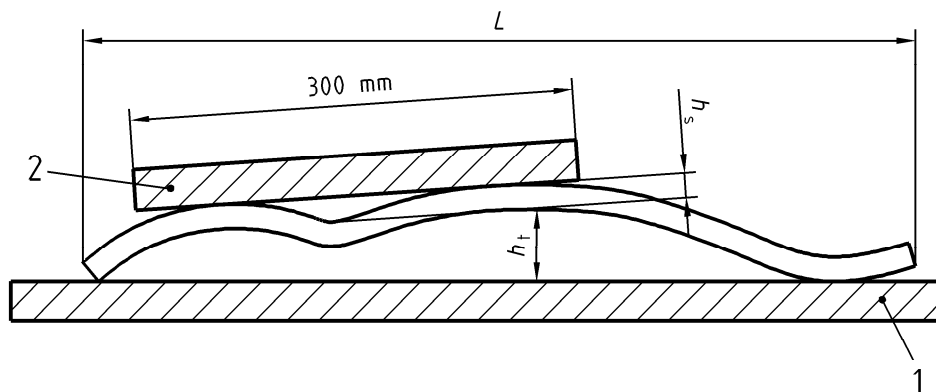
3.2 Straightness

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

The straightness tolerances are specified in Table 3. (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 round bars with diameter less than 10 mm, the straightness tolerances shall be agreed upon between supplier and purchaser.

The straightness tolerances apply to round bars with a diameter greater than 10 mm 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 3 — Straightness tolerances

Dimensions in millimetres

Diameter D		Maximum deviation from straightness per metre length $h_t/length$ mm/m	Maximum localized kink in any 300 mm portion H_s
From	Up to and including		
10	100	2	0,6

Bibliography

- [1] EN 515, *Aluminium and aluminium alloys — Wrought products — Temper designations*

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