
International Standard



7273

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Wrought aluminium and aluminium alloys — Extruded round bars — Tolerances on shape and dimensions

Aluminium et alliages d'aluminium corroyés — Barres rondes filées — Tolérances sur forme et dimensions

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7273 was developed by Technical Committee ISO/TC 79, *Light metals and their alloys*, and was circulated to the member bodies in August 1980.

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It has been approved by the member bodies of the following countries :

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The member bodies of the following countries expressed disapproval of the document on technical grounds :

Australia
Germany, F. R.

Wrought aluminium and aluminium alloys – Extruded round bars – Tolerances on shape and dimensions

1 Scope and field of application

This International Standard specifies tolerances on shape and dimensions for wrought aluminium and aluminium alloy extruded round bars having diameters in the range from 10 up to and including 200 mm.

2 Tolerances on shape and dimensions

2.1 Diameter

See table 1.

Table 1

Dimensions in millimetres

Diameter		Limits of deviation	
over	up to and including	Material group 1*	Material group 2*
10	18	± 0,22	± 0,35
18	25	± 0,25	± 0,40
25	40	± 0,30	± 0,45
40	50	± 0,35	± 0,55
50	65	± 0,40	± 0,60
65	80	± 0,50	± 0,75
80	100	± 0,60	± 0,90
100	120	± 0,70	± 1,1
120	150	± 0,85	± 1,3
150	180	± 1,0	± 1,5
180	200	± 1,1	± 1,7

* See clause 3.

2.2 Circularity

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

The permissible circularity is included in the tolerance on diameter specified in table 1.

2.3 Straightness

The straightness tolerances apply to bars having diameters in the range from 10 up to and including 200 mm, in all tempers except tempers O and M.

Deviations from straightness shall be measured with the bar placed on a horizontal plate so that its mass decreases the deviation.

The permissible deviation from straightness in the total length, or in any 300 mm or longer section of the total length, shall be 3 mm per metre.

2.4 Fixed lengths

See table 2.

Fixed lengths shall be agreed between supplier and purchaser.

The tolerances on fixed lengths, given in table 2, apply to diameters from 10 up to and including 200 mm.

Table 2

Dimensions in millimetres

Diameter	Tolerances on fixed lengths over			
	up to and including			
	2 000	5 000	10 000	15 000
from 10 up to and including 200	+ 6	+ 9	+ 14	+ 18

3 Material groups

3.1 Material group 1 comprises aluminium and aluminium alloys with the following designations :

Al 99,8 (1080)	AlMn1 (3103)	AlMg _{2,5} (5052)
Al 99,7 (1070)	AlMn1Cu (3003)	AlSi1MgMn (6082)
Al 99,5 (1050)	AlMg1 (5005)	AlMgSi (6060)
Al 99,0 (1200)	AlMg _{1,5} (5050)	AlMg1SiCu (6061)
Al 99,0Cu (1100)	AlMg ₂ (5251)	AlZn _{4,5} Mg ₁ (7020)

3.2 Material group 2 comprises aluminium alloys with the following designations :

AlMg ₃ [†] (5754)	AlCuMg ₂ [†] (2117)
AlMg ₃ Mn [†] (5454)	AlCu ₄ MgSi [†] (2017)
AlMg _{3,5} [†] (5154)	AlCu ₄ Mg ₁ [†] (2024)
AlMg ₄ (5086)	AlCu ₄ SiMg [†] (2014)
AlMg _{4,5} Mn (5083)	AlZn ₆ MgCu [†] (7075)
AlMg ₅ (5056)	

† For certain applications, these alloys may be available with the tolerances of material group 1.