International Standard ISO 7773

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Magnesium alloys — Round bars and tubes — Dimensional tolerances

Alliages de magnésium — Barres et tubes de section circulaire — Tolérances dimensionnelles

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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 7773 was developed by Technical Committee ISO/TC 79, *Light metals and their alloys*, and was circulated to the member bodies in May 1982.

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

Austria	Hungary	South Africa, Rep. of
Canada	Iraq	Spain
China	Italy	Sweden
Egypt, Arab Rep. of	Korea, Rep. of	United Kingdom
France	Norway	USSR
Germany, F.R.	Romania	

No member body expressed disapproval of the document.

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Magnesium alloys — Round bars and tubes — Dimensional tolerances

1 Scope and field of application

This International Standard specifies dimensional tolerances for round bars and tubes made from magnesium alloys.

The products may be manufactured from any wrought magnesium alloys, especially the magnesium-aluminium-zinc alloys and the magnesium-zirconium-zinc alloys specified in ISO 3116[1].

2 Manufacturing method and delivery condition

The products covered by this International Standard are obtained by extrusion, followed by straightening where necessary, without any thermal treatment.

For bars of diameter less than 50 mm, a further sizing operation at room temperature may be carried out, in order to obtain closer dimensional tolerances.

3 Dimensional tolerances

3.1 Bars

3.1.1 Diameter

See table 1.

Table 1

Values in millimetres

Specified diameter	Tolerance	
	Extruded and straightened bars	Extruded and sized bars
4 to 10	+ 0,5 0	0 − 0,09
10,1 to 16	+ 0,6 0	0 − 0,11
16,1 to 30	+ 0,7 0	0 − 0,13
30,1 to 50	+ 0,9 0	0 − 0,16
51 to 80	+ 1,2 0	
81 to 120	+ 1,6 0	

1) ISO 3116, *Wrought magnesium alloys — Chemical composition and mechanical properties.*

3.1.2 Length

See table 2.

Table 2

Values in millimetres

Diameter	< 50	> 50
Random lengths	2 000 to 6 000	To be agreed between the purchaser and the supplier
Fixed lengths < 6 000	Tolerance $^{+10}_{0}$	
Fixed lengths > 6 000	Limits to be agreed between the purchaser and the supplier	

3.1.3 Straightness

The maximum deviation shall be 0,2 % of the length of wave-undulation.

3.2 Tubes

3.2.1 Outside diamater

See table 3.

Table 3

Values in millimetres

Nominal outside diameter	Tolerance	
	on mean diameter	on specified diameter
10 to 30	± 0,25	± 0,50
> 30 to 50	± 0,35	± 0,60
> 50 to 80	± 0,45	± 0,80
> 80 to 120	± 0,65	± 1,20

NOTES

1 The circularity tolerances (difference between maximum outside diameter and minimum outside diameter in a given section) are included in the tolerances for specified diameter.

2 The mean diameter is the average of two diameters measured at 90° to each other in the same section at any point along the length.

3.2.2 Wall thickness

See table 4.

Table 4

Nominal wall thickness mm	Tolerance % of nominal thickness	
	on mean thickness	on actual thickness
1 to 2 inclusive	± 10	± 13
2 to 3 inclusive	± 8	± 11
> 3	± 7	± 10

NOTES

1 The eccentricity tolerances (difference between maximum wall thickness and minimum wall thickness in a given section) are included in the tolerances for specified wall thickness.

2 The mean thickness is the average of the results of any two diametrically opposed thickness measurements.

3.2.3 Length

See table 5.

Table 5

Values in millimetres

Outside diameter, D	$D < 50$	$50 < D < 80$	$80 < D < 120$
Random lengths	2 000 to 6 000	2 000 to 6 000	To be agreed between the purchaser and the supplier
Fixed lengths < 6 000	Tolerance $^{+\ 10}_{\ 0}$	Tolerance $^{+\ 15}_{\ 0}$	
Fixed lengths > 6 000	Limits to be agreed between the purchaser and the supplier		

3.2.4 Straightness

The maximum deviation shall be 0,2 % of the length of wave-undulation.

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