

INTERNATIONAL STANDARD

ISO
6363-5

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Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes —

Part 5:

**Drawn square and hexagonal bars — Tolerances
on form and dimensions**

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*Barres et tubes étirés à froid en aluminium et alliages d'aluminium
corroyés*

*Partie 5: Barres carrées et hexagonales étirées — Tolérances sur forme
et dimensions*



Reference number
ISO 6363-5:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6363-5 was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Sub-Committee SC 6, *Wrought aluminium and aluminium alloys*.

ISO 6363-5:1992

ISO 6363 consists of the following parts, under the general title *Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes*:

- Part 1: *Technical conditions for inspection and delivery*
- Part 2: *Mechanical properties*
- Part 4: *Drawn rectangular bars — Tolerances on form and dimensions*
- Part 5: *Drawn square and hexagonal bars — Tolerances on form and dimensions*
- Part 6: *Drawn tubes — Tolerances on form and dimensions*

NOTE — Part 3: *Drawn round bars — Tolerances on form and dimensions* will be published later. It is at present published as ISO 5193:1981 and ISO 7274:1981.

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Wrought aluminium and aluminium alloy cold-drawn rods/bars and tubes —

Part 5:

Drawn square and hexagonal bars — Tolerances on form and dimensions

1 Scope

This part of ISO 6363 specifies the tolerances on form and dimensions of wrought aluminium and aluminium alloy drawn square and hexagonal bars with widths across flats up to and including 80 mm.

2 Tolerances on form and dimensions

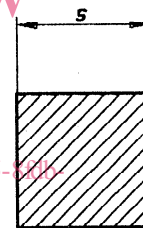
2.1 Tolerances on width across flats

The tolerances on width across flats (see figure 1) shall be in accordance with table 1. These tolerances are all minus tolerances.

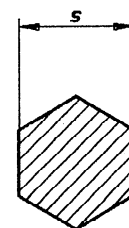
Table 1 — Tolerances on width across flats

Values in millimetres

Width across flats, s	Maximum allowable deviation
$s \leq 3$	0 -0,06
$3 < s \leq 6$	0 -0,08
$6 < s \leq 10$	0 -0,09
$10 < s \leq 18$	0 -0,11
$18 < s \leq 30$	0 -0,13
$30 < s \leq 50$	0 -0,16
$50 < s \leq 65$	0 -0,20
$65 < s \leq 80$	0 -0,30



a) Square bar



b) Hexagonal bar

Figure 1 — Widths across flats

2.2 Fixed-length tolerances

If fixed-length bars are ordered, their length tolerances shall be in accordance with table 2.

The squareness of a cut shall be within the fixed-length tolerance.

Table 2 — Fixed-length tolerances

Values in millimetres

Width across flats, s	Tolerances on fixed lengths				over 5 000
	up to and including 250	over 250 up to and including 1 000	over 1 000 up to and including 2 000	over 2 000 up to and including 5 000	
$s \leq 30$	+1 0	+2 0	+3 0	+5 0	By agreement
$30 < s \leq 50$	+2 0	+3 0	+4 0	+6 0	
$50 < s \leq 80$	+2,5 0	+4 0	+5 0	+7 0	

2.3 Corner radii

The corners of the bars shall be slightly rounded, but the corner radii shall not exceed the values specified in table 3.

Table 3 — Maximum corner radii

Dimensions in millimetres

Width across flats, s	Maximum corner radii
$s \leq 10$	0,4
$10 < s \leq 40$	0,8
$40 < s \leq 80$	1,2

2.4.1 Straightness tolerances

The maximum allowable straightness tolerance, h_1 , for the total length l_1 shall be 2 mm per 1 000 mm of length (see figure 2). In addition, h_2 shall not exceed 0,6 mm for each section of 300 mm length (l_2).

2.4.2 Twist tolerances

The maximum allowable twist tolerances shall be in accordance with table 4.

The twist shall be measured as shown in figure 3.

Table 4 — Twist tolerances

Values in millimetres

Width across flats, s	Twist tolerance, v			By agreement
	per 1 000 mm of length	over the total length up to and including 5 000	over 5 000	
$s \leq 50$	1,5	3	By agreement	
$50 < s \leq 80$	2	5		

2.4 Form tolerances

The maximum tolerance values specified in 2.4.1 and 2.4.2 apply to all tempers, except the O tempers.

Form tolerances are measured by placing the bar on a horizontal plate under its own weight as shown in figures 2 and 3.

Dimensions in millimetres

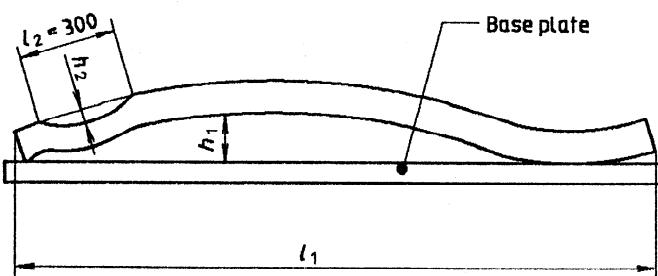


Figure 2 — Measurement of deviation from straightness

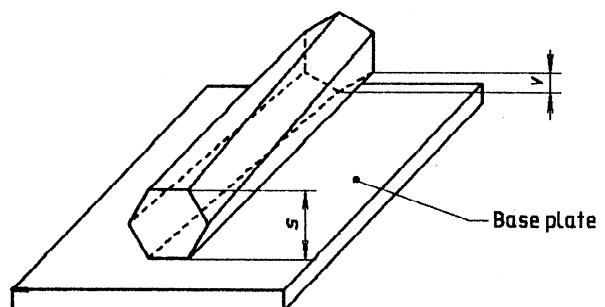


Figure 3 — Measurement of twist

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