
INTERNATIONAL STANDARD



657 / V

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**Hot-rolled steel sections —
Part V : Equal-leg angles and unequal-leg angles — Tolerances
for metric and inch series**

Profilés laminés à chaud —

Partie V : Cornières à ailes égales et à ailes inégales — Tolérances pour les séries métrique et inch

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

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 657/V was drawn up by Technical Committee ISO/TC 17, *Steel*, and was circulated to the Member Bodies in March 1975.

It has been approved by the Member Bodies of the following countries :

Austria	Hungary	Portugal
Brazil	India	Romania
Bulgaria	Iran	South Africa, Rep. of
Chile	Ireland	Spain
Czechoslovakia	Italy	Sweden
Denmark	Mexico	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
Finland	New Zealand	United Kingdom
France	Norway	U.S.S.R.
Germany	Poland	Yugoslavia

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Austria	Canada	U.S.A.
Belgium	Japan	

Hot-rolled steel sections — Part V : Equal-leg angles and unequal-leg angles — Tolerances for metric and inch series

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies metric and inch dimensional tolerances applicable to hot-rolled steel angles having either equal or unequal leg lengths in accordance with the metric dimensions of ISO/R 657/I and ISO/R 657/II or the inch dimensions of ISO/R 657/III and ISO/R 657/IV.

2 LEG LENGTH TOLERANCE

Tolerances on leg length shall be as specified in table 1.

3 THICKNESS TOLERANCE

Tolerances on thickness of equal- and unequal-leg angles shall be as specified in table 2.

4 CUTTING TOLERANCE FOR LENGTH

Normal and fine tolerances for lengths of angles having equal or unequal legs shall be as specified in tables 3 and 4, respectively.

5 STRAIGHTNESS

5.1 The maximum permissible camber for equal- and unequal-leg angles shall be as specified in table 5.

5.2 The camber shall be measured as shown in figure 1.

6 OUT-OF-SQUARE

6.1 The legs shall be perpendicular to each other within a maximum deviation at the end as specified in table 6.

6.2 The deviation shall be measured at the end of the leg (see figure 2).

7 TOLERANCE ON MASS

Where tolerance on mass per unit length is to be specified as an overall controlling tolerance, such provision should be included in the appropriate national standard.

TABLE 1 – Length tolerance

Metric series			Inch series		
Leg length ¹⁾		Tolerance	Leg length ¹⁾		Tolerance
over	up to and including		over	up to and including	
mm	mm	mm	in	in	in
–	50	± 1,0	–	2	± 0.04
50	100	± 1,5	2	4	± 0.06
100	150	± 2,0	4	6	± 0.08
150	200	± 3,0	6	8	± 0.12

1) For unequal-leg angles take the longer leg length as the reference.

TABLE 2 – Thickness tolerance

Metric series			Inch series		
Leg length ¹⁾		Tolerance	Leg length ¹⁾		Tolerance
over	up to and including		over	up to and including	
mm	mm	mm	in	in	in
–	50	± 0,5	–	2	± 0.02
50	100	± 0,8	2	4	± 0.03
100	150	± 1,0	4	6	+ 0.04
150	200	± 1,2	6	8	± 0.05

1) For unequal-leg angles take the longer leg length as the reference.

NOTE – For angles having a leg length exceeding 75 mm (3 in), a tolerance on mass of ± 2,5 % of the mass per unit length may be specified in lieu of thickness tolerance. The masses per unit length of angles are given in the relevant parts of ISO/R 657 (see clause 1).

TABLE 3 – Normal cutting tolerance on length

Metric series		Inch series	
Length	Tolerance	Length	Tolerance
All lengths	± 100 mm	All lengths	± 4 in

TABLE 4 – Fine cutting tolerance on length

Metric series			Inch series		
Length		Tolerance	Length		Tolerance
over	up to and including		over	up to and including	
m	m	mm	ft	ft	in
–	12	+ 75 0	–	40	+ 3 0
12	–	+ 100 0	40	–	+ 4 0

TABLE 5 – Camber

Metric series			Inch series		
Leg length ¹⁾		Straightness tolerance	Leg length ¹⁾		Straightness tolerance
over	up to and including		over	up to and including	
mm	mm		in	in	
50	150	0,4 % of length	2	6	0,4 % of length
150	200	0,25 % of length	6	8	0,25 % of length

1) For unequal-leg angles take the longer leg length as the reference.

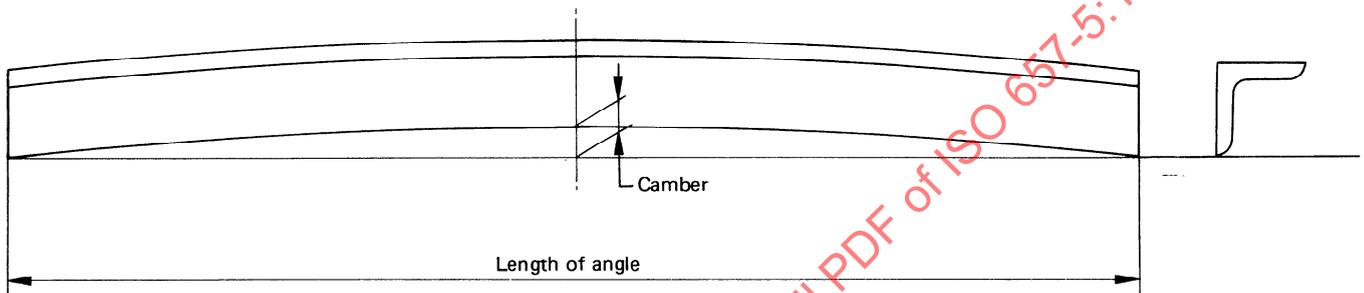


FIGURE 1 – Measurement of camber

TABLE 6 – Out-of-square

Metric series			Inch series		
Leg length ¹⁾		Deviation max. mm	Leg length ¹⁾		Deviation max. in
over	up to and including		over	up to and including	
mm	mm		in	in	
—	50	1,0	—	2	0.04
50	100	2,0	2	4	0.08
100	200	3,0	4	8	0.12

1) For unequal-leg angles take the longer leg length as the reference.



FIGURE 2 – Measurement of deviation

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