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Indian Standard

SPECIFICATION FOR ROLLING AND CUTTING TOLERANCES FOR HOT-ROLLED STEEL PRODUCTS

(*Fourth Revision*)

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Indian Standard

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Indian Standard

SPECIFICATION FOR ROLLING AND CUTTING TOLERANCES FOR HOT-ROLLED STEEL PRODUCTS

(Fourth Revision)

0. FOREWORD

0.1 This Indian Standard (Fourth Revision) was adopted by the Indian Standards Institution on 20 December 1985, after the draft finalized by the Structural Sections Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard, first published in 1962 was revised in 1967, 1973 and 1979. As a result of the experience gained during these years it has been decided to revise this standard again. The main modifications made in this revision are:

a) Scope has been modified to cover the types of hot rolled products. Specific standards which refer to IS : 1852 for rolling and cutting tolerances are given in Appendix A for information only.

b) Rolling and cutting tolerances for strips and sheets have been extended to additional widths and range of thicknesses for tolerances have been rationalized.

0.3 This standard keeps in view the manufacturing and trade practices in the country in this field. Assistance has also been derived from the following ISO Standards :

a) ISO 657/V Hot-rolled steel sections — Part V Equal leg angles and unequal leg angles — Tolerances for metric and inch series.

b) ISO 1035/IV Hot-rolled steel bars — Part IV Tolerances of round, square and flat bars — Metric series.

c) ISO 657/13 Tolerances on sloping flange beam, column and channel sections.

d) ISO 4995-1978 Hot rolled steel sheet for structural quality.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down rolling and cutting tolerances for hot-rolled structural steel beams, channels, equal and unequal-leg angles, tee bars, bulb angles, round and square bars (other than bars meant for fasteners), flats, plates, strips and sheets rolled from structural steels including medium and high strength steels.

1.1.1 A list of Indian Standards covering material and dimensions of various hot-rolled sections is given in Appendix A for information.

1.2 This standard does not cover dimensional tolerances for carbon and alloy constructional steel products which are covered by IS : 3739-1972†.

1.3 For any specific end uses, such as shipbuilding, machine components, pressure vessels, etc, special tolerances finer than those specified in this standard, reference shall be made to the appropriate Indian Standard if available or otherwise these shall be as agreed to between the purchaser and the supplier.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in the appropriate Indian Standards on rolled steel products and those given in the relevant parts of IS : 1956-1976‡ shall apply.

3. CALCULATION OF NOMINAL WEIGHT

3.1 The nominal weight of hot-rolled steel products shall be calculated on the basis that steel weighs 7·85 g/cm^3.

*Rules for rounding off numerical values (*revised*).
†Dimensional tolerances for carbon and alloy constructional test products.
‡Glossary of terms relating to iron and steel.

4. ROLLING TOLERANCE FOR STRUCTURAL STEEL SECTIONS

4.1 Beams and Columns

4.1.1 *Depth* — The tolerance on depth of beams shall be as follows:

Depth		*Tolerance*
Over	Up to and including	
mm	mm	mm
—	200	+ 3·0 − 2·0
200	400	± 3·0
400	600	± 4·0

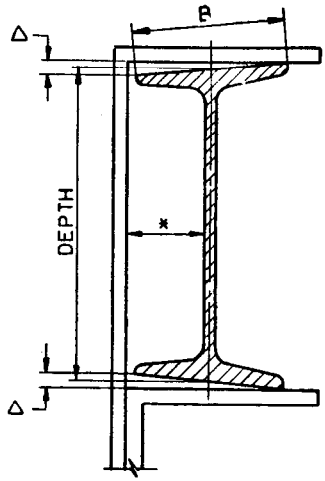
NOTE — Tolerances specified above for depth of up to and including 200 mm will remain in force for a period of 4 years from the date of publication of this standard. At the end of this period the above provision shall stand amended as ± 2·0 mm.

4.1.2 *Width of Flange* — The tolerance on flange width shall be as follows:

Width of Flange		*Tolerance*
Over	Up to and including	
mm	mm	mm
—	100	± 2·0
100	125	± 2·5
125	250	± 4·0

4.1.3 *Flanges Out-of-Square or Out-of-Parallel* — The flanges shall be parallel within the following tolerances (*see* Fig. 1).

Width of Flange, B		$\Delta + \Delta'$
Over	Up to and including	(*Max*)
mm	mm	
—	100	3·0 mm
100	250	3 percent of flange width



*Back of square and centreline of web to be parallel when measuring 'out-of-square'.

FIG. 1 OUT-OF-SQUARE OF FLANGE

4.1.4 *Off-centre of Web* — The off-centre of the web shall be within the following limits (*see* Fig. 2).

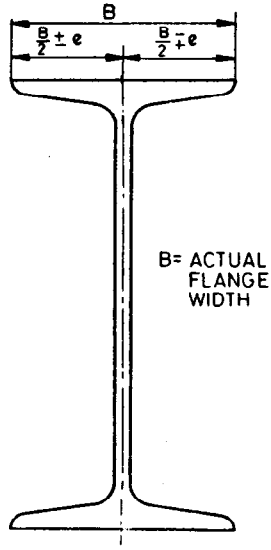


FIG. 2 OFF-CENTRE WEB

Depth of Section		*Off-Centre of Web*, e_{Max}
Over	Up to and including	
mm	mm	mm
—	300	3·0
300	450	4·0
450	600	5·0

4.1.5 *Weight* — The tolerance on weight per metre shall be ± 2·5 percent (or ± 4 percent for steel conforming to Fe 310-0 of IS : 1977-1975*) of the weight per metre specified in Table 1 of IS : 808-1964†, Table 1 of IS : 808 (Part 1)-1973‡ and Table 1 of IS : 808 (Part 2)-1978§.

4.1.6 *Camber and Sweep* — The permissible limits for camber and sweep shall be 0·2 percent of the length (*see* Fig. 3).

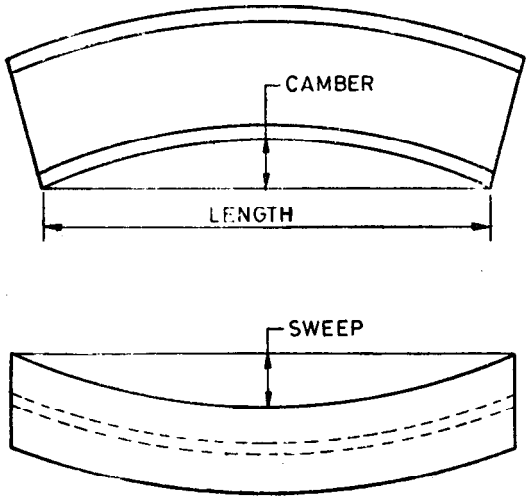


FIG. 3 MEASUREMENT OF CAMBER AND SWEEP

*Specification for structural steel (ordinary quality) (*second revision*).
†Specification for rolled steel beam, channel and angle sections (*revised*).
‡Dimensions for hot-rolled steel sections: Part 1 MB series (Beams) (*second revision*).
§Dimensions for hot-rolled steel sections: Part 2 Columns — SC series (*second revision*).

4.2 Channels

4.2.1 *Depth* — The tolerance on depth of channels shall be as follows:

Depth		*Tolerance*
Over	Up to and including	
mm	mm	mm
—	200	± 2·5
200	400	± 3·0

4.2.2 *Width of Flange* — The tolerance on flange width up to and including 100 mm shall be ± 2 mm.

4.2.3 *Flanges Out-of-Square or Out-of-Parallel* — The flanges shall be parallel within 1 in 60 tolerances (*see* Fig. 4).

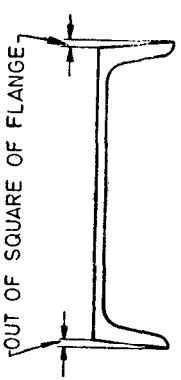


FIG. 4 FLANGES OUT-OF-SQUARE OR OUT-OF-PARALLEL

4.2.4 *Flatness of Web* — The tolerance on flatness of outer face of web shall be as follows (*see* Fig. 5):

Convexity	Not permitted
Concavity	15 percent of nominal thickness of web

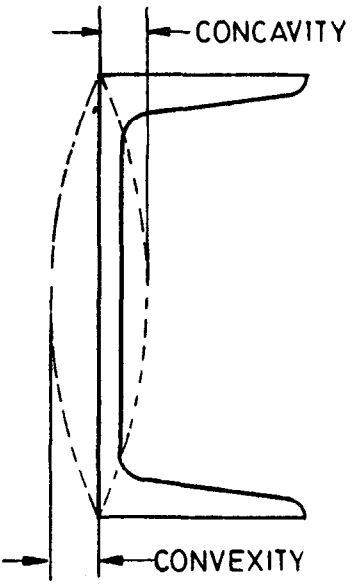


FIG. 5 FLATNESS OF WEB

4.2.5 *Camber and Sweep* — The maximum permissible camber and sweep for channels shall be 0·20 percent of the length (*see* Fig. 6).

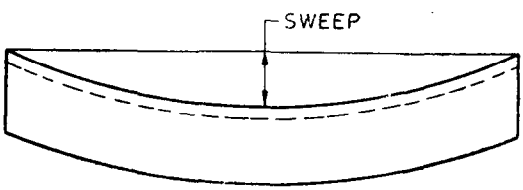


FIG. 6 MEASUREMENT OF SWEEP

4.2.6 *Weight* — The tolerance on weight per metre shall be ± 2·5 percent (or ± 4 percent for steel conforming to Fe 310-0 of IS : 1977-1975*) of the weight per metre specified in Table 2 of IS : 808-1964†, and in Table 1 and Table 2 of IS : 808 (Part 3)-1979‡.

*Specification for structural steel (ordinary quality) (*second revision*).

†Specification for rolled steel beam, channel and angle sections (*revised*).

‡Dimensions for hot-rolled steel beam, channel and angle sections: Part 3 Channel, MC and MCP series (*second revision*).

4.3 Equal and Unequal Leg Angles

4.3.1 *Leg Length* — The tolerance on leg length shall be as follows:

Leg Length		*Tolerance*
Over	Up to and including	
mm	mm	
—	45	± 1·5 mm
45	100	± 2·0 mm
100	—	± 2 percent

4.3.1.1 In the case of unequal leg angle 45 × 30 mm, the tolerance on longer leg length shall be $\begin{matrix}+ 2{\cdot}0 \\ - 1{\cdot}5\end{matrix}$ mm. The tolerance on the shorter leg length shall be specified in **4.3.1.**

NOTE — The provision contained in **4.3.1.1** shall be applicable only for a period of 3 years from the date of publication of this Standard after which it shall stand withdrawn.

4.3.2 *Out-of-Square* — The legs of angles shall be perpendicular to each other within a tolerance of ±1·0 degree.

4.3.3 The differences between the leg lengths of equal leg angles shall be limited to 75 percent of the total tolerance (plus and minus) specified on the leg length.

4.3.4 *Camber* — The permissible limits for camber (*see* Fig. 7) shall be as follows:

Leg Length	*Camber*
mm	*Max*, mm
Less than 100	To be agreed between the manufacturer and the purchaser
Including and over 100	0·2 percent of length

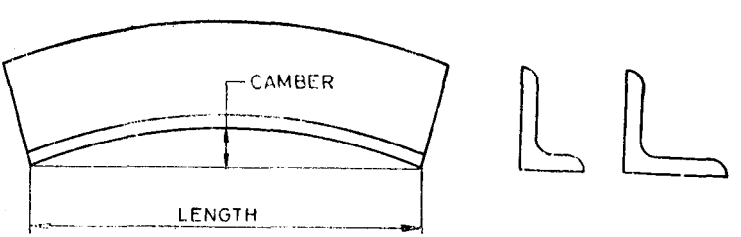


FIG. 7 CAMBER IN ANGLES

4.3.5 *Weight* — The tolerance on weight per metre shall be ± 5 percent in the case of angles 3 mm in thickness and +5, −3 percent in the case of angles over 3 mm in thickness of the weight per metre specified in IS : 808 (Part 5)-1976* and IS : 808 (Part 6)-1976†.

4.4 Tee Bars

4.4.1 *Depth* — The tolerances on depth of rolled tee bars shall be as follows:

Depth		*Tolerance*	
Over	Up to and including	Plus	Minus
mm	mm	mm	mm
—	60	2·0	1·5
60	100	2·5	1·5
100	—	3·0	2·0

4.4.1.1 Tee bars produced by slitting beam sections shall have the same tolerance as the corresponding beams from which they are produced, except that an additional reduction in depth of 2 mm due to slitting shall be permitted.

4.4.2 *Width of Flange* — The tolerance on flange width shall be as follows:

Width	*Tolerance*
mm	
Up to and including 100	± 2·0 mm
Over 100	± 2 percent

4.4.2.1 The tolerance on width of flange for tee bars produced by splitting beam sections shall be the same as for the corresponding beams from which they are produced.

4.4.3 *Out-of-Square* — The flange shall be perpendicular to the web within a tolerance of 1 in 60. In the case of slit tees, the tolerance shall be the same as specified for the corresponding I-section from which the tees are slit.

4.4.4 *Camber* — The maximum permissible camber shall be 0·20 percent of the length.

4.4.4.1 Slit tee bars shall have the same tolerance on camber as the corresponding beams from which they are produced.

*Dimensions for hot-rolled steel beam, channel and angle sections : Part 5 Equal leg angles (*second revision*).

†Dimension for hot-rolled steel beam, channel and angle sections : Part 6 Unequal leg angles (*second revision*).

4.4.5 *Weight* — The tolerance on weight per metre shall be ±2·5 percent (or ±4 percent for steel conforming to Fe 310-0 of IS : 1977-1975*) in the case of tee bars above 3·0 mm web thickness and ±5 percent in the case of tee bars of 3·0 mm web thickness of the weight per metre specified in Table 1 of IS : 1173-1978†.

4.5 Bulb Angles

4.5.1 *Depth (Length of Longer Leg)* — The tolerances on the longer leg shall be as follows:

Depth		*Tolerance*	
Over	Up to and including	Plus	Minus
mm	mm	mm	mm
—	125	2·5	1·5
125	200	3·0	2·0
200	400	3·5	2·5

4.5.2 *Width of Flange (Length of Shorter Leg)* — The tolerance on the width of flange (length of shorter leg) up to and including 100 mm shall be ±2·0 mm.

4.5.3 *Out-of-Square* — The legs of the bulb angles and angles with legs of unequal width and thickness shall be perpendicular to each other within a tolerance of ±1·0 degree.

4.5.4 *Camber* — The maximum permissible camber shall be 0·20 percent of the length.

4.5.5 *Weight* — The tolerance on weight per metre shall be ±2·5 percent (or ±4 percent for steel conforming to Fe 310-0 of IS : 1977-1975‡) of weight per metre specified in Table 1 of IS : 1252-1958§.

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*Specification for structural steel (ordinary quality) (*second revision*).
†Specification for hot-rolled and slit steel tee bars (*second revision*).
‡Specification for rolled steel sections bulb angles.
§Specification for structural steel (ordinary quality) (*second revision*).

5. ROLLING TOLERANCES FOR ROUND AND SQUARE BARS

5.1 Bars in Straight Length

5.1.1 *Size* — The tolerance on size, diameter in the case of round bar and side width in the case of square bar shall be as follows:

Size		*Tolerance*
Over	Up to and including	
mm	mm	mm
—	25	± 0·5
25	35	± 0·6
35	50	± 0·8
50	80	± 1·0
80	100	± 1·3
100	—	± 1·6 percent of diameter or side width

5.1.2 *Ovality and Out-of-Square* — The permissible ovality for round bars measured as the difference between the maximum and minimum diameters, and the out-of-square of square bars measured as the distance between parallel faces across any cross section shall be 75 percent of total tolerance (plus and minus) specified on the size.

5.1.3 *Weight* — The tolerances on weight per metre for round and square bars shall be the following percentages of the calculated weight per metre specified in Tables 1 and 2 respectively of IS : 1732-1971*.

Size		*Tolerance*
Over	Up to and including	
mm	mm	percent
—	10	± 7
10	16	± 5
16	—	± 3

NOTE — The tolerances for machined bars and bars for specialized uses are not covered in this standard.

5.2 Bars in Coil

5.2.1 *Size* — The tolerances on size and diameter in the case of coiled round bar and side width in the case of coiled square bar up to and including 12 mm shall be ±0·5 mm.

NOTE — Measurement shall be taken at a point sufficiently away from the ends ensuring exclusion of heavy ends.

*Dimensions for round and square steel bars for structural and general engineering purposes (*first revision*).

5.2.2 *Out of Shape* — The difference between the maximum and minimum diameters in the case of coiled-round bars and between the two adjoining sides in the case of coiled square bar, at any cross section, shall not exceed 0·65 mm.

NOTE — No weight tolerance is applicable in the case of coiled round and square bars.

6. ROLLING TOLERANCE FOR FLATS

6.1 Width — The tolerances on width of flats shall be as follows:

Width		*Tolerance*
Over	Up to and including	
mm	mm	mm
—	50	± 1·0
50	75	± 1·5
75	100	± 2·0
100	—	± 2 percent subjected to a maximum of 6·0 mm

6.2 Thickness — The tolerances on thickness of flats shall be as follows:

Thickness	*Tolerance*
mm	
Up to and including 12	± 0·5 mm
Over 12	± 4 percent subject to a maximum of 1·5 mm

6.3 Out-of-Square — The permissible tolerance for the out-of-squareness of the overall width in case of parallelogram sections shall be as agreed to between the purchaser and the supplier.

6.4 Weight — The tolerances on weight per metre shall be ±5 percent in the case of flats of 3 mm thickness and $^{+5}_{-3}$ percent for flats over 3 mm thickness of weight specified in Table 1 of IS : 1731-1971*.

*Dimensions for steel flats for structural and general engineering purposes (*first revision*).

7. ROLLING AND CUTTING TOLERANCE FOR PLATES

7.1 Width

7.1.1 The tolerances on width of plate shall be as follows:

Length mm	*Width* mm	*Thickness* mm	*Tolerance on Width*
Up to and including 8 000	Up to and including 2 000	Up to and including 20	− 0·0 + 10 mm
		Over 20	− 0·0 + 15 mm
Up to and including 8 000	Over 2 000	Up to and including 20	− 0·0 + 0·5 percent of width
		Over 20	− 0·0 + 20 mm
Over 8 000	All widths	Up to and including 20	− 0·0 + 0·2 percent of length
		Over 20	− 0·0 + 0·3 percent of length

NOTE 1 — Plates over 32 mm in thickness may be supplied with either as-rolled or gas-cut edges. The tolerances on width in such cases shall be subject to agreement between the purchaser and the supplier.

NOTE 2 — In case plates below 32 mm in thickness are supplied in as-rolled condition the tolerances on width shall be mutually agreed to between the purchaser and the supplier.

7.2 Length

7.2.1 The tolerances on length of plate produced in non-continuous mill shall be as follows:

Length		*Thickness*	*Tolerance on Length*
Over	Up to and including		
mm	mm	mm	
—	2 200	Up to and including 20	− 0·0 + 10 mm
		Over 20	− 0·0 + 15 mm
2 200	3 000	Up to and including 20	− 0·0 + 0·5 percent

Length		*Thickness*	*Tolerance on Length*
Over	Up to and including		
mm	mm	mm	
		Over 20	− 0·0 + 15 mm
3 000	6 300	Up to and including 20	− 0·0 + 0·5 percent
		Over 20	− 0·0 + 0·5 percent
6 300	8 000	Up to and including 20	− 0·0 + 35 mm
		Over 20	− 0·0 + 0·5 percent
8 000	—	Up to and including 20	− 0·0 + 35 mm
		Over 20	− 0·0 + 40 mm

7.2.2 The tolerances for length of plates from 5 to 10 mm thickness when produced in continuous mill shall be as follows:

Length	*Tolerance*
mm	
Up to 2 500	+ 25 mm − 0
Over 2 500	+ 1 percent of the length subject to a maximum of 70 mm − 0

NOTE — Plates over 32 mm in thickness may be supplied with either as-rolled or gas-cut edges. The length tolerance in such cases shall be subject to agreement between the purchaser and the supplier.

7.3 Thickness — The tolerances on thickness shall be as follows:

Thickness	*Tolerance in Percentage of Nominal Thickness*
Less than 8 mm	+ 12·5 − 5·0
From 8 mm up to and including 12 mm	+ 7·5 − 5·0
Over 12 mm	± 5·0

7.3.1 The thickness shall be measured at the following points:

a) One at each corner of the plate;
b) One in the middle of the width; and
c) One in the middle of the length.

These measurements shall be 25 mm away from the edge at points randomly chosen. The thickness measured at each of these points shall satisfy the tolerances specified in **7.3**.

7.4 The consignment weight shall not vary from the theoretical weight specified in Table 3 of IS : 1730 (Part 1)-1974* by more than $^{+5}_{-2{\cdot}5}$ percent.

8. ROLLING AND CUTTING TOLERANCE FOR STRIPS

8.0 The tolerances specified in **8.1**, **8.2**, **8.3** and their sub-clauses apply to strips supplied in coiled form as well as in cut lengths.

8.1 Width

8.1.1 The tolerances on width of strip with trimmed edges shall be as follows:

Width		*Tolerance*	*Total Margin*
Over	Up to and including		
mm	mm	mm	mm
—	160	± 1·25	2·5
160	250	± 1·50	3·0
250	400	± 1·75	3·5
400	500	± 2·25	4·5
500	750	+ 5·0 − 0·0	5·0
750	1 250	+ 6·0 − 0·0	6·0
1 250	1 550	+ 8·0 − 0·0	8·0
1 550	1 850	+ 10·0 − 0·0	10·0

*Dimensions for steel plate, sheet and strip for structural and general engineering purposes : Part 1 Plate (*first revision*).

8.1.2 The tolerances on width of strip supplied with as-rolled edges shall be as follows:

Width		*Tolerance*
Over	Up to and includiug	
mm	mm	mm
—	250	+ 4 − 0
250	600	+ 6 − 0
600	800	+ 10 − 0
800	1 250	+ 30 − 0
1 250	1 550	+ 35 − 0
1 550	1 850	+ 40 − 0

8.1.3 For slit coils, the total margin specified under **8.1.1** shall be taken on plus side only and the minus tolerance shall be zero.

8.2 Thickness

8.2.1 The tolerances on thickness for strip up to and including 500 mm width shall be as follows:

Width		*Tolerance on Thickness*
Over	Up to and including	
mm	mm	mm
—	200	± 0·20
200	320	± 0·23
320	400	± 0·25
400	500	± 0·30

8.2.2 The tolerances on thickness for strip above 500 mm width shall be as follows:

Width	*Tolerance on Thickness*, mm				
mm	From 1·60 mm up to and including 2·0 mm	Over 2·0 mm up to and including 3·0 mm	Over 3·0 mm up to and including 5 mm	Over 5 mm up to and including 8 mm	Over 8 mm up to and including 10 mm
Over 500 up to and including 1 250	± 0·18	± 0·20	± 0·25	± 0·30	± 0·35
Over 1 250 up to and including 1 550	± 0·20	± 0·25	± 0·30	± 0·35	± 0·40
Over 1 550 up to and including 1 850	± 0·22	± 0·28	± 0·35	± 0·40	± 0·40
Over 1 850	—	± 0·28	± 0·35	± 0·40	± 0·40

8.2.2.1 Tolerances on thickness of strips exceeding 10 mm thick shall be agreed to between the purchaser and the supplier.

8.2.2.2 Width and thickness measurement of strip in coil form shall be done leaving the fish tail/tongue portion of the coil both at outer and inner layers of the coil.

8.3 Weight — The tolerance on weight per metre shall be ±10 percent of the weight per metre specified in Table 1 of IS : 1730 (Part 3)-1974*.

8.3.1 The tolerance on weight of individual bundles and consignment for straight lengths up to and including 5 tonnes shall be ±7 percent of the theoretical weight. The theoretical weight of strip is specified in IS : 1730 (Part 3)-1974*.

8.3.1.1 The tolerances on weight of individual consignment above 5 tonnes shall be ±5 percent of the theoretical weight.

*Dimensions for steel plate, sheet and strip for structural and general engineering purposes : Part 3 Strip (*first revision*).

9. ROLLING AND CUTTING TOLERANCE FOR SHEETS

9.1 Width — The tolerances on width of sheets with trimmed edges shall be as follows:

Width mm	*Tolerance*
Up to and including 1 250	+ 6 mm − 0
Over 1 250 up to and including 1 550	+ 0·5 percent − 0
Over 1 550	+ 0·6 percent − 0

9.1.1 Tolerance on width of sheet with as-rolled edges shall be the same as specified in **8.1.2**.

9.2 Length

9.2.1 For sheets produced in non-continuous mills, the tolerances on length shall be as follows:

Length mm	*Tolerance*
Up to and including 2 000	+ 10 mm − 0
Over 2 000	+ 0·5 percent − 0

9.2.2 For sheets produced in continuous mills the tolerance on length shall be as follows:

Length	*Tolerance*
Up to 2 500	+ 25 mm − 0
Over 2 500	+ 1 percent of the sheet length subject to a maximum of 70 mm − 0

NOTE — These may be required and supplied to tolerances given in **9.2.1** subject to mutual agreement between the supplier and the purchaser.

9.3 Thickness

9.3.1 Thickness tolerances for sheets when rolled in continuous hot strip mill shall be those given in **8.2.2**.

9.3.2 For sheets produced in hand mills the thickness tolerances are subject to mutual agreement between the purchaser and the manufacturer.

The following thickness tolerances are given for guidance:

Thickness	*Tolerance*
mm	mm
0·40	± 0·06
0·50	± 0·07
0·63	± 0·09
0·80	± 0·10
0·90	± 0·11
1·00	± 0·12
1·12	± 0·12
1·25	± 0·13
1·40	± 0·14
1·60	± 0·15
1·80	± 0·16
1·90	± 0·17
2 00	± 0·18
2·24	± 0·19
2·50	± 0·20
2·80	± 0·21
3·15	± 0·22
3·55	± 0·24
4·00	± 0·25
4·30	± 0·25
4·67	± 0·27

9.3.3 The thickness shall be measured at the following points:

a) One at each corner of the sheet;
b) One in the middle of the width; and
c) One in the middle of the length.

These measurements shall be 25 mm away from the edge at points randomly chosen. The thickness measured at each of these points shall satisfy the tolerances specified in **9.3.1** and **9.3.2**.

9.4 Weight

9.4.1 The tolerances on weight of individual sheets shall be within the following percentage limits of the theoretical weights specified in Table 2 of IS : 1730 (Part 2)-1974*:

Thickness		*Tolerance on Calculated Weight*
Over	Up to and including	
mm	mm	
—	1·25	± 9
1·25	1·60	± 8
1·60	4·00	± 7

9.4.2 The tolerance on weight of individual bundles and consignment up to and including 5 tonnes shall be ±7 percent of the theoretical weight. The theoretical weigth of sheet is specified in Table 2 of IS : 1730 (Part 2)-1974*.

9.4.2.1 The tolerances on weight of individual consignment above 5 tonnes shall be ±5 percent of the theoretical weight.

10. CUTTING TOLERANCE

10.1 Cutting tolerance for all lengths of hot rolled steel products except plate, strip, and sheet shall be $^{+\ 100}_{-\ 0}$ mm.

APPENDIX A

(*Clause* 1.1.1)

INDIAN STANDARDS ON MATERIALS AND DIMENSIONS OF HOT-ROLLED STEEL PRODUCTS

a) Materials

IS :

226-1975 Structural steel (standard quality) (*fifth revision*)

961-1975 Structural steel (high tensile) (*second revision*)

1079-1973 Hot-rolled carbon steel sheet and strip (*third revision*)

1977-1975 Structural steel (ordinary quality) (*second revision*)

*Dimensions for steel plate, sheet and strip for structural and general engineering purposes: Part 2 Sheets (*first revision*).

IS :

2041-1982 Steel plates for pressure vessels used at moderate and low temperature (*first revision*)

2062-1984 Weldable structural steel (*third revision*)

2385-1977 Hot-rolled mild steel sheet and strip in coil form for cold-reduced tinplate and cold-reduced blackplate (*first revision*)

3747-1982 Hot-rolled steel plates and sheets for flanging and pressing (*first revision*)

3945-1966 Steel for naval purposes

5986-1970 Hot-rolled steel plates and flats for cold-forming and flanging operations

6240-1976 Hot-rolled steel plate (up to 6 mm) sheet and strip for the manufacture of low pressure gas cylinders (*first revision*)

8500-1977 Weldable structural steel (medium and high strength qualities)

10748-1984 Hot-rolled steel skelp/strips for welded tubes and pipes

10787-1984 Hot-rolled micro alloyed steel plates (up to 6 mm) sheets and strips for manufacture of low pressure liquefiable gas cylinders

b) Dimensions

808-1964 Rolled steel beam, channels and angle section (*revised*)

(Part 1)-1973 MB series (*second revision*)

(Part 2)-1978 Columns-SC series (*second revision*)

(Part 3)-1979 Channels, MC and MCP series (*second revision*)

(Part 4)-1976 Equal leg angles (*second revision*)

(Part 5)-1976 Unequal leg angles (*second revision*)

1173-1978 Hot-rolled and slit steel tee bars (*second revision*)

1252-1958 Rolled steel sections, bulb angles

1730 (Part 1)-1974 Plates

1730 (Part 2)-1974 Sheets

1730 (Part 3)-1974 Strips

1731-1971 Flats

1732-1971 Round and square steel bars for general engineering purposes

3954-1966 Hot-rolled steel channel sections for general engineering purposes

(*Continued from page* 2)

Panel for Tolerances on Hot-Rolled Steel Products, SMDC 6 : P6

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AMENDMENT NO. 1 JULY 1992
TO
IS 1852 : 1985 SPECIFICATION FOR ROLLING AND CUTTING TOLERANCES FOR HOT-ROLLED STEEL PRODUCTS

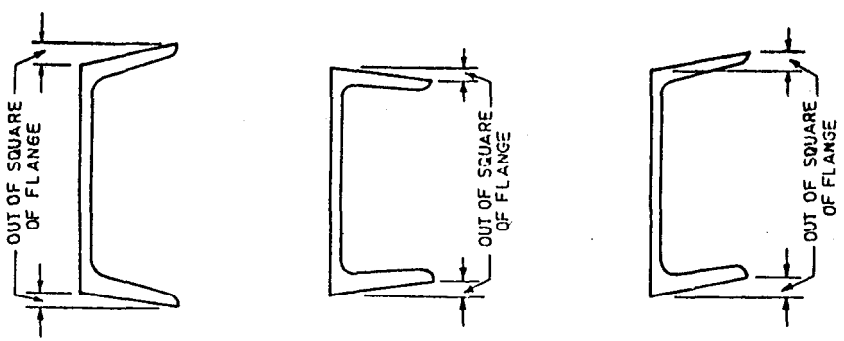
(Fourth Revision)

(*Page* 5, *clause* **4.1.1**, *Note*, *line* 2) — Substitute '8 years' *for* '4 years'.

(*Page* 7, *clause* **4.1.5**) — Insert the following Note at the end:

'NOTE — For beams up to depth of 200 mm (inclusive) tolerance on weight per metre may alternatively be +4, -1 percent. This provision will remain valid for a period of 4 years from the date of publication of this amendment and shall stand withdrawn at the end of 4 years.'

(*Page* 8, *Fig* 4) — Substitute the following for the existing figure:



(*Page* 9, *clause* **4.2.6**) — Insert the following Note at the end:

'NOTE — For channels up to depth of 200 mm (inclusive) tolerance on weight per metre may alternatively be +4, -1 percent. This provision will remain valid for a period of 4 years from the date of publication of this amendment and shall stand withdrawn at the end of 4 years.'

(CED 8)

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AMENDMENT NO. 2 APRIL 2001
TO
IS 1852 : 1985 SPECIFICATION FOR ROLLING AND CUTTING TOLERANCES FOR HOT-ROLLED STEEL PRODUCTS

(Fourth Revision)

[*Page* 5, *clause* 4.1.1, *Note, first sentence* (*see also Amendment No.*1)] — Substitute the following for the existing:

'Tolerances specified above for depth of up to and including 200 mm will remain valid for further period of 4 years from the date of publication of this amendment.'

[*Page* 7, *clause* 4.1.5, *Note* (*see also Amendment No.* 1)]— Substitute the following for the second sentence:

'The provision will remain valid for a further period of 4 years from the date of publication of this amendment.'

[*Page* 9, *clause* 4.2.6, *Note* (*see also Amendment No.* 1)] — Substitute the following for second sentence:

'The provision will remain valid for a further period of 4 years from the date of publication of this amendment.'

(*Page* 17, *clause* 7.3.1) — Substitute the following for the existing clause:

'The measurement shall be taken at a distance of at least 15 mm inside from the edge.'

(*Page* 17, *clause* 7.4) — Delete.

(CED 8)

Reprography Unit, BIS, New Delhi, India