

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 3194 : 1998

Dimensions, mass and permissible
variations of hot rolled flat steel

ICS 77.140.50

Descriptors : dimensions, weight (mass), tolerances (measurement), dimensional tolerances, mechanical tolerances, hot-working, rolling, materials by form, steels

Reference number : JIS G 3194 : 1998 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS G 3194 : 1966** is replaced with **JIS G 3194 : 1998**.

Date of Establishment: 1966-07-01

Date of Revision: 1998-11-20

Date of Public Notice in Official Gazette: 1998-11-20

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Iron and Steel

JIS G 3194:1998, First English edition published in 1999-08

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Printed in Japan

Dimensions, mass and permissible variations of hot rolled flat steel

1 Scope Scope shall be as follows.

- a) This Standard specifies dimensions, mass and permissible variations as well as appearance, shape and allowable limit for hot rolled flat steel which is manufactured by hot rolling.
- b) The scope and the select of the classification of the permissible variations specified in this Standard shall be specified in the respective product standard, or in accordance with agreement between the purchaser and the supplier.

Unless otherwise specified, class B in Table 1 shall be applied.

Remarks : The corresponding International Standards are as following.

ISO 1035-3 : 1980 *Hot-rolled steel bars—Part 3 : Dimensions of flat bars*

ISO 1035-4 : 1982 *Hot-rolled steel bars—Part 4 : Tolerances*

ISO 9034 : 1987 *Hot-rolled structural steel wide flats—Tolerances on dimensions and shape*

2 Normative references The following standard contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent edition of the standard indicated below shall be applied.

JIS Z 8401 *Rules for rounding off of numerical values*

3 Definition The flat steel so called in this Standard shall be defined as the steel which had been hot rolled on four surfaces with rectangular cross-sections and is supplied by being cut into a prescribed length.

4 Expression of dimension The dimension of flat steel shall be expressed in mm for the thickness and width, and in m for the length.

5 Standard dimension Standard dimensions shall be as follows.

- a) Flat steel shall be defined as steel of which width is 1 250 mm max. and thickness 100 mm max. The cross-sectional standard dimension of flat steel shall comply with the Attached Table 1.
- b) The standard length of flat steel shall be 3.5 m, and be taken at intervals of 0.5 m for 4.0 m to 7.0 m and 1.0 m for more than 7.0 m.

6 Classification of permissible variations and the division Classification of permissible variations of flat steel shall comply with Table 1.

Table 1 Classification of permissible variations

Items	Classification of permissible variations				Reference
Thickness t	A	B	C	—	7 a)
Width w	A	B	—	—	7 b)
Length l	A	B	C	D	7 c)
Corner drop c	—	B	—	—	7 d)
Angular distortion	A	B	C	—	7 e)
Flatness: perpendicular direction of rolling	—	B	—	—	7 f) 1)
Flatness: longitudinal direction of rolling	A	B	—	—	7 f) 2)
Twist	—	—	—	—	7 g)

7 Shape and permissible variations of dimensions The shape and permissible variations of dimensions are shown as follows.

- a) The permissible variations of thickness for flat steel shall comply with Table 2.

Table 2 Permissible variations of thickness

Unit : mm

Class	Thickness						
	Less than 6	6 or over up to and incl. 12	12 or over up to and incl. 15	15 or over up to and incl. 20	20 or over up to and incl. 25	25 or over up to and incl. 40	40 or over up to and incl. 100
Class A	± 0.5	± 0.5	± 0.5	± 0.6	± 1.0	± 1.0	± 1.5
Class B	± 0.3	± 0.4	± 0.5	± 0.6	± 0.8	± 1.0	± 1.2
Class C	+ 0.3 - 0.3	+ 0.5 - 0.3	+ 1.1 - 0.3	+ 1.1 - 0.3	+ 1.1 - 0.3	+ 1.4 - 0.3	+ 2.1 - 0.3

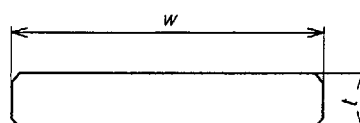
Remarks : The location of thickness measurement shall be at an arbitrary inside point apart from longitudinal edge of flat steel.

- b) The permissible variations of width for flat steel shall comply with Table 3.

Table 3 Permissible variations of width

Unit : mm

Class	Width	
	Less than 50	50 or more
Class A	± 0.8	± 2.0 %, max. ± 10.0
Class B	± 0.8	± 1.6 %, max. ± 3.5

**Fig. 1 Application to width**