



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 3350 : 2021

(JISF)

**Light gauge steel sections for general
structure**

ICS 77.140.70

Reference number : JIS G 3350 : 2021 (E)

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Date of Establishment: 1957-11-25

Date of Revision: 2021-04-20

Date of Public Notice in Official Gazette: 2021-04-20

Developed by: The Japan Iron and Steel Federation

Investigated by: The Japan Iron and Steel Federation, Standardization
Center

JIS G3350 : 2021, First English edition published in 2021-12

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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Printed in Japan

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act in response to a proposal for revision of Japanese Industrial Standard with a draft being attached, submitted by The Japan Iron and Steel Federation (JISF), an accredited standards development organization. This edition replaces the previous edition (**JIS G 3350** : 2017), which has been technically revised.

However, **JIS G 3350** : 2017 may be applied in the **JIS** mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 19 April 2022.

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Light gauge steel sections for general structure

1 Scope

This Japanese Industrial Standard specifies requirements for the cold formed light gauge steel sections intended for buildings and other structures (hereafter referred to as light gauge sections).

For light gauge sections which are manufactured from coated steel sheets and strips, the specification given in Annex A as well as relevant specification in the main body apply.

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 0202 *Glossary of terms used in iron and steel (Testing)*

JIS G 0203 *Glossary of terms used in iron and steel (Products and quality)*

JIS G 0320 *Standard test method for heat analysis of steel products*

JIS G 0404 *Steel and steel products — General technical delivery requirements*

JIS G 0415 *Steel and steel products — Inspection documents*

JIS G 3302 *Hot-dip zinc-coated steel sheet and strip*

JIS G 3317 *Hot-dip zinc-5 % aluminium alloy-coated steel sheet and strip*

JIS G 3321 *Hot-dip 55 % aluminium — zinc alloy-coated steel sheet and strip*

JIS G 3323 *Hot-dip zinc — aluminium-magnesium alloy-coated steel sheet and strip*

JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*

JIS Z 8401 *Rounding of numbers*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions, and those given in JIS G 0202 and JIS G 0203 apply.

3.1

light gauge sections

sections manufactured by cold forming the hot-rolled steel sheets and strips, cold-rolled steel sheets and strips, or coated steel sheets and strips

Note 1 to entry Typically, the roll forming or press bending is used for cold forming.

4 Symbol of grade and applicable thickness

The light gauge sections shall be classified into one grade, and the symbol of grade, designation according to sectional shape and symbol of sectional shape shall be as given in Table 1. The applicable thickness range of light gauge sections shall be as given in Table 2.

Table 1 Symbol of grade, designation according to sectional shape and symbol of sectional shape

Symbol of grade	Designation according to sectional shape	Symbol of sectional shape
SSC400	Light channel	
	Light Z section	
	Light angle	
	Lip channel section	
	Lip Z section	
	Hat section	

Table 2 Applicable thickness

Unit: mm	
Applicable thickness	1.6 or over up to and incl. 6.0

5 Manufacturing method

Light gauge sections shall be manufactured by cold forming the hot-rolled steel sheets and strips, cold-rolled steel sheets and strips, or coated steel sheets and strips. Applicable types of coating for coated steel sheets and strips used for the manufacture of light gauge sections are specified in A.1.

6 Chemical composition

The steel sheets and strips used for the manufacture of light gauge sections shall be tested in accordance with 11.1 and the heat analysis values shall conform to Table 3.

Table 3 Chemical composition ^{a)}

Unit: %			
Symbol of grade	C	P	S
SSC400	0.25 max.	0.050 max.	0.050 max.
Note ^{a)} Alloy elements not included in this table may be added as necessary.			

7 Mechanical properties

Light gauge sections shall be tested in accordance with 11.2, and the mechanical properties shall be as given in Table 4.

Table 4 Mechanical properties

Symbol of grade	Thickness mm	Test piece	Yield point or proof stress N/mm ²	Tensile strength N/mm ²	Elongation %
SSC400	1.6 or over up to and incl. 5.0	No. 5	245 min.	400 to 540	21 min.
	Over 5.0 up to and incl. 6.0	No. 1A			17 min.
NOTE 1 N/mm ² = 1 MPa					

8 Sectional shape, dimensions and mass

8.1 Sectional shape, designation of standard sectional dimensions, sectional dimensions, sectional area and unit mass

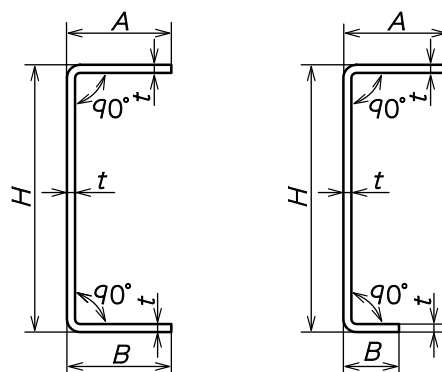
The sectional shape, designation of standard sectional dimensions, sectional dimensions, sectional area and unit mass of the light gauge sections shall be in accordance with Tables 5 to 10 (see 8.3).

Further, the radius of curvature at corner shall generally be 1.5 *t* at the centre line of the thickness (*t*).

The thickness of light gauge sections manufactured from coated steel sheets and strips shall be as given in A.3.1.

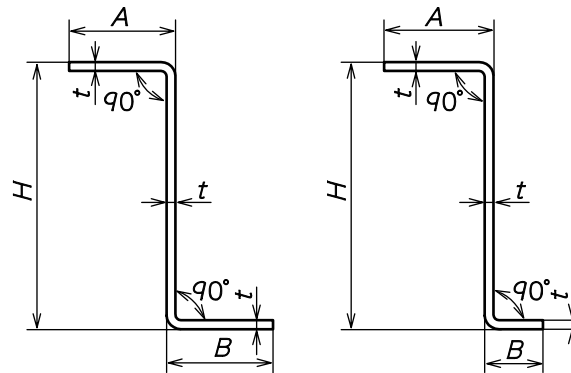
NOTE Sectional properties of light gauge section are shown in Annex B for reference.

Table 5 Sectional shape, designation of standard sectional dimensions, sectional dimensions, sectional area and unit mass of light channel



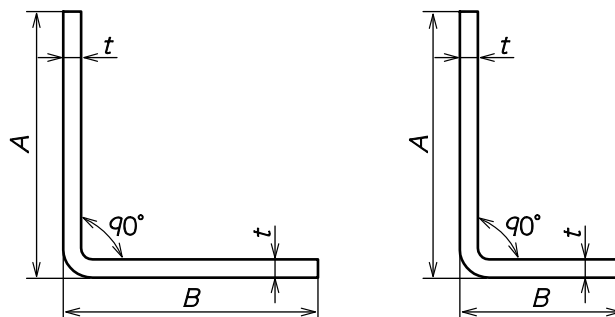
Designation	Standard sectional dimensions ^{a)} mm		Sectional area cm ²	Unit mass kg/m
	$H \times A \times B$	t		
1618	450 × 75 × 75	6.0	34.82	27.3
1617		4.5	26.33	20.7
1578	400 × 75 × 75	6.0	31.82	25.0
1577		4.5	24.08	18.9
1537	350 × 50 × 50	4.5	19.58	15.4
1536		4.0	17.47	13.7
1497	300 × 50 × 50	4.5	17.33	13.6
1496		4.0	15.47	12.1
1458	250 × 75 × 75	6.0	22.82	17.9
1427	250 × 50 × 50	4.5	15.08	11.8
1426		4.0	13.47	10.6
1388	200 × 75 × 75	6.0	19.82	15.6
1387		4.5	15.08	11.8
1357	200 × 50 × 50	4.5	12.83	10.1
1356		4.0	11.47	9.00
1355		3.2	9.263	7.27
1318	150 × 75 × 75	6.0	16.82	13.2
1317		4.5	12.83	10.1
1316		4.0	11.47	9.00
1315		3.2	9.263	7.27
1287	150 × 50 × 50	4.5	10.58	8.31
1285		3.2	7.663	6.02
1283		2.3	5.576	4.38
1245	120 × 40 × 40	3.2	6.063	4.76
1205	100 × 50 × 50	3.2	6.063	4.76
1203		2.3	4.426	3.47
1173	100 × 40 × 40	2.3	3.966	3.11
1133	80 × 40 × 40	2.3	3.506	2.75
1093	60 × 30 × 30	2.3	2.586	2.03
1091		1.6	1.836	1.44
1055	40 × 40 × 40	3.2	3.503	2.75
Note ^{a)} The standard sectional dimensions indicated in this table are representative dimensions. Other dimensions may be used upon agreement between the purchaser and the manufacturer, in which case the sectional area and the unit mass shall be calculated according to Table 12.				

Table 6 Sectional shape, designation of standard sectional dimensions, sectional dimensions, sectional area and unit mass of light Z section



Designation	Standard sectional dimensions ^{a)} mm		Sectional area cm ²	Unit mass kg/m
	$H \times A \times B$	t		
2155	$100 \times 50 \times 50$	3.2	6.063	4.76
2153		2.3	4.426	3.47
2115	$75 \times 30 \times 30$	3.2	3.983	3.13
2073	$60 \times 30 \times 30$	2.3	2.586	2.03
2033	$40 \times 20 \times 20$	2.3	1.666	1.31
2753	$75 \times 40 \times 30$	2.3	3.161	2.48
2723	$75 \times 30 \times 20$	2.3	2.701	2.12
Note ^{a)} The standard sectional dimensions indicated in this table are representative dimensions. Other dimensions may be used upon agreement between the purchaser and the manufacturer, in which case the sectional area and the unit mass shall be calculated according to Table 12.				

Table 7 Sectional shape, designation of standard sectional dimensions, sectional dimensions, sectional area and unit mass of light angle



Designation	Standard sectional dimensions ^{a)} mm		Sectional area cm ²	Unit mass kg/m
	$A \times B$	t		
3155	60×60	3.2	3.672	2.88
3115	50×50	3.2	3.032	2.38
3113		2.3	2.213	1.74
3075	40×40	3.2	2.392	1.88
3035	30×30	3.2	1.752	1.38
3725	75×30	3.2	3.192	2.51
Note ^{a)} The standard sectional dimensions indicated in this table are representative dimensions. Other dimensions may be used upon agreement between the purchaser and the manufacturer, in which case the sectional area and the unit mass shall be calculated according to Table 12.				