

英訳版

英訳版 JIS ハンドブック

鉄 鋼 II

日本規格協会

JIS HANDBOOK

2000

鉄鋼 II
Ferrous Materials & Metallurgy II

Ferrous Materials & Metallurgy II

Steel Bars, Sections, Plates, Sheets and Strip

Steel Tubular Products

Wire Rods and Their Secondary Products

2000



日本規格協会

Japanese Standards Association

- (1) Symbol for class
- (2) Manufacturer's name or abbreviation
- (3) Serial number of manufacture
- (4) Dimensions (outside diameter, thickness and length)

12. **Report** The manufacturer shall submit an inspection certificate and the table of dimension inspection result (one for every 10 or its fraction) to the purchaser.

Further, when the specifications in Remarks of Table 2 are applied, the contents of added elements shall be appended to the inspection certificate.

Attached table 1. Cited standards

JIS G 0303	General rules for inspection of steel
JIS G 1211	Methods for determination of carbon in iron and steel
JIS G 1212	Methods for determination of silicon in iron and steel
JIS G 1213	Methods for determination of manganese in iron and steel
JIS G 1214	Methods for determination of phosphorus in iron and steel
JIS G 1215	Methods for determination of sulfur in iron and steel
JIS G 1253	Method for photoelectric emission spectrochemical analysis of iron and steel
JIS G 1256	Method for X-ray fluorescence spectrometric analysis of iron and steel
JIS G 1257	Iron and steel — Methods for atomic absorption spectrometric analysis
JIS G 3101	Rolled steel for general structure
JIS G 3193	Dimensions, mass and permissible variations of hot rolled steel plates, sheets and strip
JIS Z 2201	Test pieces for tensile test for metallic materials
JIS Z 2241	Method of tensile test for metallic materials
JIS Z 3121	Methods of tensile test for butt welded joints
JIS Z 3211	Covered electrodes for mild steel
JIS Z 3212	Covered electrodes for high tensile strength steel
JIS Z 3312	MAG welding solid wires for mild steel and high strength steel
JIS Z 3313	Flux cored wires for gas shielded and self-shielded metal arc welding of mild steel, high strength steel and low temperature service steel
JIS Z 3351	Submerged arc welding wires for carbon steel and low alloy steel
JIS Z 3352	Submerged arc welding fluxes for carbon steel and low alloy steel
JIS Z 8401	Rules for rounding off of numerical values

Steel H piles

1. **Scope** This Japanese Industrial Standard specifies the steel H piles (hereafter referred to as "piles") used for the foundations of structures related to civil engineering works and architecture.

Remarks: The standards cited in this Standard are shown in Attached Table 1.

2. **Classification and symbols** The piles shall be classified into three classes and their symbols shall be as given in Table 1.

Table 1. Symbols of classes

SHK 400
SHK 400 M
SHK 490 M

3. **Chemical components** The piles shall be tested in accordance with 7.1 and the resulting cast analysis values shall conform to Table 2.

Table 2. Chemical components

Symbol of class	Unit: %				
	C	Si	Mn	P	S
SHK 400	—	—	—	0.050 max.	0.050 max.
SHK 400 M	0.23 max.	—	2.5 × C min.	0.040 max.	0.040 max.
SHK 490 M	0.20 max.	0.55 max.	1.50 max.	0.040 max.	0.040 max.

Remarks: Alloy elements other than those given in the above table may be added, as required.

4. **Mechanical properties** The piles shall be tested in accordance with 7.2 and the resulting yield point, tensile strength and elongation shall conform to Table 3.

Table 3. Yield point, tensile strength and elongation

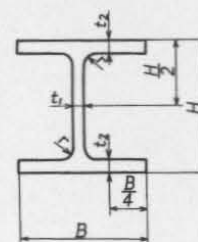
Symbol of class	Thickness ⁽¹⁾ mm	Yield point N/mm ²	Tensile strength N/mm ²	Elongation % No. 1 A test piece
SHK 400	16 or under	245 min.	400 to 510	17 min.
	Over 16	235 min.		21 min.
SHK 400 M	16 or under	245 min.	400 to 510	18 min.
	Over 16	235 min.		22 min.
SHK 490 M	16 or under	325 min.	490 to 610	17 min.
	Over 16	315 min.		21 min.

Note ⁽¹⁾ The thickness stated here denotes t_2 given in Table 4.

5. Shapes, dimensions, mass and their tolerances

5.1 Dimensions, sectional area and mass of piles The dimensions, sectional area and mass of pile shall be as specified in Table 4.

Table 4. Dimensions and mass

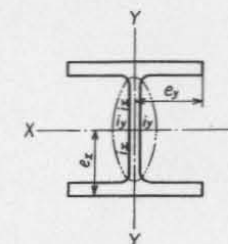


Geometrical moment of inertia $I = Ai^2$

Radius of gyration of area $i = \sqrt{\frac{I}{A}}$

Section modulus $Z = \frac{I}{e}$

where, A : sectional area



Sectional dimension mm					Sectional area A cm ²	Unit mass W kg/m	Informative reference							
Nominal size	$H \times B$	t_1	t_2	r			Geometrical moment of inertia I cm ⁴		Radius of gyration of area i cm		Section modulus Z cm ³		Surface area m ² /m	
							I_x	I_y	i_x	i_y	Z_x	Z_y		
200×200	200×204	12	12	13	71.53	56.2	4 980	1 700	8.35	4.88	498	167	1.17	
250×250	244×252	11	11	13	81.31	63.8	8 700	2 940	10.3	6.01	713	233	1.45	
	250×255	14	14	13	103.9	81.6	11 400	3 880	10.5	6.11	912	304	1.47	
300×300	294×302	12	12	13	106.3	83.4	16 600	5 510	12.5	7.20	1 130	365	1.75	
	300×300	10	15	13	118.5	93.0	20 200	6 750	13.1	7.55	1 350	450	1.76	
	300×305	15	15	13	133.4	105	21 300	7 100	12.6	7.30	1 420	466	1.77	
350×350	338×351	13	13	13	133.3	105	27 700	9 380	14.4	8.39	1 640	534	2.03	
	344×354	16	16	13	164.7	129	34 900	11 800	14.6	8.48	2 030	669	2.05	
	350×350	12	19	13	171.9	135	39 800	13 600	15.2	8.89	2 280	776	2.05	
	350×357	19	19	13	196.4	154	42 300	14 400	14.7	8.57	2 420	808	2.07	
400×400	388×402	15	15	22	178.5	140	49 000	16 300	16.6	9.55	2 520	809	2.32	
	394×405	18	18	22	214.4	168	59 700	20 000	16.7	9.65	3 030	985	2.33	
	400×400	13	21	22	218.7	172	66 600	22 400	17.5	10.1	3 330	1 120	2.34	
	400×408	21	21	22	250.7	197	70 900	23 800	16.8	9.75	3 540	1 170	2.35	
	414×405	18	28	22	295.4	232	92 800	31 000	17.7	10.2	4 480	1 530	2.37	
	428×407	20	35	22	360.7	283	119 000	39 400	18.2	10.4	5 570	1 930	2.41	
500×500	492×465	15	20	26	259.6	204	118 000	33 500	21.3	11.4	4 800	1 440	2.77	
	502×465	15	25	26	306.1	240	147 000	41 900	21.9	11.7	5 850	1 800	2.79	
	502×470	20	25	26	331.2	260	152 000	43 300	21.4	11.4	6 060	1 840	2.80	

Remarks: The method of calculating unit mass shall be as specified in Table 5 of 7. in JIS G 3192.

- (2) Heat number or inspection number
- (3) Dimensions (height, side, thickness and length)
- (4) Manufacturer's name or identifying mark

10. Report The manufacturer shall submit an inspection certificate to the purchaser.

Further, where the specification of Remarks of Table 2 has been applied, the content of added element shall be stated in the inspection certificate.

Attached Table 1. Cited standards

JIS G 0303	General rules for inspection of steel
JIS G 1211	Methods for determination of carbon in iron and steel
JIS G 1212	Methods for determination of silicon in iron and steel
JIS G 1213	Methods for determination of manganese in iron and steel
JIS G 1214	Methods for determination of phosphorus in iron and steel
JIS G 1215	Iron and steel — Methods for determination of sulfur content
JIS G 1253	Method for photoelectric emission spectrochemical analysis of iron and steel
JIS G 1256	Method for X-ray fluorescence spectrometric analysis of iron and steel
JIS G 1257	Iron and steel — Methods for atomic absorption spectrometric analysis
JIS G 1258	Method for inductively coupled plasma emission spectrochemical analysis of steel
JIS G 3192	Dimensions, mass and permissible variations of hot rolled steel sections
JIS Z 2201	Test pieces for tensile test for metallic materials
JIS Z 2241	Method of tensile test for metallic materials

Hot Rolled Steel Sheet Piles

1. Scope

This Japanese Industrial Standard specifies the hot rolled steel sheet piles, hereinafter referred to as the "steel sheet piles", used for sheathing, cofferdam and foundation of structure and the like.

Remark: The units and numerical values given in { } in this Standard are based on the International System of Units (SI) and are appended for informative reference.

Further, the traditional units accompanied by numerical values in this Standard shall be converted to the SI units and numerical values on Jan. 1, 1991.

2. Classification and Symbols

The steel sheet piles shall be classified in two classes and their symbols shall be as given in Table 1-1 or Table 1-2.

Table 1-1. Symbols of Classes
(Applicable till the end of 1990)

Symbols of classes
SY 30
SY 40

Table 1-2. Symbols of Classes
(Applicable on and after Jan. 1, 1991)

Symbols of classes
SY 295
SY 390