

JIS

JAPANESE INDUSTRIAL STANDARD

Parallel Pins

JIS B 1354—1988

Translated and Published

by

Japanese Standards Association

**In the event of any doubt arising,
the original Standard in Japanese is to be final authority.**

JAPANESE INDUSTRIAL STANDARD

J I S

Parallel Pins

B 1354-1988

1. Scope

This Japanese Industrial Standard specifies steel parallel pins, hereinafter referred to as the "steel pins" and stainless steel parallel pins, hereinafter referred to as the "stainless pins" for general use.

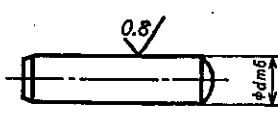
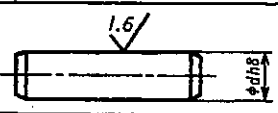
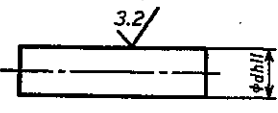
Further, when the terms, steel pins and stainless pins are collectively used in this standard, they shall simply be called the "pins".

Remark: This Standard is in accordance with ISO 2338-1986, excepting the double surround parts in this Standard.

2. Classification

Pins shall be classified into three classes specified in Table 1 according to the shape of their ends, the permissible deviation of diameter of cylindrical parts and the surface roughness of them.

Table 1

Classes	Shape of end parts	Permissible deviation ⁽¹⁾ of diameter of cylindrical part	Surface roughness ⁽²⁾ of cylindrical part	Remark
Class A	One end is flat chamfered, the other is round chamfered.	m6	$R_a = 0.8 \mu\text{m}$	
Class B	Both ends are flat chamfered.	h8	$R_a = 1.6 \mu\text{m}$	
Class C	Both ends are not chamfered	h11	$R_a = 3.2 \mu\text{m}$	

Notes ⁽¹⁾ Symbols for permissible deviations and numerical values for them are in accordance with B 0401.

⁽²⁾ R_a is "arithmetical mean deviation of the profile" specified in JIS B 0601.

Applicable Standards and Corresponding International Standard: See page 5.

3. Hardness

The hardness of pins shall be as given in Table 2.

Table 2

Division		Hardness	
		Vickers hardness	Rockwell hardness
Steel pins	Unhardened	HV 125 to 245	HRB 70 to HRC 21
	Hardened	HV 255 to 327	HRC 23 to 33
Stainless pins		HV 208 to 280	HRB 93 to HRC 27

4. Shape and Dimension

The shape and dimensions of pins shall be as given in Attached Table.

5. Appearance

The surface roughness of cylindrical portion of pins shall be as given in Table 1, and the pins shall be free from quench cracks and burrs and such as adversely affect their performance in use nick or gouge and rust.

6. Heat Treatment and Material

The heat treatment and material for pins shall, as a rule, conform to Table 3.

Table 3

Division	Heat treatment	Material
Steel pin	Unhardened	SUM 22-D to SUM 24 L-D of JIS G 4804, SGD 41-D of JIS G 3123, or S 43 C ⁽³⁾ to S 45 C ⁽³⁾ of JIS G 4051
	Hardened ⁽⁴⁾	S 43 C to S 50 C of JIS G 4051
Stainless pin	Unhardened	SUS 303 of JIS G 4303

Notes ⁽³⁾ This material is normalized.

⁽⁴⁾ When thermally refined steel is used, quench and temper process may be omitted.

7. Surface Treatment

In general, pins shall not be subjected to surface treatment. In the case of steel pins, however, the surface of the pins shall be treated with rust preventive oil, when they are supplied.

Furthermore, if surface treatments of plating and others are needed, the purchaser shall specify that treatment.

8. Inspection

8.1 Hardness Inspection The hardness inspection shall be performed in accordance with the test methods specified in JIS Z 2244 or JIS Z 2245, the hardness at the end of the pin or the hardness of its cylindrical part shall satisfy the requirements of 3.

Furthermore, with regard to the hardness of pins, either of the two kinds of hardness, Vickers and Rockwell, can be used. However, if there is doubt about the measured values of the hardness, the pin shall be accepted or rejected on the basis of Vickers hardness.

8.2 Shape and Dimensional Inspection The inspection for shape and dimensions of pins shall be made by direct measurement, or with limit gauges and by other methods, and they shall satisfy the requirement of 4.

8.3 Appearance Inspection The appearance of pins shall be inspected visually, and shall conform to the requirements of 5. However, with regard to the surface roughness of the cylindrical part of pins, it shall be inspected by the measurement method of surface roughness laid down in JIS B 1071 or other appropriate methods.

8.4 Acceptance Inspection The sampling inspection plans applied to lots on their acceptance shall be agreed between the relevant parties.

9. Designation of Product

The designation of pins shall be made by the standard number or the title, class⁽⁵⁾, nominal diameter x nominal length, Material⁽⁶⁾, and other items to be specified⁽⁷⁾.

Notes (5) Instead of Class A, Class B, and Class C, A, B, and C may be used respectively.

(6) Material shall be designated by material symbols specified in JIS. However, materials of unhardened steel pins may be expressed with the symbol St.

Furthermore, in the case of materials of hardened steel pins, the symbol Q shall be followed after the material designation.

In addition, in the case of thermally refined steel used, the above rule shall be applied with some modification.

(7) Items such as classes of surface treatment shall be indicated as items to be specified, if necessary.

Example:	JIS B 1354	A	6 x 30	S 45 C-Q	
	<u>Parallel pin</u>	<u>Class B</u>	<u>6 x 30</u>	<u>St</u>	<u>Phosphate coating</u>
	(Standard No.) (or title)	(class)	(Nominal diameter x nominal length)	(Material, including designation for quench and temper)	(Item to be specified)

10. Marking on Package

The package shall be marked with the following particulars.

- (1) Title of standard
- (2) Class
- (3) Nominal diameter x nominal length
- (4) Material⁽⁸⁾
- (5) Quantity
- (6) Items specified
- (7) Name of manufacturer or its identification mark⁽⁹⁾

Notes ⁽⁸⁾ The marking of material shall be as Note ⁽⁶⁾. However, the material of the hardened steel pin may be marked (Quenched) instead of Q. [Example: S 45 C (Quenched)]

⁽⁹⁾ "Trade mark" shall be used as far as possible.

Applicable Standards:

JIS B 0401-System of Limits and Fits
JIS B 0601-Definitions and Designation of Surface Roughness
JIS B 1071-Method of Verification for Size and Geometry of Threaded Fasteners
JIS G 3123-Cold Finished Carbon and Alloy Steel Bars
JIS G 4051-Carbon Steels for Machine Structural Use
JIS G 4303-Stainless Steel Bars
JIS G 4804-Free Cutting Carbon Steels
JIS Z 2244-Method of Vickers Hardness Test
JIS Z 2245-Method of Rockwell and Rockwell Superficial Hardness Test

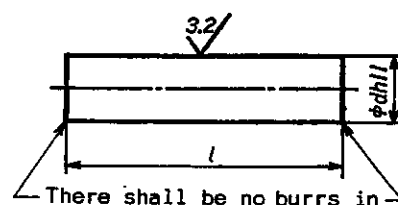
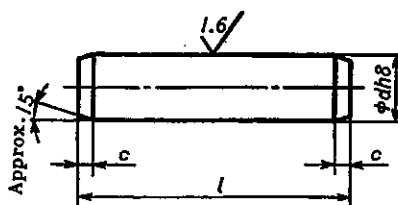
Corresponding International Standard:

ISO 2338-1986 Parallel pins, unhardened

Attached Table. The shape and Dimension of Parallel Pin

Class B

Class A



- There shall be no burrs in the corners in the end parts.

Unit: mm

Nominal dia.		0.6	0.8	1	1.2	1.5	1.6	2	2.5	3	4	5	6	8	10	12	13	16	20	25	30	40	50																																																																																								
d	Basic size	0.6	0.8	1	1.2	1.5	1.6	2	2.5	3	4	5	6	8	10	12	13	16	20	25	30	40	50																																																																																								
	Tolerance	Class A(m6)					+0.008					+0.012					+0.015					+0.018					+0.021					+0.025																																																																															
							+0.002					+0.004					+0.006					+0.007					+0.008					+0.009																																																																															
		Class B(h8)					0					0					0					0					0																																																																																				
							-0.014					-0.018					-0.022					-0.027					-0.033					-0.039																																																																															
a	Approx.	0.080					0.1					0.12					0.16					0.2					0.2					0.25					0.3					0.4					0.5					0.63					0.8					1					1.2					1.6					1.6					2					2.5					3					4					5					6.3				
		0.120					0.16					0.2					0.25					0.3					0.3					0.35					0.4					0.5					0.63					0.8					1.2					1.6					2					2.5					2.5					3					3.5					4					5					6.3					8				

I		
Nominal length	Min.	Max.
2	1.75	2.25
3	2.75	3.25
4	3.75	4.25
5	4.75	5.25
6	5.75	6.25
8	7.75	8.25
10	9.75	10.25
12	11.5	12.5
14	13.5	14.5
16	15.5	16.5
18	17.5	18.5
20	19.5	20.5
22	21.5	22.5
24	23.5	24.5
26	25.5	26.5
28	27.5	28.5
30	29.5	30.5
32	31.5	32.5
35	34.5	35.5
40	39.5	40.5
45	44.5	45.5
50	49.5	50.5
55	54.25	55.75
60	59.25	60.75
65	64.25	65.75
70	69.25	70.75
75	74.25	75.75
80	79.25	80.75
85	84.25	85.75
90	89.25	90.75
95	94.25	95.75
100	99.25	100.75
120	119.25	120.75
140	139.25	140.75
160	159.25	160.75
180	179.25	180.75
200	199.25	200.75

Remarks 1. The recommended length (l) of nominal diameter of pins shall be those found within the hold line. If l outside the table is required, it shall be designated by the purchaser.

Further, nominal lengths exceeding 200 mm should be graded in 20 mm.

2. The tolerances given in this Table shall be applied to the dimensions of the pins before a surface treatment.
3. The shaded numerical values or shaded columns in Attached Table represent those not specified in ISO 2338-1986.

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Edition 1

Japanese Text

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