

Standard Blocks for Hardness

Based on ISO • JIS Standards

BEST QUALITY SAVES YOUR COST

ROCKWELL
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SHORE
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MICRO VICKERS
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NANOINDENTATION



BLOCKS FOR RELIABLE HARDNESS TEST

Table 1 Specification of Standard blocks

YSTL2022

Assortment	Hardness value	Tolerance	Calibration number(n)	Variation (R=Max.-Min)	Materials (JIS notation)	Dimension (mm)	Finished surface	Standard based
HMV (1, 0.1)	1600	±10%	4 (2x2)	2% (HV1)	Si ₃ N ₄	□10×5	□	JIS B 7735
HMV (1.0,1,0.01)	900, 800, 700 , 600, 500 , 400, 300, 200	±15	6 (3x2)	5% (HV0.1)	SK85	φ25×6	□	JIS B 7735
◇	100 (C2600P), 40 (C1020P)	±10	◇	7 (100HV0.1), 4 (40HV0.1)	←	φ25×6	□	◇
HMV (0.1,0.01,0.001)	30 (AU)	±10	◇	4 (HV0.1)	Au	φ25×5 (0.8)	□	◇
UMV (0.01, 0.002)	900, 700, 500 (Berkovich 9.8mN tested)	±20%	6 (3x2)	10% (HV0.01)	SK85	φ25×6	■	JIS B 7735
★ HN-W for Nano indentation	Approx. 400HV (HV0.01, 0.001 Berkovich 9.8mN tested)		6 (3x2 HV, Nano)		Single Crystal Tungsten	φ25×6 (W: φ9×6)	■	JIS B 7735
HV (30, 1)	1000 (SK120), 900, 800, 700	±15	10 (5x2) / HV30, 10	1.5%	SKS3	φ64×15	○	JIS B 7735
HV (10, 1)	600, 500 , 400, 300, 200 , 150, 100	◇	6 (3x2) / HV1	◇	SK85, etc.	◇	○	◇
◇	40	±10		(150HV and below 2.2%)	C1020P	φ64×10	○	◇
HS	100 (SK120), 95, 90 , 80, 70, 60 , 50, 40, 30	±2	HV10 (5x2)	VHS ≤ 1.5 (70HS and below 1.2)	SK85	φ64×15	○	JIS B 7731
◇	20 (S20C), 7 (C1020P φ64×10)	◇	HS10 (5x2)	∠HS (HS-VHS) ≤ 0.5	←	◇	○	◇
HL	HLE (Dia) 850, 800, 700, 600, 500, 460	±15	(HV Calibration)		SK85	φ115×34	○	JIS B 7731
◇	HLD (WC) 880, 830, 730, 630, 520, 480	◇			◇	◇	○	Related
HR C	70 (SK120), 67, 64, 62, 60	±1	10 (5x2)	0.2	SKS3	φ64×15	○	JIS B 7730
◇	57, 55, 50 , 45, 40 , 35, 30 , 25, 20, 10	◇	◇	(40HRC and below 0.3)	SK85	◇	○	◇
HR A	87, 85, 83, 81 , 78, 75, 71, 65 , 56	◇	◇	0.3	Same as HRC	◇	○	◇
◇	30	±2	◇	0.4	C2600P	φ64×10	△	◇
HR30N	83, 81 , 78, 73, 67 , 60, 55, 50, 41	±1	◇	0.6	Same as HRC	φ64×15	○	◇
HR15N (45N)	92, 90 , 87, 85, 80 , 75 (43) (23)	◇	◇	◇	◇	◇	○	◇
HRB W	100, 95, 90	±2	10 (5x2)	0.8	SK85	φ64×10	△	JIS B 7730
◇	82 , 72	◇	◇	◇	Other steel	φ64×15	△	◇
◇	62 , 52, 42 , 32	◇	◇	(50HRB and below 1.0)	C2600P	φ64×10	△	◇
HR30T W	78, 72	◇	◇	1.0	Other steel	φ64×15	○	◇
◇	62 , 52 , 42, 38, 32	◇	◇	◇	C2600P	φ64×10	○	◇
HR15T W	90 (SK85), 87 (S35C)	◇	◇	◇	←	φ64×15	○	◇
◇	82 , 78	◇	◇	◇	C2600P	φ64×10	○	◇
HR (E·M·L·R·F·S) W	HRE 90 HRM107 HRL118 HRR123 HRF90	◇	◇	◇	◇	◇	○	JIS K 7202
◇	HRM67 HRL92 HRR 105 HRS90	◇	◇	◇	(40HV)	◇	○	◇
HBW (10/3000)	600, 550, 500, 450, 400 , 350	±15	6 (3x2)	1.5%	SK85	φ115×18	●	JIS B 7736
◇	300 , 250, 229 (d=4mm), 200 , 180	◇	◇	◇	◇	◇	●	◇
	HBW (10/3000) 150, HBW (10/500) 125	◇	◇	2.5%	S45C	◇	●	◇
	HBW (10/500) 100, 90	◇	◇	3%	S10C	◇	●	◇

Finished test surface; ● Fine grinding, △ plate lapping, ○ Buffing, □ Super finish, ■ Super finish (fine).
The appearance and specifications of these products are subject to change without notice for improvement purposes.

Charpy V-Notch Test Blocks

In compliance with JIS B7740-1990
Feature: Extremely small irregularity in Charpy absorption energy (CV: 3% or less)
Material: SNCM439. (complying with JIS test piece No. 4)
NK verification provided.



Type A
Type B
Type C

Energy Level
approx. 30J
approx. 100J
approx. 160J

5 pieces each energy levels per 1 set

Standard Microstructure

Standard pieces of metal material microstructures, and detailed explanations with photographs.



Group 1~6 : 25 types each
Group 7 : 23 types

- Group 1. Carbon steel, Cast iron
- Group 2. Alloy tool steel, High-speed tool steel
- Group 3. Structural alloy steel, steel for special use
- Group 4. Non-ferrous alloys
- Group 6. Metallic surface, modifications
- Group 7. Abnormal structure

Hardnester

Standard File for Scratch Hardness

PAT.NO.196592

To measure metal hardness of various parts from steel material to thin layers simply and sensitively.

Hardnester	Rocwell "C" 8 Hardness Set	Vickers 8 Hardness Set	Vickers 16 Hardness Set
No. I	HR C 20	HV 200	HV 200-250
No. II	HR C 30	HV 300	HV 300-350
No. III	HR C 40	HV 400	HV 400-450
No. IV	HR C 50	HV 500	HV 500-550
No. V	HR C 55	HV 600	HV 600-650
No. VI	HR C 60	HV 700	HV 700-750
No. VII	HR C 65	HV 800	HV 800-850
No. VIII	HR C 67	HV 900	HV 900-950

with a spare contact measure for each hardness

Standard Piece for Spark Test

Based on Japanese Industrial standard JIS G 0566-1980
Clearly identifies the species of JIS iron and steel materials.
Designed for educational or field use for machine assembly and heat treatment processes.