

【技術資料】 硬度換算表 (SAE J 417) * 1983年改訂

根據洛氏硬度C標度而得之鋼的換算概值表⁽¹⁾

(HRC) 洛氏硬 度C級 硬度	(HV) 維氏 硬度	布氏硬度 (HB) 球體： 直徑荷重10mm等程 荷重3000kgf		洛氏硬度 ⁽³⁾			洛表面硬度 鑽石圓錐壓子			(Hs) 支 柱 硬 度	拉伸強度 (近似值) MPa (kgf/mm ²) (²)	洛氏硬度 C級硬度 (³)
		標準球	碳化錳 壓球	A標度 荷重：60kgf 鑽石圓錐壓子 (HRA)	B標度 荷重：100kgf 直徑1.6mm (HRB)	D標度 荷重：100kgf 鑽石圓錐壓子 (HRD)	15-N 荷重：15kgf	30-N 荷重：30kgf	45-N級 荷重：45kgf			
68	940	—	—	85.6	—	76.9	93.2	84.4	75.4	97	—	68
67	900	—	—	85.0	—	76.1	92.9	83.6	74.2	95	—	67
66	865	—	—	84.5	—	75.4	92.5	82.8	73.3	92	—	66
65	832	—	(739)	83.9	—	74.5	92.2	81.9	72.0	91	—	65
64	800	—	(722)	83.4	—	73.8	91.8	81.1	71.0	88	—	64
63	772	—	(705)	82.8	—	73.0	91.4	80.1	69.9	87	—	63
62	746	—	(688)	82.3	—	72.2	91.1	79.3	68.8	85	—	62
61	720	—	(670)	81.8	—	71.5	90.7	78.4	67.7	83	—	61
60	697	—	(654)	81.2	—	70.7	90.2	77.5	66.6	81	—	60
59	674	—	(634)	80.7	—	69.9	89.8	76.6	65.5	80	—	59
58	653	—	615	80.1	—	69.2	89.3	75.7	64.3	78	—	58
57	633	—	595	79.6	—	68.5	88.9	74.8	63.2	76	—	57
56	613	—	577	79.0	—	67.7	88.3	73.9	62.0	75	—	56
55	595	—	560	78.5	—	66.9	87.9	73.0	60.9	74	2075 (212)	55
54	577	—	543	78.0	—	66.1	87.4	72.0	59.8	72	2015 (205)	54
53	560	—	525	77.4	—	65.4	86.9	71.2	58.5	71	1950 (199)	53
52	544	(500)	512	76.8	—	64.6	86.4	70.2	57.4	69	1880 (192)	52
51	528	(487)	496	76.3	—	63.8	85.9	69.4	56.1	68	1820 (186)	51
50	513	(475)	481	75.9	—	63.1	85.5	68.5	55.0	67	1760 (179)	50
49	498	(464)	469	75.2	—	62.1	85.0	67.6	53.8	66	1695 (173)	49
48	484	451	455	74.7	—	61.4	84.5	66.7	52.5	64	1635 (167)	48
47	471	442	443	74.1	—	60.8	83.9	65.8	51.4	63	1580 (161)	47
46	458	432	432	73.6	—	60.0	83.5	64.8	50.3	62	1530 (156)	46
45	446	421	421	73.1	—	59.2	83.0	64.0	49.0	60	1480 (151)	45
44	434	409	409	72.5	—	58.5	82.5	63.1	47.8	58	1435 (146)	44
43	423	400	400	72.0	—	57.7	82.0	62.2	46.7	57	1385 (141)	43
42	412	390	390	71.5	—	56.9	81.5	61.3	45.5	56	1340 (136)	42
41	402	381	381	70.9	—	56.2	80.9	60.4	44.3	55	1295 (132)	41
40	392	371	371	70.4	—	55.4	80.4	59.5	43.1	54	1250 (127)	40
39	382	362	362	69.9	—	54.6	79.9	58.6	41.9	52	1215 (124)	39
38	372	353	353	69.4	—	53.8	79.4	57.7	40.8	51	1180 (120)	38
37	363	344	344	68.9	—	53.1	78.8	56.8	39.6	50	1160 (118)	37
36	354	336	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49	1115 (114)	36
35	345	327	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48	1080 (110)	35
34	336	319	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47	1055 (108)	34
33	327	311	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46	1025 (105)	33
32	318	301	301	66.3	(107.0)	49.2	76.1	52.1	33.7	44	1000 (102)	32
31	310	294	294	65.8	(106.0)	48.4	75.6	51.3	32.7	43	980 (100)	31
30	302	286	286	65.3	(105.5)	47.7	75.0	50.4	31.3	42	950 (97)	30
29	294	279	279	64.7	(104.5)	47.0	74.5	49.5	30.1	41	930 (95)	29
28	286	271	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41	910 (93)	28
27	279	264	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40	880 (90)	27
26	272	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	860 (88)	26
25	266	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	840 (86)	25
24	260	247	247	62.4	(101.0)	43.1	71.6	45.0	24.3	37	825 (84)	24
23	254	243	243	62.0	100.0	42.1	71.0	44.0	23.1	36	805 (82)	23
22	248	237	237	61.5	99.0	41.6	70.5	43.2	22.0	35	785 (80)	22
21	243	231	231	61.0	98.5	40.9	69.9	42.3	20.7	35	770 (79)	21
20	238	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	760 (77)	20
(18)	230	219	219	—	96.7	—	—	—	—	33	730 (75)	(18)
(16)	222	212	212	—	95.5	—	—	—	—	32	705 (72)	(16)
(14)	213	203	203	—	93.9	—	—	—	—	31	675 (69)	(14)
(12)	204	194	194	—	92.3	—	—	—	—	29	650 (66)	(12)
(10)	196	187	187	—	90.7	—	—	—	—	28	620 (63)	(10)
(8)	188	179	179	—	89.5	—	—	—	—	27	600 (61)	(8)
(6)	180	171	171	—	87.1	—	—	—	—	26	580 (59)	(6)
(4)	173	165	165	—	85.5	—	—	—	—	25	550 (56)	(4)
(2)	166	158	158	—	83.5	—	—	—	—	24	530 (54)	(2)
(0)	160	152	152	—	81.7	—	—	—	—	24	515 (53)	(0)

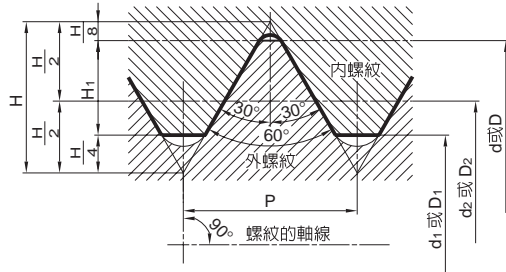
注意⁽¹⁾ 藍色數字是根據ASTM E 140的表1而來 (由SAE、ASM和ASTM共同校正所得)。

⁽²⁾ 括弧中的數值和單位是由psi換算而來，其跟原為JIS Z 8413和Z 8438換算表。1MPa=1N/mm²

⁽³⁾ 表中括弧 () 內的數字比較少用，僅提供參考。

【技術資料】公制的粗螺牙

摘錄自JIS B 0205 (1999)



$$\begin{aligned}
 H &= 0.866025P & D &= d \\
 H_1 &= 0.541266P & D_2 &= d_2 \\
 & & D_1 &= d_1 \\
 d_2 &= d - 0.649519P \\
 d_1 &= d - 1.082532P
 \end{aligned}$$

單位：mm

螺紋的稱呼 (1) *			螺距 P	接合高度 H ₁	內螺紋		
1欄	2欄	3欄			外徑D	有效徑D ₂	內徑D ₁
			外徑d	有效徑d ₂	谷徑d ₁		
M 1	M 1.1		0.25	0.135	1.000	0.838	0.729
M 1.2			0.25	0.135	1.100	0.938	0.829
			0.25	0.135	1.200	1.038	0.929
M 1.6	M 1.4		0.3	0.162	1.400	1.205	1.075
	M 1.8		0.35	0.189	1.600	1.373	1.221
			0.35	0.189	1.800	1.573	1.421
M 2	M 2.2		0.4	0.217	2.000	1.740	1.567
			0.45	0.244	2.200	1.908	1.713
			0.45	0.244	2.500	2.208	2.013
M 3	M 3.5		0.5	0.271	3.000	2.675	2.459
			0.6	0.325	3.500	3.110	2.850
			0.7	0.379	4.000	3.545	3.242
M 5	M 4.5		0.75	0.406	4.500	4.013	3.688
			0.8	0.433	5.000	4.480	4.134
			1	0.541	6.000	5.350	4.917
M 8	M 7	M 9	1	0.541	7.000	6.350	5.917
			1.25	0.677	8.000	7.188	6.647
			1.25	0.677	9.000	8.188	7.647
M10		M11	1.5	0.812	10.000	9.026	8.376
			1.5	0.812	11.000	10.026	9.376
			1.75	0.947	12.000	10.863	10.106
M16	M14		2	1.083	14.000	12.701	11.835
	M18		2	1.083	16.000	14.701	13.835
			2.5	1.353	18.000	16.376	15.294
M20	M22		2.5	1.353	20.000	18.376	17.294
			2.5	1.353	22.000	20.376	19.294
			3	1.624	24.000	22.051	20.752
M30	M27		3	1.624	27.000	25.051	23.752
	M33		3.5	1.894	30.000	27.727	26.211
			3.5	1.894	33.000	30.727	29.211
M36	M39		4	2.165	36.000	33.402	31.670
			4	2.165	39.000	36.402	34.670
			4.5	2.436	42.000	39.077	37.129
M48	M45		4.5	2.436	45.000	42.077	40.129
			5	2.706	48.000	44.752	42.587
			5	2.706	52.000	48.752	46.587
M56	M60		5.5	2.977	56.000	52.428	50.046
			5.5	2.977	60.000	56.428	54.046
			6	3.248	64.000	60.103	57.505
M64	M68		6	3.248	68.000	64.103	61.505
			6	3.248			

* 第1欄為優先的，如必要時請依序選擇2，3欄。