

# [Materials] Standard Material Sizes 2

# [Materials Data] Comparisons of Materials between JIS and Foreign Standards 1

## Stainless Steel Materials

Type	Material Code	Shapes	Unit	Standard Dimensions
Austenite	SUS303	Round Bar	D	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,25,26,28,30
Austenite	SUS304	Flat Bar	t	3,4,5,6,8,9,10,12,14,15,16,19,20,22,25,28,30,35,40,45,50,55,60,70
		Square Bar	—	5,6,7,8,9,10,12,13,14,15,16,19,20,22,25,28,30,32,36,38,40,45,50,60
		Hexagonal Bar	Opposite side H	8,10,14,17,19,21,22,23,24,26,29,30,32,35,36,38,41,46
		Round Bar	D	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,28,30,32,34,35,36,38,40,42,45,46,48,50,55,60,65,70,75,80,85,90,95,100,110,120,130,140,150,160,170,180,190,200,210,220,230
		Steel Plate	t	0.3,0.4,0.5,0.6,0.8,1,1.2,1.5,2,2.5,3,4,5,6,7,8,9,10,12,15,20

## Copper Alloy Materials

Type	Material Code	Shapes	Unit	Standard Dimensions
Brass Plate	C2801P	Steel Plate	t	0.1,0.15,0.2,0.3,0.4,0.5,0.8,1,1.2,1.5,1.6,2,2.3,2.5,3,3.5,4,5,6,7,8,9,10,12,15,20,25,30,40,50
Free-Cutting Brass (Extruded Bar)	C3604BD	Square Bar	—	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,28,30,32,35,36,38,40,42,45,50,55,60,65,70,75,80,85,90,95,100
		Hexagonal Bar	Opposite side H	5,5.5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,32,34,35,36,38,40,41,42,44,45,46,50,54,55,58,60,65,70,75,80
		Round Bar	D	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,32,33,34,35,36,38,40,42,45,46,47,48,50,51,52,53,54,55,56,57,58,60,65,70,75,80,85,90,95,100,105,110,115,120,125,130,135,140,145,150,160,170,180,190,200,210,220,230,240,250,270,280,300,320,350

## Aluminum Alloy Materials

Type	Material Code	Shapes	Unit	Standard Dimensions
Al-Cu Alloy	A2017	Flat Bar	t	0.5,0.6,0.8,1,1.2,1.5,1.6,2,2.5,3,4,5,6,8,10,12,15,20,25,30,40,45,50,60,70,80,90,100
		Round Bar	D	5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,70,75,80,85,90,95,100,105,110,115,120,125,130,135,140,150,160,170,180,190,200,210,220,230,240,250,260,280,300
Al-Mg Alloy	A5052	Flat Bar	t	0.4,0.5,0.6,0.7,0.8,1,1.2,1.5,1.6,2,3,3.2,4,5,6,7,8,10,12,15,16,18,20,22,25,30,35,40,45,50,55,60,65,70,75,80,85,90,95,100,105,110,120,130,150,160,170,180,200
Al-Mg Alloy	A5056	Round Bar	D	5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,70,75,80,85,90,95,100,105,110,115,120,125,130,135,140,150,160,170,180,190,200,210,220,230,240,250,260,270,280,290,300,310,320,330,340,350,360,370,380,390,400,420
Al-Mg-Si Alloy	A6063	Square Bar	—	6,8,10,12,14,15,16,18,19,20,22,25,30,32,35,40,45,50,60,70,80,100

## Resin Type Materials

Type	Material Code	Shapes	Unit	Standard Dimensions
Laminated Sheet	Bakelite	Plate	t	(0.5),(0.6),0.8,1,1.2,1.5,1.6,2,2.5,3,4,5,6,8,10,12,15,16,20,25,30,35,40,50 Sizes in ( ) for cloth base only.
Polyamide Resin	Nylon 6, 66	Plate	t	5,10,15,20,25,30,40,50
		Bar	D	6,8,10,15,20,25,30,35,40,45,50,55,60,65,70,75,80,90,100,120,140,160,180,200
(MC Nylon)	MC Nylon	Plate	t	5,7,10,12,15,20,25,30,35,40,45,50,60,70,80,90,100,110,120
		Bar	D	20,25,30,35,40,45,50,55,60,65,70,75,80,85,90,95,100,110,120,130,140,150,160,170,180,190,200,225,250,275,300,325,350,375,400,450,500,600
Acetal Resin	Polyacetal	Plate	t	5,6,8,10,12,15,20,25,30,35,40,50,60,70,80,90,100
		Bar	D	4,5,6,7,8,9,10,12,12.5,13,15,16,17.5,20,22.5,25,30,35,40,45,50,55,60,65,70,75,80,85,90,100,110,120,(130),(140),150,(160),(180),200
General Methacrylic Resin Plate	Acrylic	Plate	t	0.8,1,1.5,2,3,4,5,6,8,10,15,20,25,30

## Carbon Steel for Machine Structural Use, Alloy Steel

Japan Industrial Standards	Steel Type Related to Foreign Standards					
	Symbol	ISO 683/1,10,11 <sup>1)</sup>	AISI SAE 970 Part1,3 BS EN 10083-1,2	DIN EN 10084 DIN EN 10083-1,2	NF A35-551 NF EN 10083-1,2	ГОСТ 4543
<b>JIS G 4051</b> Carbon Steel for Machine Structural Use	S10C	C10	1010	040A10 045A10 045M10	C10E C10R	XC10
	S12C	—	1012	040A12	—	XC12
	S15C	C15E4 C15M2	1015	055M15	C15E C15R	—
	S17C	—	1017	—	—	XC18
	S20C	—	1020	070M20 C22 C22E C22R	C22 C22E C22R	—
	S22C	—	1023	—	—	—
	S25C	C25 C25E4 C25M2	1025	C25 C25E C25R	C25 C25E C25R	—
	S28C	—	1029	—	—	25 Г
	S30C	C30 C30E4 C30M2	1030	080A30 080M30 C30E C30R	C30 C30E C30R	30 Г
	S33C	—	—	—	—	30 Г
	S35C	C35 C35E4 C35M2	1035	C35 C35E C35R	C35 C35E C35R	35 Г
	S38C	—	1038	—	—	35 Г
	S40C	C40 C40E4 C40M2	1039 1040	080M40 C40 C40E C40R	C40 C40E C40R	40 Г
	S43C	—	1042 1043	080A42	—	40 Г
	S45C	C45 C45E4 C45M2	1045 1046	C45 C45E C45R	C45 C45E C45R	45 Г
	S48C	—	—	080A47	—	45 Г
	S50C	C50 C50E4 C50M2	1049	080M50 C50 C50E C50R	C50 C50E C50R	50 Г
	S53C	—	1050 1053	—	—	50 Г
	S55C	C55 C55E4 C55M2	1055	070M55 C55 C55E C55R	C55 C55E C55R	—
	S58C	C60 C60E4 C60M2	1059 1060	C60 C60E C60R	C60 C60E C60R	60 Г
	S09CK	—	—	045A10 045M10	C10E	XC10
	S15CK	—	—	—	C15E	XC12
	S20CK	—	—	—	—	XC18
<b>JIS G 4106</b> Manganese Steel and Chrome-Manganese Steel for Machine Structural Use	SMn420	22Mn6	1522	150M19	—	—
	SMn433	—	1534	150M36	—	30 Г 2 35 Г 2
	SMn438	36Mn6	1541	150M36	—	40 Г 2 45 Г 2
	SMn443	42Mn6	1541	—	—	40 Г 2 45 Г 2
	SMn420H	—	—	—	—	—
	SMn443H	—	—	—	—	—
<b>JIS G 4202</b> Aluminum Chrome Molybdenum Steel	SACM645	41CrAlMo74	—	—	—	—
<b>JIS G 4052</b> Structural Steel with Guaranteed Hardenability (H Steel)	SMn420H	22Mn6	1522H	—	—	—
	SMn433H	—	—	—	—	—
	SMn438H	36Mn6	1541H	—	—	—
	SMn443H	42Mn6	1541H	—	—	—
	SMn420H	—	—	—	—	—
	SMn443H	—	—	—	—	—
	SCr415H	—	—	—	17Cr3 17CrS3	— 15X
	SCr420H	20Cr4 20CrS4	5120H	—	—	20X
	SCr430H	34Cr4 34CrS4	5130H 5132H	34Cr4 34CrS4	34Cr4 34CrS4	30X
	SCr435H	34Cr4 34CrS4 37Cr4 37CrS4	5135H	37Cr4 37CrS4	37Cr4 37CrS4	35X
	SCr440H	37Cr4 37CrS4 41Cr4 41CrS4	5140H	41Cr4 41CrS4	41Cr4 41CrS4	40X
	SCM415H	—	—	—	—	—
	SCM418H	18CrMo4 18CrMoS4	—	—	18CrMo4 18CrMoS4	—
	SCM420H	—	708H20	—	—	—
	SCM435H	34CrMo4 34CrMoS4	4135H 4137H	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	—
	SCM440H	42CrMo4 42CrMoS4	4140H 4142H	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	—
	SCM445H	—	4145H 4147H	—	—	—
	SCM822H	—	—	—	—	—
	SNC415H	—	—	—	—	—
	SNC631H	—	—	—	—	—
	SNC815H	15NiCr13	—	65Ni13	15NiCr13	—
	SNCM220H	20NiCrMo2 20NiCrMoS2	8617H 8620H 8622H	80SiH20 80SiH22	—	20NiCr2
	SNCM420H	—	4320H	—	—	—

Japan Industrial Standards	Steel Type Related to Foreign Standards					
	Symbol	ISO 683/1,10,11 <sup>1)</sup>	AISI SAE 970 Part1,3 BS EN 10083-1,2	DIN EN 10084 DIN EN 10083-1,2	NF A35-551 NF EN 10083-1,2	ГОСТ 4543
<b>JIS G 4102</b> Nickel-Chromium Steel	SNC236	—	—	—	—	40XH
	SNC415	—	—	—	—	—
	SNC631	—	—	—	—	30XH3A
	SNC815	15NiCr13	—	65Ni13	15NiCr13	—
	SNC836	—	—	—	—	—
<b>JIS G 4103</b> Nickel Chrome Molybdenum Steel	SNCM220	20NiCrMo2 20NiCrMoS2	8615 8617 8620 8622	80SA20 80SM20 80SA22 80SM22	20NiCrMo2 20NiCrMoS2	20NiCr2
	SNCM240	41CrNiMo2 41CrNiMoS2	8637 8640	—	—	—
	SNCM415	—	—	—	—	—
	SNCM420	—	4320	—	—	20NiCr20NiCrM
	SNCM431	—	—	—	—	—
	SNCM439	—	4340	—	—	—
	SNCM447	—	—	—	—	—
	SNCM616	—	—	—	—	—
	SNCM625	—	—	—	—	—
	SNCM630	—	—	—	—	—
	SNCM815	—	—	—	—	—
<b>JIS G 4104</b> Chrome Steel	SCr415	—	—	—	17Cr3 17CrS3	15X 15XA
	SCr420	20Cr4 20CrS4	5120	—	—	20X
	SCr430	34Cr4 34CrS4	5130 5132	34Cr4 34CrS4	34Cr4 34CrS4	30X
	SCr435	34Cr4 34CrS4 37Cr4 37CrS4	5132	37Cr4 37CrS4	37Cr4 37CrS4	35X
	SCr440	37Cr4 37CrS4 41Cr4 41CrS4	5140	41Cr4 41CrS4	41Cr4 41CrS4	40X
	SCr445	—	—	—	—	45X
	SCM415	—	—	—	—	—
<b>JIS G 4105</b> Chrome Molybdenum Steel	SCM418	18CrMo4 18CrMoS4	—	—	18CrMo4 18CrMoS4	20XM
	SCM420	—	708M20	—	—	20XM
	SCM421	—	—	—	—	—
	SCM430	—	4131	—	—	30XM 30XMA
	SCM432	—	—	—	—	—
	SCM435	34CrMo4 34CrMoS4	4137	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
	SCM440	42CrMo4 42CrMoS4	4140 4142	708M40 42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	—
	SCM445	—	4145 4147	—	—	—
	SCM822	—	—	—	—	—
	SNC815	—	501	—	—	—
<b>JIS G 4107</b> High-Temperature Alloy Steel for Bolts	SMB7	42CrMo4 42CrMoS4	4140 4142 4145	708M40 708M40 42CrMo4 <sup>1)</sup>	42CrMo4 <sup>1)</sup> 42CrMo4 <sup>1)</sup>	—
	SMB16	—	—	40CrMoV4-6 <sup>1)</sup> 40CrMoV4-6 <sup>1)</sup>	40CrMoV4-6 <sup>1)</sup> 40CrMoV4-6 <sup>1)</sup>	—
<b>JIS G 4108</b> Steel Bar for Special-Purpose Alloy Bolts	SMB21-1.5	—	—	40CrMoV4-6 <sup>1)</sup> 40CrMoV4-6 <sup>1)</sup>	40CrMoV4-6 <sup>1)</sup> 40CrMoV4-6 <sup>1)</sup>	—
	SMB21-1.5	42CrMo4 42CrMoS4	4142H	—	42CrMo4 <sup>1)</sup>	—
	SMB21-1.5	—	E4340H	—	—	—
	SMB21-1.5	—	4340	—	—	—

Cautions 1) BS EN 10259  
2) DIN 1654 Part 4  
3) DIN 17240  
4) NF EN 10259  
5) ISO683-1, 10 and 11 have been translated into JIS as JIS G 7501, G 7502 and G 7503.

ISO:International Organization for Standardization  
AISI:American Iron and Steel Institute  
SAE:Society of Automotive Engineers  
BS:British Standards  
DIN:Deutsches Institut für Normung  
EN:European Standards  
NF:Norme Française  
ГОСТ:National Standards of Former USSR

## Names of Tool Steels

Roller Steel for General Structure	S5400	Steel, Structure, 400N/mm <sup>2</sup>
------------------------------------	-------	--