

# Al - Mill Specifications

Alloy Series		Composition	Features	JIS	Temper	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation (%)
High purity Aluminum	--	Al	High purity Aluminum of 99.98% or more.	--	O	60	20	50
Pure Aluminum	1000 Series	Al	Pure Aluminum series alloy of 99.90% or more. It excels in corrosion resistance, surface-treatment and moulding processability.	A1050P	O	75	30	35
					H12	100	90	13
					H18	160	145	7
					H24	110	105	10
				A1070P	H18	130	125	6
				A1080P	O	70	25	40
				A1085P	O	70	25	40
					O	90	35	35
					H14	125	115	9
					H24	140	130	14
High strength Aluminum alloy	2000 Series	Al-Cu	Heat-treated type alloy with high strength series. This is good for structural materials.	A2014P	T6	485	415	13
					T651			
				A2017P	T3	440	300	20
					T351	400	270	20
				A2024P	T351	475	325	19
Aluminum alloy	3000 Series	Al-Mn	Strength is little higher than 1000 series, and excels in moulding processability and corrosion resistance.	A3003P	O	110	40	30
					H14	150	145	8
					H24	165	150	20
				A3004P	O	180	70	20
					H19	360	340	3
					H24	240	220	8
					H34	240	200	9
				A3005P	H24	200	180	13
				--	H14	210	200	4
				A4343P	--	--	--	--
Aluminum alloy	4000 Series	Al-Si	Low thermal expansion coefficient and low melting point. Natural colouring is carried out into gray by sulphuric-acid anodic oxidation processing.	A4045P	--	--	--	--

Alloy Series		Composition	Features	JIS	Temper	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation (%)
Aluminum alloy	5000 Series	Al-Mg	Non-heat treatment alloy with high strength, excelling in molding processability and corrosion resistance. Mg is added to pure Aluminum to obtain higher brightness by anodic oxidation processing.	A5005P	H14	160	150	6
					H24	170	150	14
				A5052P	O	195	90	25
					H18	340	325	4
					H34	260	215	12
				A5154P	O	240	115	25
				A5454P	O	250	115	20
				A5083P	O	290	145	20
				A5182P	O	290	145	25
					H38	380	320	7
				A5N01P	O	100	45	30
				--	O	120	40	20
				--	O	190	80	30
				--	O	210	85	30
Aluminum alloy	6000 Series	Al-Mg-Si	Heat treated with high intensity, excelling in corrosion resistance.	A6101P	T6	220	195	15
				A6061P	O	125	55	25
					T4	240	145	22
					T6	310	275	12
				MX 61	T6	300	225	20
High tensile Aluminum alloy	7000 Series	Al-Zn-Mg	High strength alloy. Good for structural and high strength material parts.	A7N01P	T4	355	220	16
					T6	360	295	15
				A7075P	T651	570	505	11
Aluminum alloy	8000 Series	Al-Fe	Special usage material.	A8011	H16	140	130	4
				--	O	100	40	45
				--	O	105	45	40
				--	O	125	50	35

## Aluminum Designation Guide

Below is an example of a common Aluminum product.



### [1] Material

This indicates that the material is an Aluminum alloy.

## [2] Alloy

This shows the type of Aluminum alloy under the 4-digit JIS standard.

1XXX	-	99.00% and higher pure Aluminum content
2XXX	-	Aluminum – Copper alloy
3XXX	-	Aluminum – Manganese alloy
4XXX	-	Aluminum – Silicon alloy
5XXX	-	Aluminum – Magnesium alloy
6XXX	-	Aluminum – Magnesium – Silicon alloy
7XXX	-	Aluminum – Zinc – Magnesium alloy
8XXX	-	Special Aluminum alloy (Lithium)

## [3] Shape or Form

This shows the shape or form of Aluminum products under the JIS standard.

P	-	Plate
PC	-	Plate (Clad)
BE	-	Bar (Extruded)
BD	-	Bar (Drawn)
W	-	Wire
TE	-	Tube (Extruded)
TD	-	Tube (Drawn)
TW	-	Tube (Welded)
S	-	Shape
FD	-	Forging (Die)
FH	-	Forging (Hand)
PB	-	(Plate) Bus Conductor
SB	-	(Shape) Bus Conductor
TB	-	(Tube) Bus Conductor

## [4] Temper

This shows the different types of tempering for Aluminum under the JIS standard.

F	-	As fabricated
H	-	Strain hardened by cold working with or without thermal treatment
H1X	-	Strain hardened without cold working
H2X	-	Strain hardened with partial annealed
H3X	-	Strain hardened and stabilized with low temperature heating

2<sup>nd</sup> digit for H would mean the following:

HX2	-	¼ Hard
HX4	-	½ Hard
HX6	-	¾ Hard

HX8	-	Full Hard
HX9	-	Extra Hard
O	-	Annealed (Full Soft) or T0
T1	-	Cooled from hot working and naturally aged (at room temperature)
T2	-	Cooled from hot working, cold worked and naturally aged
T3	-	Solution heat treated, cold worked and naturally aged
T4	-	Solution heat treated and naturally aged
T5	-	Cooled from hot working and artificially aged (at elevated temperatures)
T6	-	Solution heat treated and artificially aged
T7	-	Solution heat treated and stabilized
T8	-	Solution heat treated, cold worked and artificially aged
T9	-	Solution heat treated, artificially aged and cold worked