



# TECHNICAL DATA SHEET

## PRODUCT: A91060 ALUMINUM ALLOY COIL / SHEET

1060 aluminum alloy is an aluminum-based alloy in the "commercially pure" wrought family (1000 or 1xxx series). It is fundamentally very similar to 1050 aluminum alloy, with the difference coming down to 0.1% aluminum by weight. However, while both 1050 and 1060 are covered by the same ISO standard, they are covered by different ASTM standards. As a wrought alloy, it is typically formed by extrusion or rolling. It is commonly used in the electrical and chemical industries, on account of having high electrical conductivity, corrosion resistance, and workability. It has low mechanical strength compared to more significantly alloyed metals. It can be strengthened by cold working, but not by heat treatment.

### PRODUCT BASIC INFORMATION:

<b>Alloy:</b>	<b>1060</b>
<b>Form:</b>	Sheet, Coil
<b>Temper:</b>	O, H14, H24, H18
<b>Dimension:</b>	Thickness: 0.20mm to 6.0mm Width: 20.0mm to 2,600mm Length: 1,000mm to 4,000mm, or Coil
<b>Surface Finish:</b>	Mill Finish
<b>Standard Specification:</b>	GB/T 3880, ASTM B209
<b>Application:</b>	General Use

### CHEMICAL COMPOSITION:

Element		Percentage (%)
Aluminum	(Al)	99.60 min
Silicon	(Si)	0.25 max
Iron	(Fe)	0.35 max
Copper	(Cu)	0.05 max
Manganese	(Mn)	0.03 max
Magnesium	(Mg)	0.03 max
Chromium	(Cr)	-
Zinc	(Zn)	0.05 max
Titanium	(Ti)	0.03 max
Vanadium	(V)	0.05 max
Remainder Each		0.03 max
Remainder Total		-

**MECHANICAL PROPERTIES:**

		O	H14	H24	H18
<b>Ultimate Strength Rm/MPa</b>		60~100	95~135	95~135	≥ 125
<b>Yield Strength Rp0.2/MPa</b>		≥ 15	≥ 70	≥ 70	≥ 85
<b>Elongation Min. %</b>	≥ 0.2~0.3mm	≥ 15%	≥ 1%	≥ 1%	≥ 1%
	≥ 0.3~0.5mm	≥ 18%	≥ 2%	≥ 2%	≥ 2%
	≥ 0.5~0.8mm	≥ 23%	≥ 2%	≥ 2%	≥ 3%
	≥ 0.8~1.5mm	≥ 23%	≥ 4%	≥ 4%	≥ 3%
	≥ 1.5~3.0mm	≥ 25%	≥ 6%	≥ 6%	≥ 4%
	≥ 3.0~6.0mm	≥ 25%	≥ 10%	≥ 10%	-
<b>Bend Radius (90°)</b>		≥ 0.2~6.0mm	-	-	-

**PHYSICAL DATA :**

<b>Density (20°C):</b>	2,705	kg/m <sup>3</sup>
<b>Melting Point:</b>	646°C	
<b>Thermal Expansion (20°C ~100°C):</b>	23.6 x10 <sup>-6</sup>	/K
<b>Modulus of Elasticity:</b>	69	GPa
<b>Thermal conductivity (Temper O):</b>	234	W·m <sup>-1</sup> ·K <sup>-1</sup>
<b>Electrical Resistivity (Temper O):</b>	0.0278 x10 <sup>-6</sup>	Ω .m
<b>Conductivity (Temper O):</b>	62	%IACS
<b>Magnetic performance:</b>	No	
<b>Color:</b>	Silver	
<b>Odour:</b>	No	

**TOLERANCE ON FORMS AND DIMENSIONS :**

<b>Thickness Tolerance:</b>	<b>Thickness</b>	<b>Width</b>			
		≤1000mm	>1000~1250mm	>1250~1600mm	>1600~2000mm
	≥ 0.2~0.4mm	± 0.02mm	± 0.04mm	± 0.05mm	-
	> 0.4~0.5mm	± 0.03mm	± 0.04mm	± 0.05mm	± 0.06mm
	> 0.5~0.6mm	± 0.03mm	± 0.05mm	± 0.06mm	± 0.07mm
	> 0.6~0.8mm	± 0.03mm	± 0.06mm	± 0.07mm	± 0.08mm
	> 0.8~1.0mm	± 0.04mm	± 0.06mm	± 0.08mm	± 0.09mm
	> 1.0~1.2mm	± 0.04mm	± 0.07mm	± 0.09mm	± 0.10mm
	> 1.2~1.5mm	± 0.05mm	± 0.09mm	± 0.10mm	± 0.11mm
	> 1.5~1.8mm	± 0.06mm	± 0.10mm	± 0.11mm	± 0.12mm
	> 1.8~2.0mm	± 0.06mm	± 0.11mm	± 0.12mm	± 0.14mm
	> 2.0~3.0mm	± 0.07mm	± 0.12mm	± 0.13mm	± 0.15mm
	> 3.0~4.0mm	± 0.10mm	± 0.15mm	± 0.17mm	± 0.18mm
	> 4.0~6.0mm	± 0.18mm	± 0.22mm	± 0.24mm	± 0.25mm

Width Tolerance:	Thickness	Width				
		≤300mm	>300~500mm	>500~1250mm	>1250~1650mm	>1650mm
	≥ 0.2~0.6mm	+ 0.4mm	+ 0.6mm	+ 1.5mm	+ 2.5mm	+ 3.0mm
	> 0.6~1.0mm	+ 0.5mm	+ 1.0mm	+ 1.5mm	+ 2.5mm	+ 3.0mm
	> 1.0~2.0mm	+ 0.7mm	+ 1.2mm	+ 2.0mm	+ 2.5mm	+ 3.0mm
	> 2.0~3.0mm	+ 1.0mm	+ 1.5mm	+ 2.0mm	+ 2.5mm	+ 4.0mm
	> 3.0~6.0mm	+ 1.5mm	+ 2.0mm	+ 3.0mm	+ 3.0mm	+ 5.0mm

Length Tolerance:	Thickness	Length			
		≤1000mm	>1000~2000mm	>2000~3000mm	>3000mm
	≥ 0.2~3.0mm	+ 3mm	+ 4mm	+ 6mm	+ 8mm
	> 3.0~6.0mm	+ 4mm	+ 6mm	+ 8mm	+ 10mm

Flatness Tolerance:	Thickness	Total Deviation		
		On Length	On Width	Partial Deviation
	≥ 0.2~0.5mm	By agreement	By agreement	By agreement
	> 0.5~3.0mm	≤ 0.4%	≤ 0.5%	≤ 0.5%
	> 3.0~6.0mm	≤ 0.3%	≤ 0.4%	≤ 0.4%

Lateral Curvature Tolerance:	Width	Lateral Curvature for Specified Length			
		≤1000mm	>1000~2000mm	>2000~3500mm	>3500mm
	≤300mm	≤ 2.0mm	≤ 4.0mm	≤ 8.0mm	-
	>300~600mm	≤ 1.5mm	≤ 3.0mm	≤ 5.0mm	-
	>600~1000mm	≤ 1.0mm	≤ 2.0mm	≤ 4.0mm	≤ 5.0mm
	>1000~2000mm	-	≤ 2.0mm	≤ 4.0mm	≤ 5.0mm
	>2000mm	-	-	≤ 4.0mm	≤ 5.0mm

Squareness Tolerance:	Length	Squareness Tolerance for Specified Width			
		≤1000mm	>1000~1500mm	>1500~2000mm	>2000mm
	≤1000mm	≤ 4.0mm	-	-	-
	>1000~2000mm	≤ 4.0mm	≤ 5.0mm	≤ 6.0mm	-
	>2000~3000mm	≤ 5.0mm	≤ 5.0mm	≤ 7.0mm	≤ 8.0mm
	>3000~5000mm	≤ 6.0mm	≤ 8.0mm	≤ 8.0mm	≤ 10.0mm

## OTHER PROPERTIES:

**Principal Design Features** This is a relatively low strength, essentially pure aluminum, alloy. It is noted for excellent welding characteristics and formability along with good corrosion resistance. It cannot be hardened by heat treatment.

**Machinability** The machinability of 1060 is fair to poor, especially in the soft temper conditions. In the harder (cold worked) tempers such as H16 and H18 the machining characteristics are improved. Either carbide or high-speed steel tooling may be used and use of lubricants is recommended, although some cutting may be done dry.

	This alloy has excellent forming capability by cold or hot working with commercial techniques.
<b>Weldability</b>	AL 1060 may be welded by standard commercial methods. If filler rod is required it should be of AL 1060. A precaution should be noted for the use of resistance welding as by this method some trial and error experimentation may be required to obtain good results.
<b>Heat Treatment</b>	A non-heat treatable alloy.
<b>Hot Working</b>	The hot working range (as for forging) is 260°C to 510°C. In that range the alloy is easily hot worked.
<b>Cold Working</b>	The cold working characteristics of AL 1060 are excellent. It can readily be cold worked by all conventional methods.
<b>Annealing</b>	Annealing, during or following cold working, is done at 350°C to 450°C, allowing adequate time for thorough heating, followed by air cooling.
<b>Aging</b>	Not applicable to this alloy.
<b>Hardening</b>	The alloy hardens only from cold working. Tempers H12, H14, H16, H18 are determined by the amount of cold working imparted into the alloy.

## APPLICATIONS

<b>Typical Applications</b>	Based on its characteristics, 1060 aluminum alloy is widely used for products which have lower requirement for strength, such as reflector, billboard, decoration, kitchen wares, lamp holder, electric elements, and chemical equipment. And also because of the strong corrosion resistance characteristics, it can be used for the chemical storage, railroad tank cars and other equipment.
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## PACKAGING, HANDING & STORAGE:

<b>Package:</b>	Packed in waterproof Kraft, fastened by steel straps on wood pallets, suitable for handling, loading and unloading from the trunks or containers, suitable for export ocean forwarding.
<b>Handling:</b>	Prevent the goods hurting the people who are moving, loading, unloading, especially pay attention to the rolling and dropping for the coils.
<b>Storage:</b>	Stored in indoor area on plain floor, free away from moisture, water, snow, animal oils and dye wastes, avoid storing with acid or basic chemical goods.



