TECHNICAL DATA SHEET

PRODUCT: A96060 ALUMINUM ALLOY PLATE

6060 alloy is one of the most common alloys of the 6000 series. It is a heat-treatable alloy with very good corrosion resistance and weldability. It is commonly used in window and door frames in residential and commercial applications. It is an ideal alloy for very complex cross-sections and has a very good anodizing response.

PRODUCT BASIC INFORMATION:

Alloy:	**6060**	
Form:	Plate	
Temper:	O, T4, T6, T651	
Dimension:	Thickness:	6.0mm to 150mm
	Width:	1,000mm to 2,500mm
	Length:	3,000mm to 10,000mm
Surface Finish:	Mill Finish	
Standard Specification:	ASTM B221, EN 755	
Application:	General Use	

CHEMICAL COMPOSITION:

Element		**Percentage (%)**
Aluminum	**(Al)**	Remainder
Silicon	**(Si)**	0.30~0.6
Iron	**(Fe)**	0.10~0.3
Copper	**(Cu)**	0.10 max
Manganese	**(Mn)**	0.10 max
Magnesium	**(Mg)**	0.35~0.6
Chromium	**(Cr)**	0.05 max
Zinc	**(Zn)**	0.15 max
Titanium	**(Ti)**	0.10 max
Remainder Each		0.05 max
Remainder Total		0.15 max

MECHANICAL PROPERTIES:

	Temper	Wall Thickness	Ultimate Strength Rm/MPa	Yield Strength Rp0.2/MPa	Elongation Min.%
Tube	**T4**	≤ 15mm	≥ 120	≥ 60	≥ 16%
	T6	≤ 15mm	≥ 190	≥ 150	≥ 8%
	T66	≤ 15mm	≥ 215	≥ 160	≥ 8%
Profile	**T4**	≤ 25mm	≥ 120	≥ 60	≥ 16%
	T6	≤ 3mm 3 < t ≤ 25mm	≥ 190 ≥ 170	≥ 150 ≥ 140	≥ 8% ≥ 8%
	T66	≤ 3mm 3 < t ≤ 25mm	≥ 215 ≥ 195	≥ 160 ≥ 150	≥ 8% ≥ 8%
Bar	**T4**	≤ 150mm*	≥ 120	≥ 60	≥ 16%
	T6	≤ 150mm*	≥ 190	≥ 150	≥ 8%
	T66	≤ 150mm*	≥ 215	≥ 160	≥ 8%

***Note**:* Diameter for round bar, Width across flats for square, Thickness for rectangle bar*

PHYSICAL DATA :

Density (20°C):	2,700	kg/m^3
Melting Point:	655°C	
Thermal Expansion (20°C ~100°C):	23.4 $x10^{-6}$	/K
Modulus of Elasticity:	69.5	GPa
Thermal conductivity (Temper O):	209	W·m-1·K-1
Electrical Resistivity (Temper O):	0.032 $x10^{-6}$	Ω .m
Conductivity (Temper O):	54	%IACS
Magnetic performance:	No	
Color:	Silver	
Odour:	No	

TOLERANCE ON FORMS AND DIMENSIONS :

Thickness Tolerance:	Thickness	Width			
		≤1250mm	>1250~1600mm	>1600~2000mm	>2000~2500mm
	≥ 6~8mm	± 0.35mm	± 0.40mm	± 0.40mm	± 0.50mm
	> 8~10mm	± 0.45mm	± 0.50mm	± 0.50mm	± 0.55mm
	> 10~15mm	± 0.50mm	± 0.60mm	± 0.65mm	± 0.65mm
	> 15~20mm	± 0.60mm	± 0.70mm	± 0.75mm	± 0.80mm
	> 20~30mm	± 0.65mm	± 0.75mm	± 0.85mm	± 0.90mm
	> 30~40mm	± 0.75mm	± 0.85mm	± 1.00mm	± 1.10mm
	> 40~50mm	± 0.90mm	± 1.00mm	± 1.10mm	± 1.20mm
	> 50~60mm	± 1.10mm	± 1.20mm	± 1.40mm	± 1.50mm
	> 60~80mm	± 1.40mm	± 1.50mm	± 1.70mm	± 1.90mm
	> 80~100mm	± 1.70mm	± 1.80mm	± 1.90mm	± 2.10mm
	> 100~150mm	± 2.10mm	± 2.20mm	± 2.50mm	± 2.60mm

Width Tolerance:	Thickness	Width		
		≤ 1000mm	> 1000~2000mm	> 2000~2500mm
	≥ 6~12mm	+ 6mm	+ 7mm	+ 8mm
	> 12~50mm	+ 6mm	+ 7mm	+ 9mm
	> 50~150mm	+ 8mm	+ 8mm	+ 9mm

Length Tolerance:	Thickness	Length			
		≤ 2000mm	> 2000~3000mm	> 3000~4000mm	> 4000
	≥ 6~150mm	+ 7mm	+ 8mm	+ 9mm	+ 10mm

Flatness Tolerance:	Thickness	Total Deviation %		
		On Length	On Width	Partial Deviation
	≥ 6~50mm	≤ 0.2%	≤ 0.4%	≤ 0.3%
	> 50~150mm	≤ 0.2%	≤ 0.2%	By agreement

Lateral Curvature Tolerance:	Width	Lateral Curvature Tolerance for Specified Length			
		≤ 2000mm	> 2000~3000mm	> 3000~5000mm	> 5000mm
	≤1250mm	≤ 4mm	≤ 7mm	≤ 10mm	≤ 0.2% of Specified Length
	>1250~1500mm	≤ 3mm	≤ 6mm	≤ 8mm	
	>1500~2000mm	≤ 3mm	≤ 6mm	≤ 7mm	
	>2000mm	-	≤ 5mm	≤ 6mm	

Squareness Tolerance:	Length	Squareness Tolerance for Specified Width			
		≤ 1000mm	>1000~1500mm	>1500~2000mm	> 2000mm
	≤2000mm	≤ 6mm	≤ 7mm	≤ 8mm	-
	>2000~3000mm	≤ 7mm	≤ 7mm	≤ 9mm	≤ 10mm
	>3000~3500mm	≤ 7mm	≤ 8mm	≤ 10mm	≤ 10mm
	>3500~5000mm	≤ 8mm	≤ 10mm	≤ 10mm	≤ 12mm
	>5000mm	≤ 12mm	≤ 12mm	≤ 15mm	≤ 15mm

OTHER PROPERTIES:

Principal Design Features	This alloy has the highest strength of the 6000 series alloys. It is known as a high strength structural alloy with good weldability, workability and machinability. Due to the fine grained structure this alloy exhibits a good resistance to dynamic loading conditions.
Machinability	Machinability in the harder T4 and T6 tempers is good. It is notably less easy to machine in the annealed temper.
Forming	Easily cold worked and formed in the annealed condition. Stamping, bending, spinning, deep drawing are all readily accomplished using standard methods.
Weldability	Aluminum alloy 6082 has very good weldability but strength is lowered in the weld zone. When welded to itself, alloy 4043 wire is recommended. If

	welding Aluminum alloy 6082 to 7005, then the wire used should be alloy 5356.
Heat Treatment	Solution heat treat at 530°C for adequate time to allow for thorough heating and then water quench. Precipitation hardening is done at 175°C for 10 to 18 hours and air cool.
Hot Working	Hot working may be done in the temperature range of 260°C to 370°C.
Cold Working	Cold working in the O temper condition is readily performed. The alloy is notably less easy to cold form in the T4 and T6 tempers.
Annealing	Annealing should be done at 415°C for few hours followed by controlled cooling, then air cool.
Aging	The aging precipitation heat treatment is done at 175°C for 8 hours followed by air cooling. This produces the T6 temper.
Hardening	See "Aging".

APPLICATIONS

Typical Applications	Aluminum alloy 6082 is typically is used for milk churns, trusses, cranes, ore skips, beer barrels, bridges, scaffolding elements, rail coach parts, offshore constructions, containers, machine building and mobile cranes, highly stressed applications and transport applications. EN AW-6082 is certified for use in marine applications

PACKAGING, HANDING & STORAGE:

Package:	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.
Handling:	Prevent the goods hurting the people who are moving, loading, unloading, especially pay attention to the rolling and dropping for the coils.
Storage:	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.