

TECHNICAL DATA SHEET (TDS)

PRODUCT: 5754 ALUMINUM ALLOY PLATE

5754 aluminum alloy is an alloy in the wrought aluminum -magnesium family (5000 or 5xxx series). It is closely related to the alloys 5154 and 5454 (Aluminum Association designations that only differ in the second digit are variations on the same alloy). Of the three 5x54 alloys, 5754 is the least alloyed (highest composition % of aluminum), but only by a small amount. It is used in similar applications. As a wrought alloy, it can be formed by rolling, extrusion, and forging, but not casting. It can be cold worked to produce tempers with a higher strength but a lower ductility.

PRODUCT BASIC INFORMATION:

Alloy:	5754	
Form:	Plate	
Temper:	O, H111, H112	
Dimension:	Thickness:	6.0mm to 100mm
	Width:	1,000mm to 2,500mm
	Length:	3,000mm to 10,000mm
Surface Finish:	Mill Finish	
Standard Specification:	EN 485, ASTM B209	
Application:	General Use	

CHEMICAL COMPOSITION:

Element	Percentage (%)
Aluminum (Al)	Remainder
Silicon (Si)	0.40 max
Iron (Fe)	0.40 max
Copper (Cu)	0.10 max
Manganese (Mn)	0.50 max
Magnesium (Mg)	2.6~3.6
Chromium (Cr)	0.30 max
Zinc (Zn)	0.20 max
Titanium (Ti)	0.15 max
Remainder Each	0.05 max
Remainder Total	0.15 max

MECHANICAL PROPERTIES:

Temper	Thickness	Ultimate Strength Rm/MPa	Yield Strength Rp0.2/MPa	Elongation Min.%	Bend Radius (90°)
O	≥ 6.0~12.5mm	190~240	≥ 80	≥ 18%	2.0t
H111	≥ 12.5~100mm	190~240	≥ 80	≥ 17%	-
	≥ 6.0~12.5mm	≥ 190	≥ 100	≥ 12%	-
H112	≥ 12.5~25mm	≥ 190	≥ 90	≥ 10%	-
	≥ 25~40mm	≥ 190	≥ 80	≥ 12%	-
	≥ 40~80mm	≥ 190	≥ 80	≥ 14%	-

PHYSICAL DATA :

Density (20°C):	2,670	kg/m ³
Melting Point:	602°C	
Thermal Expansion (20°C ~100°C):	23.7 x10 ⁻⁶	/K
Modulus of Elasticity:	68	GPa
Thermal conductivity (Temper O):	147	W·m-1·K-1
Electrical Resistivity (Temper O):	0.049 x10 ⁻⁶	Ω .m
Conductivity (Temper O):	32.5	%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	

Width Tolerance:	Thickness	Width		
		≤ 1000mm	> 1000~2000mm	> 2000~2500mm
≥ 6~12mm	+ 6mm	+ 7mm	+ 8mm	
> 12~50mm	+ 6mm	+ 7mm	+ 9mm	
> 50~100mm	+ 8mm	+ 8mm	+ 9mm	

Length Tolerance:	Thickness	Length			
		≤ 2000mm	> 2000~3000mm	> 3000~4000mm	> 4000
	≥ 6~100mm	+ 7mm	+ 8mm	+ 9mm	+ 10mm

Flatness Tolerance:	Thickness	Total Deviation %		
		On Length	On Width	Partial Deviation
	≥ 6~50mm	≤ 0.2%	≤ 0.4%	≤ 0.3%
	> 50~100mm	≤ 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	
	≤ 3mm	≤ 6mm	≤ 8mm		
	≤ 3mm	≤ 6mm	≤ 7mm		
	-	≤ 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	≤ 10mm
>3000~3500mm	≤ 7mm	≤ 8mm	≤ 10mm	≤ 10mm	≤ 10mm
>3500~5000mm	≤ 8mm	≤ 10mm	≤ 10mm	≤ 12mm	≤ 12mm
>5000mm	≤ 12mm	≤ 12mm	≤ 15mm	≤ 15mm	≤ 15mm

OTHER PROPERTIES:

Principal Design Features	Alloy 5754 is a non-heat treatable alloy of aluminum and magnesium. It is a moderate strength alloy that may be hardened (strengthened) by cold working.
Machinability	The machinability of Alloy 5754 is fair to poor. It is best to do machining operations with the alloy in the H-34 temper condition. Use of oil lubricants is recommended, except that very light cuts may be done dry.
Forming	This alloy does possess good hot working and cold working characteristics. It may be readily cold worked in any of the temper, or annealed, conditions.
Weldability	All of the commercial welding methods will work satisfactorily with alloy 5754. The TIG or MIG process, with Al 5554 or 5356 filler rod, works especially well.
Heat Treatment	This alloy is not heat treatable, except for annealing to relieve cold working. It does harden due to cold working.
Hot Working	This alloy has excellent cold working characteristics such that hot working should not normally be necessary. However it may be hot worked in the temperature range of 205°C to 370°C.

Cold Working	Cold working is easily accomplished with this alloy by conventional methods. It may be cold worked satisfactorily in either the annealed condition or any of the H-32, H-34, H-111 tempers.
Annealing	Annealing, if necessary to relieve cold working stress, may be done at 345°C, allowing sufficient time for thorough heating, followed by air cooling.
Aging	Not applicable to this alloy.
Hardening	Only cold working will cause hardening (strengthening) of this alloy as it does not harden by heat treatment.

APPLICATIONS

Typical Applications	Aluminum 5754 has excellent corrosion resistance, especially to seawater and industrially polluted atmospheres. Typical uses include: body panels and interior parts for the automotive industry. It can also be used for food processing, vehicle bodies, shipbuilding, roofing, cladding, signage, road signs, furniture, anodizing, doors and windows-bridges, and support structures, interior designs, floor applications, tread plate, fishing industry equipment, welded chemical & nuclear structures.
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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.

The above mentioned aluminum product is produced according to national standard specifications, and has no poison, no pollution, and no cauterization. It is common industry metal material.

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