

Designation	AlMg3	EN	UNS (ASTM)	AISI	LMSA
		3.3535	AW5754	AA5754	-

Chemical composition (Weight %)

Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Residuals total	Residuals each
Balance	≤ 0.40	≤ 0.40	≤ 0.10	≤ 0.50	2.60-3.60	≤ 0.30	≤ 0.20	≤ 0.15	≤ 0.15	≤ 0.05

In order to achieve maximum homogeneity and consistent quality, the actual tolerances on both alloy components and impurities, are significantly tighter and more precisely defined than the standard analysis indicated.

Main Technological Properties

Aluminium and aluminium alloys have many characteristics which cannot be replaced by other materials. These encompass low density, almost 3 times lower than that of steel, corrosion resistance due to the Al_2O_3 oxide coating, developing at the surface and easy formability. The aluminium-magnesium alloys, like AlMg3 (AW5754, AA5754), typically contain less than 4 % of magnesium and are not precipitation hardenable. Most of the magnesium contained in the alloys is in solid solution. Therefore, the hardening of the AlMg3, Peraluman 300, is only due to the cold deformation. Lamineries Matthey SA offers AlMg3 (AA5754), Peraluman 300 precision cold rolled strips and foils in different tempers.

For an aluminium alloy, the AlMg3 (AW5754, AA5754) Peraluman 300 presents relatively high mechanical properties in the cold rolled temper. Its corrosion resistance, especially in the salt water and the industrial field is very high. The best corrosion resistance is obtained in the soft temper, because a long exposition of the cold rolled strips at low temperatures can provoke the precipitation of Mg_2Al_3 at the grain boundaries, which can induce intergranular corrosion and stress corrosion cracking. This alloy has an excellent polishing ability and can be easily anodized. However, its brazability is low. The electrical conductivity of the AlMg3 (AW5754, AA5754) Peraluman 300 is lower than those of pure aluminum (62% IACS International Annealed Copper Standard) and is about one third of that of pure copper, i.e. approximately 33% IACS.

Typical manufacturing range

		Thickness (mm)	Width (mm)	Length (mm)
Rolled products	Strips in coils ¹⁾	0.005 - 1.000	1.5 - 210.0	-
	Strips, sheets in ¹⁾	0.005 - 1.500	10.0 - 210.0	100 - 3000

1) All our production possibilities are not presented here. Other dimensions or other product forms available upon request. Certain combinations of thicknesses and widths are not possible.

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Mechanical properties of strips

	Tempera		Rm (N/mm ²)	Rp0.2 (N/mm ²)	A _{50mm} (%)	Hv (N/mm ²)
R190	H45	Annealed	190 - 250	60 - 160	min. 8	45 - 75
R300	H90	Cold rolled	410-470	min. 200	-	90 - 130

Physical properties

Modulus of elasticity	kN/mm ²	70.5
Poisson ratio		
Density	kg/dm ³	2.68
Melting temperature	°C	600
Linear dilatation coefficient	10 ⁻⁶ / °C	23.7
Thermal conductivity at 20°C	W/m °K	132
Electrical resistivity	μΩcm	5.305
Electrical conductivity	MS/m	18.85
Electrical conductivity	% IACS	32.5
Specific heat (25°C)	J/(g.K)	897
Magnetic properties		Non magnetic

Typical uses

Due to its excellent corrosion resistance, the Peraluman 300, AlMg3 (AW5754, AA5754) is widely used in the chemical and food industry as well as for furnishing, aerospace and marine applications. The thin precision strips or foils in Peraluman 300 produced at Lamineries Matthey SA are used for highly demanding applications in the watch or automotive industries for example.



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Tolerances

Thickness	Thickness (mm)		EN Standard		Lamineries MATTHEY SA		
	≥	<	10140 Precision	10258 Precision	LMSA Standard	LMSA Precision	LMSA Extreme
<p>The table shown is an outline of our typical thickness tolerances available, which are tighter than industry standards.</p> <p>Upon request: our "LMSA Precision" and "LMSA Extreme" tolerances are also available.</p>	0.025	0.025	-	-	-	-	± 0.001
	0.050	0.050	-	-	± 0.003	± 0.002	± 0.0015
	0.065	0.065	-	± 0.003	± 0.003	± 0.0025	± 0.002
	0.100	0.100	-	± 0.004	± 0.004	± 0.0035	± 0.003
	0.125	0.125	± 0.005	± 0.006	± 0.005	± 0.004	± 0.003
	0.150	0.150	± 0.005	± 0.006	± 0.005	± 0.005	± 0.004
	0.250	0.250	± 0.010	± 0.008	± 0.008	± 0.006	± 0.004
	0.300	0.300	± 0.010	± 0.009	± 0.009	± 0.007	± 0.005
	0.400	0.400	± 0.010	± 0.010	± 0.010	± 0.007	± 0.005
	0.500	0.500	± 0.015	± 0.012	± 0.012	± 0.008	± 0.006
	0.600	0.600	± 0.015	± 0.014	± 0.014	± 0.010	± 0.007
	0.800	0.800	± 0.015	± 0.015	± 0.015	± 0.010	± 0.007
	1.000	1.000	± 0.015	± 0.018	± 0.018	± 0.012	± 0.009
	1.200	1.200	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
	1.250	1.250	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
1.500	1.500	± 0.020	± 0.020	± 0.020	± 0.015	± 0.014	

Width

Our width tolerance is + 0.2 -0.0 mm (or ± 0.1 mm upon request). They are available for slit widths < 125 mm and thicknesses < 1.00 mm. Special tolerances upon request.

Camber

	Width (mm)		Camber max. (mm/m)			
	>	≤	LMSA standard		LMSA extreme	
			≤ 0.5 mm	> 0.5 mm	≤ 0.5 mm	> 0.5 mm
<p>Our tolerance "standard" respects the EN Standard 1654 (Length of measurement 1000 mm).</p> <p>Other tolerances upon request.</p>	3	6	12	-	6	-
	6	10	8	10	4	5
	10	20	4	6	2	3
	20	250	2	3	1	1.5

Surface

Special surface qualities upon request

Flatness

Special requirement on the longitudinal or transversal flatness upon request