Aluminium Alloy AA6012 (AC42)

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Alloy 6012 is developed specifically for machining applications, renowned for good machining characteristics and excellent anodizing response. Lead content less then 1% and no other prohibited elements is used for automotive brake components, hydraulic valve blocks and many other applications. AA6012 alloy is a direct replacement for 6012 -classic, retains all the technological properties of the original 6012.

Chemical Composition AA6012 :

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Each	Total	Other	Additional
AA6012	0,6 1,0	max. 0,50	max 0,10	0,40 1,0	0,60 1,2	max 0,30	max. 0,30	max. 0,20	0,40 1,0	max. 0,05	max. 0,15	Bi max.0,7	

Mechanical Properties AA6012:

Cold Drawn									
Temper	Dimension		Rm min.		$Rp_{0.2}$ min.		A	A (2")	HB min.
	mm	inch (")	MPa	ksi	MPa	ksi	% min.		
T6	5 to 76.2	0.197 to 3	310	45	260	38	8	8	80
Extruded									
Temper	Dimension		Rm min.		$Rp_{0.2}$ min.		A	A (2")	HB min.
	mm	inch (")	MPa	ksi	MPa	ksi	% min.		
T6 T6510 T6511	20 to 150	0.788 to 5.906	310	45	260	38	8	10	80
T6 T6510 T6511	150 to 180	5.906 to 7.087	260	38	200	29	8	10	80

Comparative Characteristics AA6012:

Temper	Corrosion resistance		Cold workability	Anodizing Response	Brazeability	Weldability	
	General	Stress				Gas	Arc
T6	B	A	B	A	B	B	B
T6, T6510, T6511	B	A	B	A	B	B	B

Rating: **A**=Excellent, **B**=Good, **C**=Fair, **D**=Poor

Physical Properties AA6012:

Density (g/cm^3)	2,74
Modulus of elasticity (MPa)	70110
Thermal conductivity (W/m K)	172
Coefficient of thermal expansion (20-100°) 10^{-6} /K	23,4
Electrical resistivity (MS/m)	26 (45% IACS)