VitraPlate®
Data Sheet - Aluminum Alloy 5005 - H34

BY FAIRVIEW ARCHITECTURAL
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METAL PLATE AND SHEET

Description

5005 aluminium alloy is an aluminium alloy with good resistance to atmospheric corrosion. It is used in decorative and architectural applications, and where anodized finishes are desired. It is a member of the 5000 series of aluminum-magnesium wrought alloys. As such, it is not used in casting. It can attain moderate to high strength by cold working, and has relatively high welded strength compared to other aluminum alloy families.

Mechanical Properties

Requirements for strain hardened and stabilized H34 temper (½ hard) as specified in ASTM B209 and ASME SB209

Property	Data
Elastic (Young's, Tensile) Modulus	10 x 10^6 psi
Elongation at Break	5.3 %
Modulus of Resilience (Unit Resilience)	3.22 BTU/ft^3
Poisson's Ratio	0.33
Shear Modulus	3.8 x 10^6 psi
Shear Strength	14 x 10^3 psi
Strength to Weight Ratio	3.8 psi/ft
Tensile Strength: Ultimate (UTS)	23 x 10^3 psi
Tensile Strength: Yield (Proof)	19 x 10^3 psi
Unit Rupture Work (Ultimate Resilience)	214 BTU/ft^3

Chemical Composition

Chemical Composition as specified in ASTM B209 and ASME SB209

Element	5005
Aluminum (Al)	97 to 99.5 %
Magnesium (Mg)	0.5 to 1.1 %
Iron (Fe)	0 to 0.7 %
Silicon (Si)	0 to 0.3 %
Zinc (Zn)	0 to 0.25 %
Copper (Cu)	0 to 0.2 %
Manganese (Mn)	0 to 0.2 %
Residuals	0 to 0.15 %
Chromium (Cr)	0 to 0.1 %

Physical Properties

Property	Data
Calomel Potential	-740 mV
Density	168 lb/ft^3
Electrical Conductivity	52 % IACS
Electrical Resistivity	1.504 µΩ-in
Melting Onset (Solidus)	1170 °F
Specific Heat Capacity	0.214 BTU/lb-°F
Thermal Conductivity	115 BTU/ft Hr °F
Thermal Diffusivity	882 ft^2/s
CTE (68-212°F)	13.1 µin/in-°F

Available Thicknesses

.080" .090" .125"

Standards

Typical Standards for Alloy 5005 aluminum
ASTM B209 ASME SB209