

ToughMet® 3 AT110 Alloy Temper Plate

ToughMet alloy is Materion's solution to your severe service material problems. By application of our proprietary process to implement the EquaCast® Microstructure, tailored alloying additions and spinodal hardening technology, we have engineered ToughMet alloy to provide attributes beyond those typically found in a high-strength copper alloy. These include:

- Exceptional resistance to corrosion and cavitation
- Outstanding lubricity and durability in demanding applications
- Highly uniform composition in all product forms
- Uniform microstructure in a variety of wrought shapes and sizes

Chemical Composition (Weight Percent)

Alloy	Nickel	Tin	Copper
ToughMet 3 Alloy	15	8	Balance

Typical Physical Properties

Elastic Modulus	Poisson's Ratio	Coefficient of Thermal Expansion (70-215°F / 20-100°C)	Density	Thermal Conductivity	Relative Magnetic Permeability
21 x 10 ⁶ psi 144 kN/mm ²	0.33	9.1 x 10 ⁻⁶ in/in/°F 16.4 x 10 ⁻⁶ m/m/°C	0.325 lb/in ³ 9.00 g/cm ³	22 Btu/hr/ft/°F 38 W/m/°C	≤ 1.001

Typical Minimum Mechanical Properties

0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Hardness	Fatigue Strength*	
(ksi)	(MPa)	(ksi)	(MPa)	(%)	(HRC)	(ksi)	(N/mm ²)
110	760	125	860	6	30	60	415

*Rotating beam fatigue strength at 10⁶ cycles.

Finishing Allowance

ToughMet® 3 AT110 alloy plate is provided with a rolled and heat-treated surface. When ordering, please add the following minimum finishing allowances to the thickness of the finish-machined parts.

Plate Thickness	Finishing Allowance
< 1" (<25.4 mm)	0.13" (3.3 mm)
1" - 2.99" (25.4 - 75.9 mm)	0.20" (5.1 mm)
≥ 3" (≥ 76 mm)	0.25" (6.4 mm)

Availability

Plate thicknesses range from ¼" to 4 ¾" (6.4 to 120.7 mm).

Typical mill width = 16" (406 mm).

For wider plate, consult your Materion Performance Alloys sales representative.

Industry Standards and Specifications

UNS# C72900, AMS 4595

Related Information

Additional technical information on ToughMet 3 AT110 alloy plate tube can be obtained by calling +1.800.375.4205. For availability, size capability and pricing, please visit the contact us page listed in the footer.

Disclaimer:

Only the buyer can determine the appropriateness of any processing practice, end-product or application. Materion does not make any warranty regarding its recommendations, the suitability of Materion's product, or its processing suggestions for buyer's end product, application or equipment.

The properties presented on this data sheet are for reference purposes only, intended only to initiate the material selection process. They do not constitute, nor are they intended to constitute, a material specification. Material will be produced to one of the applicable industry standards, if any, listed in the Industry Standards and Specification section.

Actual properties may vary by thickness and/or part number. Please contact your local sales engineer for detailed properties to be used in simulation.

Any properties marked as preliminary are subject to change at any time as the manufacturing process is further refined.