

Aluminum Nickel Bronze Tubes

Materion Performance Alloys' C95510 and C95520 are Aluminum-Nickel-Bronze alloys that combine high strength, ductility, and good abrasion resistance under severe loading conditions. These materials, specified as AMS4880 and AMS4881, respectively, are frequently used for very demanding aerospace applications, including, but not limited to: bushings, spherical and rod end bearings, rub pads, and wear strips. They are also commonly used for applications in the oil & gas and other durable goods markets.

Materion uses the EquaCast® process to produce C95510 and C95520. This process produces an extremely uniform, fine grained microstructure and excellent dispersion of alloying elements, providing improved product consistency, quality and machinability.

CHEMICAL COMPOSITION (weight percent)

Alloy	Aluminum	Nickel	Iron	Manganese	Zinc	Tin	Copper
C95510	9.7 – 10.9	4.5 – 5.5	2.0 – 3.5	1.5 max	0.3 max	0.2 max	78.0 min
C95520	10.5 – 11.5	4.2 – 6.0	4.0 – 5.5	1.5 max	0.3 max	0.25 max	74.5 min

TYPICAL PHYSICAL PROPERTIES

Elastic Modulus	Melting Point (Solidus)	Electrical Conductivity/ Resistivity	Density	Thermal Expansion Coefficient	Thermal Conductivity (25 °C)	Relative Magnetic Permeability
16,000 ksi 110 GPa	1900°F 1040°C	8% IACS 20 μΩ-cm	0.27 lb/in ³ 7.5 g/cm ³	9 × 10 ⁻⁶ in/in °F 16.0 × 10 ⁻⁶ m/m °C	24 BTU/ft hr °F 42 W/m K	1.1 – 1.2

Minimum Mechanical Properties of AMS4880 and AMS4881 Continuous Castings

Product	TFT Size*		Tensile Strength		Yield Strength		Elongation (%)
	(in)	(mm)	(ksi)	(MPa)	(ksi)	(MPa)	
C95510 (AMS4880)	Diameters 2.0 - 3.9	Diameters 50.8 - 101	105.0	724	62.5	431	9
	4.0 - 16.0	102 - 432	95.0	655	56.0	386	
C95520 (AMS4881)	Max Section Thickness 2	Max Section Thickness 50.8	125	862	90.0	621	2

*To-Finish-To (TFT) size is the customer-finished component size. Additional stock allowance for machining will be guaranteed in accordance with ASTM B505.

Properties specified for the quench hardened and temper annealed condition.

Contact us for length, OD/ID combinations and shape options. OD sizes up to 16 in (406 mm) with wall thickness nominally 10-20% of OD are available.

Material Certificates supplied.

For technical information, contact us at 800-375-4205 or (+1) 216-692-3108.

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