



Quick Picks: A Guide to Glenair's Most Popular Materials and Finishes



Electroless Nickel

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +200°C

Glenair Code **M, ME**

RoHS COMPLIANT
Aluminum plated with electroless nickel offers excellent conductivity, wear resistance, and adequate corrosion resistance. Typically specified on electrical connectors and accessories used in avionics boxes, exoatmospheric equipment, and missiles, electroless nickel is a good choice when exposure to marine or corrosive atmospheres is not a primary concern. The plating process is purely chemical, and once started, is autocatalytic (it runs by itself).



Marine Bronze

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +200°C

Glenair Code **AB**

RoHS COMPLIANT
Marine bronze, an alloy of bronze, aluminum and nickel, is more resistant to the corrosive effects of seawater than ferrous alloys. Used on Glenair's GeoMarine connector coupling nuts, marine bronze is unplated and develops an aluminum oxide protective layer when exposed to air. Marine bronze connectors and accessories are found in shipboard and offshore drilling applications.



Black Zinc Nickel

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C

Glenair Code **ZR**

RoHS COMPLIANT
RoHS-compliant black zinc-nickel is approved for MIL-DTL-38999, AS85049 and other major military specifications as a replacement for cadmium and hexavalent chromium platings. The non-reflective finish and good conductivity make the Glenair ZR finish a leading choice for cadmium-free tactical systems. Corrosion resistance is comparable to cadmium, and the ZR finish is backward-compatible with Cd-plated connectors and accessories.



Zinc-Nickel

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C

Glenair Code **ZN, ZNU**

Not Compliant
Recently added to MIL-DTL-38999 and MIL-DTL-83513, zinc-nickel plated aluminum has become a cost-effective alternative to cadmium. Available with olive drab or black chromate conversion coatings, zinc-nickel plated aluminum is commonly found on soldier systems and military airframe applications.



Cadmium

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C

Glenair Code **NE, JF**

Not Compliant
Cadmium plated aluminum has been the unchallenged workhorse of the defense/aerospace industry. Offering up to 1000 hours of salt spray protection when deposited over electroless nickel, cadmium is highly conductive, and provides good lubricity and resistance to galling. As plated, cadmium has a silvery appearance. A subsequent chromic acid passivation bath creates a chromate topcoat over the cadmium, enhancing corrosion protection. Olive drab chromate is widely used, followed by gold chromate and clear chromate.



Stainless Steel

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +200°C

Glenair Code **Z1, ZL, ZW**

RoHS COMPLIANT
Stainless steel offers unbeatable strength and protection from environmental stress if durability and corrosion resistance are more important than cost and weight. Typically found on aircraft engines, landing gear, geophysical equipment, armored vehicles and marine applications, passivated stainless steel is widely specified in throughout the interconnect industry. Also offered with nickel and cadmium plating for improved conductivity, stainless steel is an obvious alternative to cadmium if cost and weight are not an issue.

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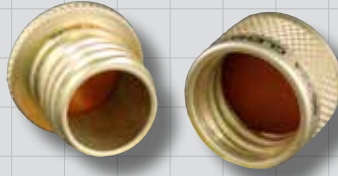


Black Anodize

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C
Glenair Code **C**

Black anodized aluminum is a popular finish for electrical connectors and accessories. Typically employed when conductivity is not required, black anodized aluminum offers a modicum of corrosion protection and is relatively inexpensive. Anodizing is an electrolytic process that creates aluminum oxide films by oxidizing the base metal. The resulting coating is much harder and denser than natural oxidation. The parts are immersed in a sulfuric acid solution at room temperature. After anodizing, the parts are dyed black.



Chem Film

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C
Glenair Code **E**

Chem Film is Glenair's standard chem film finish. Plated IAW MIL-DTL-5541, Class 3, Chem Film is a relatively inexpensive, moderately durable barrier plating. This chemical conversion coating is intended for use as a corrosion preventative film for electrical and electronic applications where lower resistant contacts, relative to Class 1A coatings, and anodic coatings in accordance with Mil-A-8625, are required.

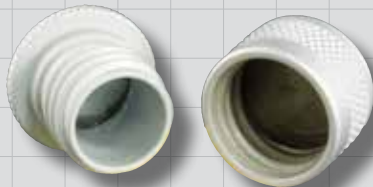


Zinc-Cobalt

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C
Glenair Code **UC, UCR, ZC, ZCR**

Zinc-cobalt with olive drab chromate topcoat fills the need for a RoHS compliant conductive NF olive drab finish for military vehicles, robots and other land system equipment.



AlumiPlateSM

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C
Glenair Code **AL, XAL**

AlumiPlate provides excellent conductivity and corrosion resistance. 99.99% pure aluminum is electrolytically deposited onto aluminum or composite in a specialized water-free process, followed by a trivalent chromate conversion coating. AlumiPlate has been approved by Boeing and Lockheed as a replacement for cadmium. AlumiPlate has been added to MIL-DTL-38999 and MIL-DTL-83513. Threaded parts require dry lube to prevent galling. AlumiPlate is a service mark of AlumiPlate Incorporated, Minneapolis, Minnesota.

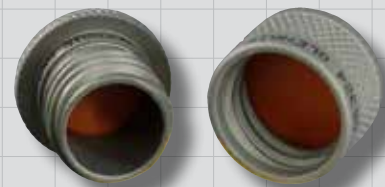


Nickel-PTFE

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +175°C
Glenair Code **MT, ZMT**

Now approved for MIL-DTL-38999 and MIL-DTL-83513, Glenair's 1000 Hour Grey™ meets the need for a cadmium replacement with excellent conductivity, wear resistance and corrosion protection. This extremely durable finish is gun-metal gray. A proprietary preliminary undercoat is followed with a composite coating of electroless nickel phosphorus and polytetra-fluoroethylene (PTFE). An organic topcoat provides sealing and added resistance to SO2 salt fog. Ni-PTFE is approved for the Joint Strike Fighter and offers extremely good lubricity.



Hardcoat Anodize

Cost	\$	\$	\$	\$	\$
Conductivity	+	+	+	+	+
Corrosion Resistance	⌚	⌚	⌚	⌚	⌚

-65 to +200°C
Glenair Code **G2**

Hardcoat anodized aluminum offers greater wear resistance and better corrosion resistance compared to conventional anodizing. Typically employed when conductivity is not required, hardcoat aluminum offers good corrosion protection for marine and tactical applications. The resulting finish is a matte greenish-gray color. Hardcoat anodizing is an electrolytic process that creates aluminum oxide films by oxidizing the base metal in a sulfuric acid solution. The parts are immersed in a sulfuric acid solution at cold temperature. After anodizing, the parts can be dyed black (code GB).