Amphenol Aerospace

ROHS COMPLIANT PLATINGS

NON-HAZARDOUS ALTERNATIVE FINISHES

PDS - 218-6

Amphenol Aerospace offers Durmalon and Black Zinc Nickel as RoHS compliant alternatives to Cadmium.

DURMALON

Durmalon is Amphenol's Answer to EU RoHS/ELV/Cadmium Free Restrictions. Commercial, industrial & military markets are rapidly moving away from restricted materials such as Cadmium (Cd) & Hexavalent Chromium (Cr(VI)). Both of these restricted materials are toxic and are known carcinogens. Amphenol is offering an alternative finish that complies with all customer requirements tied to these specifications.

MIL-DTL-38999, Rev L has established new service classes for alternative finishes addressing these requirements for Cadmium replacement. Amphenol is using this and European Union Directive 2002/95/EC RoHS (Regulation of Hazardous Substances) as a guide to qualification for all domestic, global, commercial, industrial, & military specifications requiring the reduction or elimination of these restricted materials.

Amphenol has qualified Durmalon, with internal part number coding "DT" finish, which meets or exceeds the 38999 designated class "T" finish, Nickel Fluorocarbon Polymer. Durmalon is also EU RoHS compliant and is Cadmium free, Lead free ,and Hexavalent Chromium free.

We also offer additional platings such as "DX", (Durmalon, heavy duty final plate) to support JSF, F-35 program. The DX plating is intended to meet higher corrosion Sulfur Dioxide (SO2)/salt fog requirements of JSF.

Cadmium has been applied to numerous components of land, sea and air weapon systems and NASA systems for many years as it provides sacrificial corrosion protection and excellent lubricity for threaded applications.

The Defense Logistics Agency (DLA) has added the following cadmium alternative finishes to MIL-DTL-38999, Rev L (and other connector specs):

- Nickel Fluorocarbon Polymer
- Zinc-Nickel

Durmalon, like Olive-Drab Cadmium plating (Class W), meets 500 hours of dynamic salt spray, combined with 500 mating cycles and meets specified millivolt drop shell-to-shell conductivity. Durmalon also meets a 392 °F (200° C) temperature rating. Durmalon has been proven to meet this requirement as well as Potassium Formate-Deicer fluid testing performed by Boeing.

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Applications

Durmalon combines the unique lubrication and anti-wetting properties of PTFE with corrosion resistance, high conductivity, and EU RoHS compliance in a nonreflective finish. Durmalon can be used as a drop-in replacement for Cadmium and is compatible with other platings.

Testing

Amphenol Aerospace has performed extensive testing on numerous alternative platings including Durmalon. For specific applications please contact Amphenol Aerospace.

BLACK ZINC NICKEL

Black Zinc Nickel is Amphenol's 2nd RoHS Compliant Plating Alternative to Cadmium Amphenol is now offering a new RoHS compliant alternative to Cadmium. Black Zinc Nickel is a non-reflective and conductive black finish approved for 500 hrs salt spray making it an excellent choice for harsh environments. Black Zinc Nickel has been qualified by the DLA, with internal part number coding "DZ" finish, which meets or exceeds the 38999 designated class "Z" finish. Black Zinc Nickel is compatible with other platings and available on a wide variety of connectors and accessories including all MIL-DTL-38999 Series III connectors.

Applications

Black Zinc Nickel is typically used on applications for commercial aerospace and military defense, who are now moving away from toxic Cadmium to more environmentally friendly options.

Testing

Amphenol Aerospace has performed extensive testing on numerous alternative platings including Black Zinc Nickel. For specific applications please contact Amphenol Aerospace.

Requirements	Cadmium	Durmalon™	Black Zinc Nickel
Coupling Torque Post 500 hr. salt	■	■	■
Shell to Shell Conductivity <2.5 millivolts	■	■	■
Cycles of Durability 500 mates	■	■	■
Salt Spray Dynamic 500 hours	■	■	■
Temperature Rating 175° C	■	■	■
Non-Reflective	■	■	■
EU RoHS/ELV Compliant*		■	■
Non-Magnetic	■	■	■
Available in Composite	■	■	■
De-icing Fluid**		■	■

Additional Requirements

- Corrosion Resistant (Salt Spray Referenced)
- EMI Shielding - 50 db @ 10 GHz spec Min
- Backwards compatible with Cadmium

**Meets EU RoHS/ELV maximum concentration values (MCV) of 1000 ppm (0.1% w/w) or (0.01% w/w) per homogenous material.*
*** Potassium Formate/Acetate based de-icing fluids.*

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