Amphenol®

DATA SHEET

Black Zinc Nickel Plating Finish

RoHS Compliant ✓

Amphenol Ltd is pleased to announce the availability of a new RoHS compliant plating alternative to Cadmium. Black Zinc Nickel plating is now available on a wide variety of connectors and accessories including proprietary Mil-DTL-38999 and Mil-C-26482. This conductive and non-reflective black finish is approved for 500hrs salt spray endurance and is fast becoming the new Defence Industry standard.

Until recently, Cadmium plating has been the industry preference for aeronautical and defence applications, widely selected for its environmental and electrical performance. However, the latest ecological and sustainability regulations now seek to reduce or eliminate the use of Cadmium.

In response to industry demands, Amphenol Ltd has designed and installed a new processing line at their Whitstable, UK facility to enable plating with Black Zinc Nickel; a conductive and environmentally sound surface treatment. The salt spray performance of Black Zinc Nickel plating makes it an excellent choice for applications in highly demanding environments.

Key Features

- **Environmental** RoHS compliant, Cadmium free
- **Salt Spray** 500hrs endurance with shell-to-shell continuity <5mΩ
- **Shell-to-Shell Continuity** Less than <2.5mΩ initially
- **Mechanical** 500 mating cycles, non magnetic
- **Temperature Range** -65° to +175°C in accordance with Mil-DTL-38999
- **Compatibility** No significant galvanic reaction with cadmium, zinc cobalt or electroless nickel plated parts
- **Availability** Deployed on standard connector ranges such as Mil-DTL-38999, Mil-C-26482, Rhino Power

Amphenol Ltd Thanet Way Whitstable Kent CT5 3JF Tel:+44 (0)1227 773200 info@amphenol.co.uk www.amphenol.co.uk

Black Zinc Nickel Plating Finish

Electrically, the conductivity of Black Zinc Nickel plating ensures shell-to-shell continuity of less than 2.5mΩ and less than 5mΩ after 500hrs salt spray chamber time. This superior electrical performance ensures high levels of EMC screening can be maintained within sensitive systems in demanding situations.

Amphenol Ltd has tested their Black Zinc Nickel plating to show no significant galvanic reaction when mated to alternatively plated legacy product such as Cadmium, Zinc Cobalt or Electroless Nickel.

Plating Facility

Amphenol Ltd has been plating connectors and interconnect components at their manufacturing site in Whitstable, Kent for over 40 years. Expanding on their vast experience and knowledge of materials and plating finishes, Amphenol Ltd has recently invested in a new Black Zinc Nickel plating line, set up in accordance with best practices meeting environmental legislation and providing superior plated parts.

Amphenol Ltd now has the capability to plate connectors and components of various base materials including Aluminium, Mild Steel, Stainless Steel, Brass and Copper. The extensive variety of plating finishes carried out on-site at Amphenol Ltd includes Black Zinc Nickel, Cadmium, Zinc Cobalt, Nickel, Electroless Nickel, Tin, Silver, Black Silver and Gold. A full and diverse range application methods are offered including jigged parts, and rotating and vibrating barrelling of parts as well as selective surface plating.

Independent Test Facility

Amphenol Ltd benefits from a BSI Approved fully independent on-site test house with facilities including a salt spray testing chamber to carry out testing in accordance with EIA-364-26 up to 2000hrs. The independent test house facility has specialist equipment capable of carrying out a broad selection of test procedures including mechanical, electrical, electronic and environmental as well as facilities for plating solution analysis and plating examination.

Design Engineering Team

Amphenol Ltd's innovative design team is on hand to provide product knowledge and advice in selecting the most appropriate plating finish for a particular application. With an in-house Chemistry department equipped with a wealth of detailed and plating specific experience, Amphenol Ltd is confident in offering the right solution for all application requirements.

Quality Department

Amphenol Ltd's experienced quality team has access to the latest state-of-the-art analytical technology including x-ray fluorescence equipment for the determination of plated metal thickness and zinc alloy analysis, an atomic absorption spectrophotometer. The quality team is also responsible for optimising process control within the plating department and maximising efficiency. Amphenol Ltd has a commitment to quality and environmental responsibility throughout all aspects of the business.

Accreditations

BSEN9100:200(3) (AS9100), ISO9001:2008, BS9000 Manufacturing & Test House, CECC Manufacturing & Test House, DESC Mil-C-790, Mil Test House (MIL STD 202/1344)

Typical Applications

- Next Generation Harsh Environment Vehicles
- Electric Drive vehicles
- Aerospace
- Communications Equipment
- Mass Transit
- Automotive
- Power generation
- Metering Equipment

November 2012