

DATA SHEET

MIL-DTL-38999 III RoHS Connectors

BLACK ZINC NICKEL

Amphenol Ltd is pleased to announce that its Black Zinc Nickel plating finish is now qualified to MIL-DTL-38999 Series III Class-Z. This RoHS compliant 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 market 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.

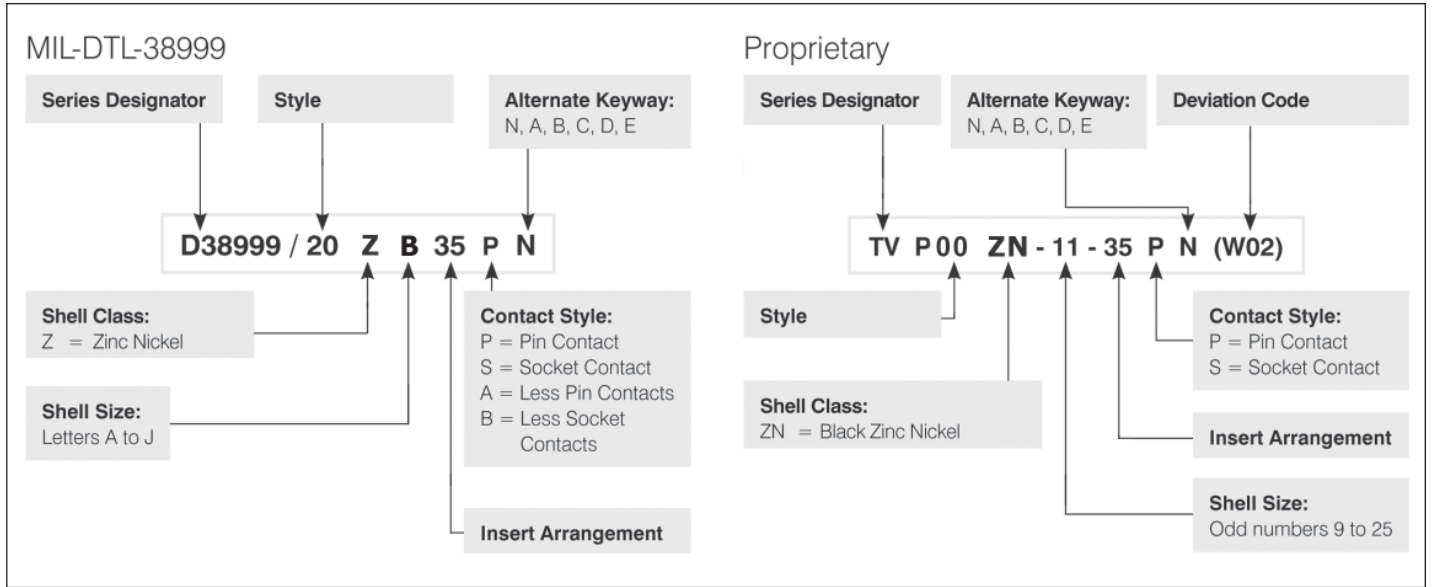
Black Zinc Nickel has the same thickness as Cadmium so maintains the mechanical integrity of the proven Amphenol connector designs and therefore does not require new drawings, tooling or gauges. Amphenol also offers a complementary range of caps and backshells with Black Zinc Nickel plating.

Key Features

- **Environmental** RoHS compliant, Cadmium free
- **Salt Spray** 500hrs endurance with shell-to-shell continuity $<2.5\text{m}\Omega$
- **Shell-to-Shell Continuity** Less than $<2.5\text{m}\Omega$ initially
- **Mechanical** 500 mating cycles, non magnetic
- **Temperature Range** -65° to $+175^\circ\text{C}$ in accordance with Mil-DTL-38999
- **Compatibility** No significant galvanic reaction with Cadmium, Zinc Cobalt or Electroless Nickel plated parts

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How To Order



Performance Comparison

Requirement	Black Zinc Nickel (ZnNi)	Cadmium (Cd)	Zinc Cobalt (ZnCo)	Electroless Nickel (Ni)
Temperature	-65° / +175°C	-65° / +175°C	-65° / +175°C	-65° / +200°C
Salt Spray	500 Hours	500 Hours	48 Hours	48 Hours
Conductivity	<2.5mV	<2.5mV	<2.5mV	<1.0mV
Durability	500 Cycles	500 Cycles	500 Cycles	500 Cycles
RoHS	✓	✗	✓	✓
MIL-DTL-38999 Class	Z	W	N/A	F
QPL	✓	✓	N/A	✓
Compatibility	Cd, ZnCo, Ni	ZnNi, ZnCo	ZnNi, Cd	ZnNi