

INTRODUCTION

Connectors for
**DEFENCE • AEROSPACE •
MARINE • MOTORSPORT •
INDUSTRIAL**

Innovative Connector Solutions

Niche Connector Design Services

We specialise in providing harsh environment connectors and by working closely with our customers, bring value added benefits to the partnership by presenting totally niche designs or customisation of existing MIL-Spec and high performance products.

Our service helps to free our customers up, by taking the lead in the provision of design driven solutions to their challenges whilst paying great attention to the physical detail, durability, chemical resistance and hermetic sealing capability as well as addressing any temperature, vibration and EMI envelopes.

Hermetic Pressurised & severe conditions.

Environmental Harsh & demanding Applications.

Filter EMI & EMP protection.

MIL Series Connectors

In addition working closely with suppliers and manufacturers worldwide we offer a comprehensive range of other high performance connectors and associated products for harsh environments. These include but not limited to: MIL-DTL-38999, MIL-DTL-26482, MIL-DTL-5015, Industrial Environmental

Data and Commercial Connectors

Also included on these pages is a brief overview of the specialist data connectors and products designed for tough industrial applications that we can offer from our broad range of partners worldwide



Material and Finishes

Options

Overview of Common Variations

**Black is the Latest Green**

Military connectors are getting a 'green' make-over with an eco-friendly, cadmium-free black (non-reflective) plating. Having eliminated lead from virtually all electronic components, the directive on the Restriction of Hazardous Substances (RoHS) focusses attention on cadmium. Unlike lead, however, where defence, aeronautical and other critical equipment was exempt, the Ministry of Defence is set to phase out cadmium plating on military connectors. It will be replaced with a new, and more environmentally-friendly, black zinc nickel plating.

Material and Plating Attributes

Plating Finish	Cadmium	Electroless Nickel	Black Zinc Nickel	Black Zinc Cobalt	Green Zinc Cobalt
Colour	Olive Drab	Shiny Silver	Black	Black	Dark Green
Shell Continuity	2.5 mΩ	1 mΩ	2.5 mΩ	2.5 mΩ	2.5 mΩ
Durability	500 cycles	500 cycles	500 cycles	500 cycles	500 cycles
Temp. Range	-65°C to +175°C	-65°C to +200°C	-65°C to +175°C	-55°C to +125°C	-55°C to +125°C
EMI Shielding	>90dB @ 100 MHz >50dB @ 10GHz	>90dB @ 100 MHz >65dB @ 10GHz	>90dB @ 100 MHz >50dB @ 10GHz	>80dB @ 100 MHz >45dB @ 10GHz	>80dB @ 100 MHz >45dB @ 10GHz
Shell Conductivity	2.5mV max	1.0mV max	2.5mV max	5.0mV max	5.0mV max
Salt Spray	500 hours	48 hours	500 hours	48 hours	96 hours
RoHS Compliant	NO	YES	YES	YES	NO

Un-Plated Material	Nickel Alu Bronze	Stainless Steel	Composite
Salt Spray	500 hours	2,000 hours	2,000 hours

Up to recently, Cadmium was the most widely used surface coating and industry preference for connectors and accessories complying with standard MIL-DTL-38999 in defence and aeronautical applications. To replace it with more environmentally friendly solutions a number of manufacturers have now industrialised and qualified their Electrolytic Zinc Nickel plating process to reduce or eliminate the use of Cadmium.

IS-Rayfast are pleased to offer a range of products with RoHS compliant plating alternative to Cadmium. Black Zinc Nickel plating is now available on a wide range of connectors and accessories including proprietary MIL-DTL-38999 and MIL-DTL-26482. This

conductive and non reflective black finish is approved for 500hrs salt spray endurance and is fast becoming the defence industry standard.

Black Zinc Nickel plating is compatible with other platings, without corrosion or electrochemical erosion with Cadmium, Zinc Cobalt or Electroless Nickel plated parts.

Electrical compatibility of Zinc Nickel with Cadmium

Electrical potential of Zinc Nickel and Cadmium are very similar which removes the risk of galvanic corrosion and defects after 500 hours salt spray.