MOSS METAL FINISHING

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Zinc Plating

Zinc plating is the process of electrodepositing Zinc onto Mild Steel or Iron parts. The main benefits of Zinc Plating are that it offers excellent corrosion resistance as it is a sacrificial coating in that the zinc coating slowly corrodes over time protecting the steel/iron part underneath. The other main benefit is that the coating itself improves the look of the base metal as clear zinc plating has a bright silver/blue appearance.

Our standard Zinc thickness is 5-8µm but we can apply larger deposits should it be required.

Passivation

For better corrosion resistance the zinc layer is passivated, we offer 3 types of passivation as follows;

Clear (Blue) passivate (Trivalent Chromium) - Mainly used for machine parts and washers, screws, fasteners, good for decorative purposes as it can be finished to a bright shiny silver/blue finish. Typically offers 24 hours to white rust (corrosion of zinc layer)

Yellow Passivate (Trivalent Chromium) - Yellow passivate offers a better corrosion resistance than Clear or Black and is more often used for motor parts and general parts to be used outdoors, it has an iridescent colour. Typically offers 150 hours to white rust (corrosion of zinc layer)

Black Passivate (Trivalent Chromium) - Black passivate offers great corrosion resistance and is more often used for decorative purposes it has a black colour which occasionally can have a slight iridescence to it. Typically offers 24 hours to white rust (corrosion of zinc layer)

Topcoat

In some cases a top coat sealer is applied we offer a clear organic topcoat that further enhances corrosion resistance. It is typically applied to clear or black passivate to increase the corrosion resistance to over 150 hours to white rust to match yellow passivate in performance. The topcoat can be applied to any of our passivates and its clear appearance maintains to colour of the passivate applied.

Materials

The most common material substrates for zinc are carbon steel, unalloyed steel, low alloyed steel and cast iron

De-Embrittlement

By applying a heat treatment after zinc plating hardened steels can also be zinc plated. The heat treatment is necessary to avoid hydrogen embrittlement.

Useful Information

To get the best results for zinc plating the condition of the material is very important. Clean rust/scale free metal allows for the most cost effective best finish. Hot rolled steel requires heavy pickling and as such is a more expensive process. With used motor parts to ensure the best finish these parts should be bead blasted before zinc plating to ensure the surface is of the best condition and is free of any paint.

The corrosion resistance figures given relate to white rust as they are the times it typically takes the passivate /topcoat layer to be corroded. If you require a part to meet a length of time to red rust this includes the time it takes the zinc layer to corrode also and will determine the thickness of zinc required.