# MIO Coatings – What Types Are There? 5.2.2

## What Types of MIO Products are there?

There are several different resin types used in the formulation of micaceous iron oxide (MIO) coatings. These include, but are not limited to, polyurethanes, epoxies, alkyd enamels, chlorinated rubbers, and acrylics.

Lady Eleanor Schonell Bridge, Brisbane
1 x Zincanode 402 @ 75 microns
2 x Ferreko No 3 @ 100 microns per coat

### Polyurethane MIO Coatings

**Polyurethane MIO Coatings** have outstanding UV resistance and very good water resistance, and therefore are ideal **topcoats** for exterior and interior use. Polyurethanes exhibit:

- *Excellent UV stability and resistance to chalking or crazing*
- *Excellent resistance to discolouration (yellowing)*
- *Very high abrasion resistance*
- *Very long term durable, yet relatively easy to overcoat and maintain.*

**Weathermax® HBR MIO** is a polyurethane MIO coating most suitable for all external "high traffic" areas, as it has a highly durable semi gloss finish that is very marr-resistant and is resistant to exterior exposure such as UV degradation and extremes of weather. **Weathermax® HBR MIO** is readily available in Mid Grey.

### Epoxy MIO Coatings

**Epoxy MIO Coatings**, due to the epoxy resin content, make excellent primers, intermediate coats and **interior** topcoats. Epoxies exhibit:

- *better adhesion to substrate (epoxy resin is an excellent GLUE)*
- *better water impermeability (epoxy resin is highly water-impermeable)*
- *higher surface profile for improved adhesion of topcoat (MIO pigment provides a good key)*

Monash Interchange Victoria
1 x Zincanode 402 @ 75 microns
2 x Ferreko no 3 @ 100 microns per coat

**Durebild® STE MIO** is an epoxy MIO coating most suitable for internal "high traffic" areas, as it has a highly durable semi gloss finish that is very marr-resistant. **Durebild® STE MIO** is available in Natural Grey and Mid Grey.

**Ferreko® No. 3 MIO** is an epoxy MIO coating ideal for external steelwork and concrete. The high level of MIO pigment in the formulation offers superior exterior durability and gives the paint a flat to low sheen finish (depending on spray technique). **Ferreko® No. 3 MIO** is available in Natural Grey and Mid Grey.

### Alkyd Enamel MIO Coatings

**Alkyd Enamel MIO Coatings**, being single pack, are convenient to use, and are particularly suitable for minor, miscellaneous steelwork (except directly onto zinc-coated steel due to the alkyd resin). The MIO pigment offers superior protection compared with other alkyd enamels.

**Ferrodor® 810** is a popular single-pack MIO finish used extensively on tanks and other steel structures in rural, dry and mild environments. The high level of MIO pigment in the formulation gives the paint a flat finish. **Ferrodor® 810** is available in Natural Grey and St Enoch Grey (a light silver grey).

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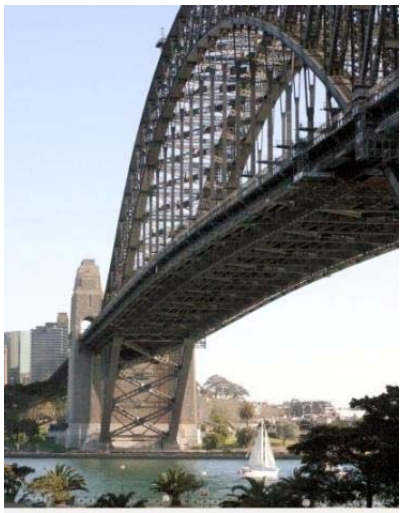
**Metalshield® MIO** is also a single pack MIO finish used for minor steelwork in sheltered and internal spaces. The high resin content of the product (lower MIO pigment level) produces a product with a **gloss finish**, making it marr-resistant and thus suitable for areas subject to frequent contact. **Metalshield MIO** is available in Natural Grey.

## Chlorinated Rubber MIO Coatings

**Chlorinated Rubber MIO Coatings** have superior water barrier properties to both single pack and two pack resin coatings. The chlorinated rubber resin forms an impermeable barrier to both liquid water (both fresh and salt water) and water vapour, making chlorinated rubber MIO coatings particularly suited to coastal structures such as bridges, the Sydney Harbour Bridge being a good example.



Sydney Harbour Bridge
Ferreko No 6 @ 100 microns per coat

The relatively low heat resistance, and the higher solvent sensitivity compared with other MIO types, can limit the use of chlorinated rubber MIO coatings somewhat to areas not subject to slash or spillage of solvents. Due to the thermoplastic nature of chlorinated rubber coatings, on-site spray application is preferred.

**Ferreko® No. 6 MIO** is a chlorinated rubber MIO coating ideal for steelwork in severe coastal environments. The chlorinated rubber resin in the formulation offers vastly superior water barrier properties. The flat finish limits it to areas not subject to direct contact. **Ferreko® No. 6 MIO** is available made-to-order in Natural Grey and Mid Grey.

## Water-Borne Acrylic MIO Coatings

**Water-borne acrylic MIO Coatings**, have the advantage of being relatively low in odour and easy to wash up. As with all MIO coatings, the MIO pigment offers superior protection compared to moisture ingress. The acrylic latex resists UV degradation and chalking, dries quickly and is easy to recoat.

**Ferreko® No. 5 MIO** is a single pack, waterborne MIO finish used extensively on tanks and other steel structures in rural, dry and mild environments. The MIO pigment in the formulation gives the paint a dull, flat finish. **Ferreko® No. 5 MIO** is available as a made-to-order product in Mid Grey and Structural Green.

## CONCLUSION

MIO coatings offer excellent corrosion protection and long-term durability. The use of the MIO coating with the right resin system must be carefully considered in relation to the environment and expected service life. Your Protective Coatings Specification Consultant will be able to advise you on the best option for your particular project.

For more information on MIO coatings, please refer to Dulux Protective Coatings Tech Note 5.2.1.

For more information and specification advice on Dulux Protective Coatings for specific projects, please contact the Dulux Protective Coatings Technical Consultant in your state.