Zincshield®

Zinc Rich Epoxy Powder Coating

Product Code: 990 Line

Specification met:

Description

Zincshield® is a zinc rich epoxy based thermosetting powder coating designed to inhibit rust and adhesion loss on ferrous metals. Zincshield® has been designed as an undercoat for powder topcoats such as the Alphatec® range, Dupol® FPG and Duralloy®. It can also be used as a functional topcoat where appropriate.

Features	*Benefits*
Excellent corrosion resistance	Sacrificial layer increasing service life
Film integrity	Long intact life of coating
Very good surface hardness	Hard wearing / serviceable finish
No solvent or emissions	Less waste and pollution to the environment
Very good flow	Excellent filler for topcoats
Good chemical resistance	Excellent corrosion protection

Uses

Zincshield® has been specifically designed for coatings over ferrous metals as a sacrificial coating. Suggestions for use include ironwork, street and garden furniture, gas cylinders and tanks, agricultural machinery, transport (trailers), valves, and transformers.

Performance Guide

Weather	Zincshield® is not recommended for exterior use without a topcoat. It contains an epoxy component which will chalk on exterior exposure.	**Salt Spray**	Shot blasted mild steel to Class 2.5 (2000 hours ASTM B117)
Heat	Excellent resistance to 120°C continuous service conditions.	**Humidity**	Excellent resistance to 38°C/100% humidity for 1000 hours On blasted steel.
Acid	Resistant to spills of dilute acid.	**Abrasion**	Excellent resistance to abrasion.
Alkali	Resistant to spills of dilute alkali.	**Pencil Hardness**	Min 3H
		Knoops Hardness	Min 18
Flexibility	Pass 80 inch/lb	**Cross Hatch Adhesion**	No removal

Note: Performance will be maximised by following the recommended coating system – see below

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Chemical Resistance

Ethyl Acetate	Softens after prolonged contact	**White Spirits**	Resistant
Ethanol	Resistant	**Xylene**	Slight softening/limit contact
Pine Oil	Slight softening (360hrs)	**Liquid Detergent**	Dilute solution no effect (400hrs)
Diesel	No effect (400hrs)	**Methyl Ethyl Ketone**	Softens after prolonged contact
96 Octane Petrol	No effect (400hrs)		

Product Guide

Colour	Grey	**Specific gravity**	2.2 – 2.3
Gloss Level	40% at 60°	**Shelf life**	6 months when stored below 25°C/dry conditions

Application Data

Application Method	Electrostatic spray.	
Clean Up	Dust or vacuum loose powder. Avoid use of compressed air.	
Cure Schedule	Refer cure schedule section of application guide.	
Cured Film Thickness	Recommended:	80 µm
	Range:	50 – 120 µm

Note: Zincshield® has a very high specific density. Additional care should be taken when handling the powder to ensure correct lifting techniques are followed.

Typical coverage rate:

A covering rate of 4 - 5 m^2/kg corresponds to 80 µm cured film thickness assuming no loss. Practical spreading rates will vary due to such factors as method and conditions of application and surface profile and texture.

Application Guide

To maximise the corrosion inhibition potential of Zincshield®

Surface Preparation	• Surfaces should be degreased and free from any oxides, mill scale, greases and lubricants for optimal performance. • Substrates should be grit blasted with angular grit to SA 2.5 finish. • To avoid "flash rusting", ferrous metal should be pre-treated immediately with Zinc Phosphate or Iron Phosphate (refer BS6497 and/or AS/NZ4506).
Zincshield® Application	• For fluidised bed, ensure uniform fluidisation of powder. Fluidised powder should resemble "simmering liquid". Aged or compacted powder may require pre-conditioning for several minutes to fluidise evenly. Zincshield® will require the fluidising air pressure to be increased from that of standard powder. • For box feeders, ensure probe is fully inserted in powder and operated as per manufacturer's recommendations. As Zincshield® has a higher than average specific gravity, box feeders will need to be tested to make sure an adequate transfer of powder can be achieved. • Apply one coat of Zincshield® by electrostatic spray at an average film build of 80 µm.

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Curing	It is recommended that Zincshield® be top coated within 12 hours due to a possible moisture uptake of the coating. **Assuming top coat applied within 12 hours** • Partially cure for 3 – 5 minutes at 120-150°C metal temperature. This partial cure is referred to as a green cure. • Green cured metal is prone to chipping/cracking if not handled with care. Ensure green cured metal is protected from mechanical damage caused by unloading/stacking. • Use top coat cure schedule to complete cure of Zincshield®. **Assuming top coat applied after 12 hours** • Provide full cure for 10 minutes at 200°C metal temperature. Avoid over cure as this will inhibit intercoat adhesion with top coat. Refer note below for further details. • Store in clean, dry environment until the next stage. The condition of storage between coats has direct effect on adhesion and a consequence on the degree of cleaning before top coating. Avoid UV exposure of primed metal. **Assuming no top coat to be applied** • Provide full cure for 10 minutes at 200°C metal temperature.
Top Coating	• Depending on the interval between priming and re-coating, and the extent of cure, the Zincshield® surface may need a light sand and solvent clean to remove build up of deposits. Suitable solvents include: methylated spirits or Prepsol. • Apply an exterior durable top coat such as Duralloy® or Duratec® FPG at the recommended film build and cure as normal ie. 10 minutes at 200°C metal temperature. • Green cured metal should not be over coated with ripple, textured or other surface effect finishes as continued flow of the Zincshield® will impair pattern creation or formation.
Testing	• Cure testing is only relevant if the primer is expected to be used as a single coat; or if a fully cured top coat has been applied. Test for cure of the coating by contact with a drop of solvent (available from Orica Camel Powder Coatings) for 30 seconds. Surface should be wiped dry. Only slight surface softening should occur. • Check adhesion with a cross cut method as described in AS4506.

Care should be taken to ensure proper cure is achieved, whilst under cure will reduce the corrosion resistance and mechanical properties, over cure may impair the adhesion of subsequent coats. Refer Precautions and Limitations.

Care and Maintenance

As a general rule, cleaning of externally located powder coating surfaces must take place every six months. Where salts/pollutants are more prevalent such as seaside and industrial areas, a cleaning program should be carried out more frequently.

THREE STEPS TO CLEANING POWDER COATED SURFACES

1. Remove loose deposits with a wet sponge (avoid scratching the surface by dry dusting).
2. Using a soft clean cloth and a mild detergent in warm water, clean the powder coating to remove dust, salt or other deposits.
3. Always rinse after cleaning with fresh water to remove any remaining detergent.

WARNING: In some cases, strong solvents recommended for thinning various types of paints and also for cleaning up mastics/sealants are harmful to the extended life of the powder coated surface. These solvents should not be used for cleaning purposes. If paint splashes or sealants/mastics need to be removed then the following solvents can be used safely: Methylated Spirits, White Spirits, Ethyl Alcohol, Isopropanol.

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Health and Safety

The MSDS is an integral part of using this product as it contains information on the potential health effect of exposure, personal protective equipment needed and other relevant SH&E information.

For detailed information, refer to product label and the current Chemical Data Sheet available through Sales and Customer Service Offices.

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Precautions and Limitations

- As a result of possible wide application variations and stoving conditions, some products and colours may show variation between Orica Camel Powder Coatings prepared samples and production applied material. Therefore, it is the applicator and/or their customer's responsibility to ensure the product conforms to their requirements.
- For optimum corrosion performance ensure recommended dry film thickness is obtained.
- Should not be used in acidic environments
- Not recommended for components which are exposed to constant temperatures exceeding 120°C.
- Severe over baking may result in intercoat adhesion problems. For optimal intercoat adhesion refer the cure details in the application section of this data sheet.
- Please refer to **all Notes** as they are important to the overall finish of Zincshield®

Transport and Storage

Sizes:	10 kg	**Flashpoint:**	N/A
Weight:	10 kg	**UN:**	N/A
Dangerous Goods Class:	N/A	**Package Group:**	N/A
Shipment Name:	Not dangerous goods. No special transport requirements.		

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