DUREZINC™ i90

High Performance Solvent Borne Inorganic Zinc Silicate PC 149

FEATURES

- HEAVY DUTY CATHODIC PROTECTION FOR STEEL IN CORROSIVE MARINE ENVIRONMENTS
- HIGH ZINC CONTENT – MEETS AS/NZS 3750.15 TYPE 4 & SSPC-PAINT 20 LEVEL 1
- COMPATIBLE WITH A RANGE OF PROTECTIVE COATINGS FOR EXTENDED SERVICE LIFE
- GOOD IMPACT AND ABRASION RESISTANCE WHEN FULLY CURED

USES

DUREZINC™i90 is a two-pack self-curing inorganic zinc silicate formulated for use in heavy-duty corrosion protection in aggressive industrial and marine environments. DUREZINC™ i90 cures to hard, tough coating that resists damage during transport. DUREZINC™ i90 provides cathodic protection to steel surfaces, without the need for overcoating, under industrial and marine service. The service life may be extended or a decorative finish can be provided by overcoating with an epoxy, chlorinated rubber, acrylic or polyurethane protective coating.

DUREZINC™ i90 is used on bridge structures, interiors and exteriors of petroleum storage tanks, bulk handling terminals and chemical and industrial plants. It can also be used on shipping facilities and offshore platforms.

SPECIFICATIONS

- AS/NZS 3750.15 Type 4
- SSPC-PAINT 20 Level 1
- Tested in accordance with AS 4100-1998 – Steel Structures Appendix J – Standard Test for Evaluation of Slip Factor

RESISTANCE GUIDE

WEATHERABILITY	Withstands the most severe weathering conditions	SOLVENTS	Insoluble in chlorinated hydrocarbons (dry), aromatics, ketones & esters, most petroleum solvents and oil crudes
HEAT RESISTANCE	- 50°C to 400°C dry heat	WATER	Topcoat required for immersion
SALTS	Requires top coating for immersion	ALKALIS	Resists alkali environments with epoxy topcoats
ACIDS	Not recommended for acid conditions	ABRASION	Excellent when fully cured

TYPICAL PROPERTIES AND APPLICATION DATA

CLASSIFICATION	Solvent based inorganic zinc silicate
FINISH	Matt
COLOUR	Grey
COMPONENTS	Two
VOLUME SOLIDS	Not applicable
VOC LEVEL	<490 g/L
FLASH POINT	12°C
POT LIFE	8 hours (25°C, 50% RH)
MIXING RATIO (BY WEIGHT)	Liquid: 1.00 Powder: 1.80
THINNER	920-08925 Dulux® Epoxy Thinner
PRODUCT CODE	730-H0146 Liquid 812-H0147 Zinc Powder

APPLICATION CONDITIONS

	Min	Max
Air Temp.	5°C	30°C
Substrate Temp.	5°C	35°C
Relative Humidity	50%[1]	85%

COATING THICKNESS (MICRONS)

	Min	Max	Recommended
Wet film per coat (µm)	90	135	110
Dry film per coat (µm)	60	90	75

SUITABLE SUBSTRATES	Abrasive blast-cleaned steel
PRIMERS	Not applicable
TOPCOATS	Most Dulux® two pack products
APPLICATION METHODS	Conventional or airless spray

DRYING CHARACTERISTICS AT 75 µm DRY FILM THICKNESS*

					OVERCOAT	
Temperature	Humidity	Touch	Handle	Full Cure	Min[2]	Max[3]
25° C	50%	10 Minutes	2 Hours	4 Days	24 Hours	Extended

*These figures are a guide only, as ventilation, film thickness, humidity, thinning and other factors will influence the rate of drying.

[1] Application when relative humidity is below 50% will severely reduce or may prevent curing. Refer to the PRECAUTIONS section.

[2] Durezinc™ i90 requires humidity to cure. Ensure the coating is adequately cured before overcoating.

[3] Once Durezinc™ i90 has been exposed to the environment and the surface exhibits contamination or signs of sacrificial corrosion products (chalkiness), special preparation techniques will be required prior to overcoating.

SPREADING RATE
ASSUMING NO LOSSES

7.0 square metres per litre equals 75 µm dry film thickness

NOTE: Practical spreading rates will vary depending on application method, ambient conditions, surface porosity and roughness. Due to the porous nature of zinc silicate coatings, it is not possible to directly relate the practical spreading rate with theoretical volume solids as is common with conventional coatings.

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TYPICAL SYSTEMS

This is a guide only and is not to be used as a specification. Your specific project needs must be discussed with a Dulux Protective Coatings Consultant.

SURFACE	ENVIRONMENT	PREPARATION GUIDE	SYSTEM		DFT (µm)
STEEL – NEW	High corrosivity (AS2312.1 Cat C4) System IZS1	Abrasive blast clean AS1627.4 Class 2.5	1st Coat	Durezinc™ i90	75 µm
STEEL – NEW	Very high corrosivity (AS2312.1 Cat C5) Exceeds System PUR5	Abrasive blast clean AS1627.4 Class 2.5	1st Coat 2nd Coat 3rd Coat	Durezinc™ i90 Duremax® GPE MIO Weathermax® HBR	75 µm 200 µm 100 µm
STEEL – NEW	Very high corrosivity (AS2312.1 Cat C5) System PUR5	Abrasive blast clean AS1627.4 Class 2.5	1st Coat 2nd Coat 3rd Coat	Durezinc™ i90 Duremax® MBE Luxathane® HPX	75 µm 200 µm 50 µm
STEEL – NEW	Very high corrosivity (AS2312.1 Cat C5) System EHB6	Abrasive blast clean AS1627.4 Class 2.5	1st Coat 2nd Coat 3rd Coat	Durezinc™ i90 Ferreko® No.3 Ferreko® No.3	75 µm 125 µm 125 µm
STEEL – NEW	Very high corrosivity (AS2312.1 Cat C5) System ACC5	Abrasive blast clean AS1627.4 Class 2.5	1st Coat 2nd Coat 3rd Coat	Durezinc™ i90 Duremax® GPE Acrathane® IF	75 µm 125 µm 50 µm

NOTE: If the application is by brush or roller, additional coats will be necessary to achieve the minimum DFT and full opacity

SURFACE PREPARATION

Steel: Round off all rough welds, sharp edges, and remove weld spatter. Remove grease, oil and other contaminants in accordance with AS1627.1. Degrease with Gamlen CA 1 (a free-rinsing, alkaline detergent) according to the manufacturer's written instructions and all safety warnings. Abrasive blast clean to a minimum of AS1627.4 Class 2.5 with a blast profile of 40 – 60 microns.

Immersed steel: Abrasive blast cleaned to AS1627.4 Class 3. Remove all dust by brushing or vacuum cleaning.

APPLICATION

Mix the liquid component thoroughly with a power mixer.

Remove the zinc from its container by lifting out the plastic bag. Slowly add the zinc into the liquid at the supplied ratio under continuous stirring until all of the zinc powder is fully incorporated and a smooth mix is obtained. Ensure the entire contents are transferred. Strain the mix through a 30-60 mesh metal screen into a clean container ensuring no zinc is left on the screen.

Remix and repeat the straining process, discarding any large zinc particles caught on the mesh. Mix only enough product that may be used within the pot life period. An air-powered automatic agitation stirrer should be used for the entire application time.

All incoming air for pressure pots, spray guns and airless pump motors must be free of moisture, oil vapour, or any other contamination. Compressors should be fitted with moisture and oil separators.

Inorganic zinc coatings are very heavy liquids and spray techniques need to be adapted accordingly.

BRUSH/ROLLER

Not Recommended. Use Zincanode® 402 or Zincanode® 202 for touch up.

CONVENTIONAL SPRAY

Thinning is not normally required.

The atomising pressure at the gun should be adjusted between 2.7 - 4 bar (40-60 p.s.i.) so that the fan is uniform across the width of the spray pattern. The material flow rate through the gun should be adjusted so that a solid stream of zinc flows from the material nozzle for approximately 200mm (8") to 254mm (10") before dropping. Adjust the width of the fan so that an even thickness of coating is deposited to the substrate. Having the fan too wide or the atomising air pressure too high will result in uneven film thickness, dry spray at the edges and the possibility of mud cracking in the middle sections of the spray pattern.

Apply even, wet coats in a multiple-pass method (wet on wet) to achieve the wet film thickness required for the specified dry film thickness.

Fluid hoses should be as short as possible and 12mm minimum bore.

Typical Set-up	Graco AirPro:	1.8mm (239543)
	Pressure at Triton 308:	70-105 kPa (10-15 p.s.i.)
	Pressure at Gun:	380-415 kPa (55-60 p.s.i.)

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AIRLESS SPRAY	Thinning is not normally required but up to 50 ml/litre of Dulux® Epoxy Thinner (92008925) may be added to ease application. Select a spray tip that has a spray width suitable for the item being coated. Adjust the inbound air pressure to the airless pump so that the atomising pressure at the tip is sufficient to atomise the coating. Using excessive atomising pressure and standing too far from the work will result in a dry spray finish and can lead to mud cracking. Use a multiple-pass spray technique to achieve the wet film thickness required for the specified dry film thickness. Standard airless spray equipment such as a Graco Xtreme 30:1 with a fluid tip of 15-19 thou (0.38- 0.48mm) and an air supply capable of delivering 550-690 kPa (80-100 p.s.i.) at the pump would generally be suitable. **Ensure paint is regularly agitated during application to prevent separation and settling**.
PRECAUTIONS	This is an industrial product designed for use by experienced Protective Coating applicators. Where conditions may require variation from the recommendations on this Product Data Sheet contact your nearest Dulux® Consultant for advice prior to painting. Do not apply in conditions outside the parameters stated in this document without the express written consent of Dulux® Australia. Freshly mixed material must not be added to material that has been mixed for some time. The rate of cure is dependent upon temperature. Do not apply at temperatures below 5°C. Do not apply at relative humidity above 85%, below 50% or when the surface is less than 3°C above the dewpoint. Do not exceed 90 microns DFT in one application. Do not apply any topcoats of a saponifiable nature such as alkyds directly to Durezinc™ i90. If applied below 50% relative humidity or onto a very hot surface, curing may be permanently compromised, and hardness should be checked before top coating. In such cases, misting down with a low–pressure water spray can assist hardness development.
CLEAN UP	Clean all equipment with Dulux® Epoxy Thinner (920-08925) immediately after use.
OVERCOATING	Degrease with Gamlen CA 1 according to the data sheet. Test adhesion of existing coating by standard cross hatch adhesion test. If the coating fails, remove it. High-pressure water wash at 8.3 to 10.3 MPa (1,200-1,500 p.s.i.) to remove chalk and dust. Abrade surface to provide a good key for the new coating. Do not recoat aged Durezinc™ i90 with itself. Dulux® recommends Zincanode® 402 or Zincanode® 202.
SAFETY PRECAUTIONS	**Read the Data Sheet, SAFETY DATA SHEET and any precautions on container labels. SAFETY DATA SHEET is available from Customer Service (13 23 77) or www.duluxprotectivecoatings.com.au**
STORAGE	Store as required for a flammable liquid Class 3 in a bunded area under cover. Store in a well-ventilated area away from sources of heat or ignition. Keep containers closed at all times.
HANDLING	As with any chemical, ingestion, inhalation and prolonged or repeated skin contact should be avoided by good occupational work practice. Eye protection approved to AS1337 should be worn where there is a risk of splashes entering the eyes. Always wash hands before smoking, eating, drinking or using the toilet.
USING	Use with good ventilation and avoid inhalation of spray mists and fumes. If the risk of inhalation of spray mists exists, wear a combined organic vapour/particulate respirator. When spraying, users must comply with their respective State Spray Painting Regulations.
FLAMMABILITY	This product is flammable. All sources of ignition must be eliminated in, or near the working area. DO NOT SMOKE. Fight fire with foam, CO_2 or dry chemical powder. On burning will emit toxic fumes.
WELDING	Avoid inhalation of fumes if welding surfaces are coated with this paint. Grind off the coating before welding.

COMPANY INFORMATION

Dulux Protective Coatings is a division of:

DuluxGroup (Australia) Pty Ltd
1956 Dandenong Road, Clayton 3168
A.B.N. 67 000 049 427

DuluxGroup (New Zealand) Pty Ltd
150 Hutt Park Road, Lower Hutt, NZ
A.B.N. 55 133 404 118

PACKAGING, TRANSPORT AND STORAGE

PACKAGING	Available in 17 litre kits
TRANSPORTATION WEIGHT	2.14 kg/litre (Average of components)
DANGEROUS GOODS	Liquid: Class 3 UN 1263 Powder: Class 9 UN 3077 Classified as a dangerous good by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS:5433: Transport of Dangerous Goods on Land". Environmentally Hazardous substances meeting the descriptions of UN 3077 or UN3082 are not subject to this code when transported by road or rail in any receptacle not exceeding 500kg. Classified as a dangerous good by the criteria of the International Maritime Dangerous Good (IMDG) Code for transport by sea. Classified as a dangerous good by the criteria of the International Air Transport Association (IATA Dangerous Goods Regulations for transport by air.