

AQUAGALV[®]

Water Borne Inorganic Zinc Silicate

PC 154

- FEATURES**
- LOW VOC – LESS THAN 10g/L
 - HIGH ZINC CONTENT RESULTING IN EXCELLENT CORROSION PROTECTION
 - EXTREMELY HARD WEARING AND ABRASION RESISTANT
 - SUITABLE FOR SURFACES EXPOSED TO TEMPERATURES UP TO 400°C
 - SUPERIOR TO GALVANISING IN MARINE ENVIRONMENTS
 - NON FLAMMABLE
 - LOW ODOUR

USES AQUAGALV[®] is a two pack self-curing water borne inorganic zinc silicate suitable for use as a permanent primer and as a prime coating underneath specified topcoats. It is the first choice when requiring a long term protective coating for steel structures that need to meet Green Building Council "GREENSTAR" requirements. When cured, AQUAGALV[®] exhibits a matt grey appearance and is an exceptionally hard coating that resists damage during transport. AQUAGALV[®] provides excellent corrosion resistant properties for conditions of severe weathering including marine exposure, moderate chemical environments and hydrocarbon contact. The service life may be extended or a decorative finish can be achieved by overcoating with a suitable topcoat.

SPECIFICATIONS Conforms to AS2312:2004 – Systems "IZS2" and "IZS3"

RESISTANCE GUIDE

HEAT RESISTANCE	-50°C to 400°C dry heat.	ALKALIS	Resists alkali environments when overcoated with epoxy topcoats.
WEATHERABILITY	Withstands the most severe weathering conditions.	SALTS	Suitable for splash/spillage. Not suitable for immersed conditions.
SOLVENTS	Insoluble in chlorinated hydrocarbons (dry), aromatics, ketones & esters, most petroleum solvents and oil crudes.	WATER	Excellent when fully cured. Refer to Drying Characteristics.
ACIDS	Not recommended for acid conditions.	ABRASION	Excellent.

TYPICAL PROPERTIES AND APPLICATION DATA

CLASSIFICATION	Water Borne Inorganic Zinc Silicate		APPLICATION CONDITIONS	Min	Max
FINISH	Matt		Air Temperature	10°C	35°C
COLOUR	Grey		Substrate Surface Temperature	7°C	50°C
COMPONENTS	Two		Relative Humidity	30%	80%
SOLIDS BY VOLUME	Not Applicable				
VOC	< 10 g/L				
FLASH POINT	N/A				
POT LIFE	4 hours (25°C, 50% RH, 10.77Lmixed) ¹		Wet film per coat (microns)	Min 150	Max 375
ZINC IN DRY FILM	86% minimum by hydrogen evolution		Dry film per coat (microns)	50	125
MIXING RATIO (W/W)	Liquid : 1.00	Powder : 3.47			Recom. 225
THINNER	No Thinning Required		SUITABLE SUBSTRATES	Abrasive blast cleaned steel.	
PRODUCT CODE	812-89837	Liquid	TOPCOATS	Most two pack products.	
	812-33225	Powder	APPLICATION METHODS	Conventional spray.	

Drying characteristics at 75 microns dry film thickness

Temperature	Humidity	Touch	Handle	Full Cure ²	Overcoat	
					Min	Max
25° C	50%	30 Minutes	4 Hours	48 Hours	24 Hours ³	Indefinite

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

¹ Beyond this time the mixed material may still be liquid, however it MUST not be used. Refer to PRECAUTIONS section over.

² At this time the product can be put into service, however coating properties will continue to develop after this period and will reach full performance in 7 – 10 days.

³ This coating must not be overcoated or exposed to atmospheric moisture (eg. condensation, dew, rainfall) before this time.

TYPICAL SPREADING RATE AT RECOMMENDED DRY FILM BUILD

A spreading rate of 6.0 sq. metres per litre corresponds to 75 microns dry film thickness assuming no losses. Due to the porous nature of zinc silicate coatings it is not possible to directly relate practical spreading rate with theoretical volume solids as is common with conventional coatings.

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TYPICAL SYSTEMS

(The typical systems are offered as a guide only and are not to be used as a specification. It is recommended that the specific needs of a project be discussed with a Dulux Protective Coatings Consultant.)

SURFACE	PREPARATION GUIDE	SYSTEM		DRY FILM THICKNESS
STEEL	Abrasive blast to AS1627.4 Class 2.5	1st Coat	AQUAGALV®	75 Microns
		2nd Coat	DUREMAX® GPE	100 Microns
		3rd Coat	AQUANAMEL®	25 Microns
		1st Coat	AQUAGALV®	75 Microns

SURFACE PREPARATION Round off all rough welds, sharp edges and remove weld spatter. Remove grease, oil and other contaminants in accordance with AS1627.1. Rinse surface thoroughly to remove acid or alkali contamination. Abrasive blast clean to a minimum of AS1627.4 Class 2.5 with a blast profile of 35-50 microns. Immersed steel must be prepared to AS1627.4 Class 3. Remove all dust by brushing or vacuum cleaning. Apply product before any surface deterioration occurs.

APPLICATION **All equipment should be flushed sequentially: firstly with acetone, then with Ethanol (Methylated Spirits) and then water before use.**
Use an air powered stirrer to thoroughly mix the liquid component and ensure it is uniform before addition of the zinc. Slowly add the zinc in the supplied ratio under continuous stirring until all of the zinc powder is fully incorporated and a smooth mix is obtained. Strain the mix through a 30-60 mesh screen. Push dry and larger zinc particles through the mesh with a clean, dry paint brush, re-mix and repeat the straining process. Discard 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 time the product is being applied. All incoming air for pressure pots should 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 Apply the mixed coating by brush technique to edges and welds for "stripe coating" as called for in the specification. Not recommended for brush application to large areas. It is recommended to use new brushes that have been rinsed in Ethanol (Methylated Spirits) and then water prior to using.

CONVENTIONAL SPRAY Do not Thin. 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 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.

Ensure paint pressure pots are fitted with a continuous operation mixing impeller / paddle to ensure that the mixed zinc does not settle during application.

Typical Set-up

Graco Delta Gun: 1.8mm (239543)
Pressure at Pot: 70-105 kPa (10-15 p.s.i.)
Pressure at Gun: 380-415 kPa (55-60 p.s.i.)

SITE REPAIR/ TOUCH UP For small areas of repair use AQUAGALV®. For broader areas or for repairs over weld joints use Zincode® 202 Epoxy Zinc rich primer, where the primer is not going to be topcoated, and Zincode® 402 where topcoating is required (Please note that there is a colour difference between AQUAGALV® and Zincode® 202.)
Small areas of repair can be prepared by hand and power tool methods to AS 1627.2 St 3 to remove damaged coating and to ensure the leading edges of surrounding coatings are "feathered". Apply the AQUAGALV®, Zincode® 202 or Zincode® 402 by brush or spray method in one coat to achieve a minimum of 75 microns DFT. Large areas of damaged coating should be removed by Abrasive Blast cleaning to AS 1627.4 Class 2.5 and re-applied as per the original specification.

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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® Protective Coatings Specialist 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 10°C. Do not apply at relative humidity above 80%, below 30% or when the surface is less than 3°C above the dewpoint.

If the recommended profile is not achieved there is a risk that the coating will not adhere to the substrate once cured. When excessive builds are applied the zinc will sink to the bottom of the wet film and leave the surface glossy and hazy in appearance. The product is prone to mud crack in corners where it has been excessively overbuilt (Greater than 300µm). Mist coating with water to assist cure is **NOT** allowed.

Minimum top-coating interval of 24hrs, during this period the coating **MUST** be protected from moisture (eg. condensation, dew, rainfall). Top-coating before this interval can result in adhesion failures at the primer/topcoat interface, and cohesive failure within the primer layer.

If the atmospheric temperature is very low and the humidity high (above 80%) then crystals of resin may form on the surface of the coating. This is likely to occur if condensation forms on the surface during curing. Before top-coating these crystals need to be removed by abrading (scotch brite sufficient) and then thoroughly water washing and drying. Care **MUST** be taken to ensure the application equipment is totally free of any solvent contamination. Low humidity will affect the rate of cure. Topcoats of a saponifiable nature such as alkyds must never be applied directly to AQUAGALV®. Material that has been mixed for a period longer than the stated pot life of 4 hours may appear to still be suitable for use and will form a film of normal appearance, however this material must **NOT** be used as the protective properties of the coating will be compromised.

Do not exceed 150 microns DFT in one application. If applied below 30% relative humidity or onto a very hot surface, curing will be retarded and may even be prevented. When the relative humidity is below 30% contact a Dulux® Protective Coatings Specialist prior to applying the product. Product should not be thinned.

CLEAN UP

Clean all equipment by thoroughly flushing with water and then Ethanol (Methylated Spirits). All gun parts can be soaked in water overnight to remove dried on product. If these parts are not cleaned within 24hrs they may require soaking in caustic, however this can also damage the metal and should not be done regularly.

OVERCOATING

Aged coating should be tested for lifting by a method appropriate for the coating thickness, for example 'X' cut or cross-hatch methods. If it lifts, remove it. The surface must be free of oil, grease, zinc corrosion products and other contaminants. High-pressure water wash at 8.3 to 10.3 MPa (1,200 - 1,500 p.s.i.) to remove loosely adhering chalk and dust.

It is not recommended to recoat aged AQUAGALV® with itself. Use ZINCANODE® 202.

SAFETY PRECAUTIONS STORAGE

Read Data Sheet, Material Safety Data Sheet and any precautionary labels on containers.

Both components are NOT classified as dangerous goods for transport or storage Store in a bunded area under cover. Keep containers closed at all times. Avoid moisture contamination of Zinc Dust component.

HANDLING

Avoid moisture contamination of the Zinc Dust component as gassing may occur. 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 risk of inhalation of spray mists exists, wear combined organic vapour/particulate respirator. When spray painting, users should comply with the provisions of the respective State Spray Painting Regulations.

FLAMMABILITY

Not Flammable

WELDING

Avoid inhalation of fumes if welding surfaces coated with this paint. Grind off coating before welding.

MATERIAL SAFETY DATA SHEET is available from Customer Service (132377) or www.duluxprotectivecoatings.com.au

Dulux Protective Coatings a division of DuluxGroup (Australia) Pty Ltd
1956 Dandenong Road, Clayton 3168
A.B.N. 67 000 049 427
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PACKAGING	Available in 10.77 litre pack
TRANSPORTATION WEIGHT	2.85 kg/litre (Average of components)
DANGEROUS GOODS	Liquid: Non Dangerous Goods Powder: Non Dangerous Goods

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