

# Resene

Engineered Coating Systems

## Paint Systems for Galvanised Steel

**Guide to the protection of iron and steel  
against exterior atmospheric corrosion  
by the use of protective coatings**

**Equivalent to AS/NZS 2312.2:2014**

**Part 2: Hot dip galvanizing**

## Notes:

1. This document must be read in conjunction with the current AS/NZS 2312.2 and AS/NZS2312.1 Standard.
2. Refer to Section 1.6 Durability Considerations & Section 2 Classification of Environments of the AS/NZS 2312.1 Standard when using this document.
3. Criteria for determination of when first maintenance (major) is required is given in Section 8.3 of the above-mentioned standard.
4. Galvanising of structural steel sections (applied after fabrication) must meet the requirements of AS/NZS 4680 Standard.
5. Information given in this publication is intended as a guide only and represents data, which is believed to be reliable based on current knowledge.
6. Variation in environment, microclimate, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.
7. No warranty of product or system performance is expressed or implied.  
It is stressed that the durability range within the Standard is not a 'guarantee time'. Durability is a technical consideration that can help the owner set up a maintenance programme. It is also noted that the coating type is only one factor in determining the durability of a protective coating system. Surface preparation, application procedures, design, local variations in environment and other factors will all influence the durability of coatings.



# Classification of Environments

## As per Section 2 - AS/NZS 2312.1 and based on ISO 9223 corrosivity categories

<p style="text-align: center;"><b><u>Micro-Environments</u></b></p> <p>In addition to climatic effects, the local environmental effects (microclimate) produced by the erection of a structure or installation of equipment needed to be taken into account. Such on-site factors require additional consideration because a mildly corrosive atmosphere can be converted into an aggressive environment by microclimatic effects. For example, a significant acceleration of corrosion rate can occur in the following circumstances:</p> <p>1/ At locations where the metal surface remains damp for an extended period, such as where surfaces are not freely drained or are sheltered from sunlight.</p> <p>2/ On unwashed surfaces, i.e. surfaces exposed to the atmospheric contaminants, notably coastal salts and pollution, but protected from cleansing rain.</p> <p>Other microclimatic effects which may accelerate the corrosion rate of the deterioration of its protective coating include acidic or alkaline fallout, industrial chemicals and solvents, airborne fertilizers and chemicals, prevailing winds which transport contamination, hot or cold surfaces and surfaces exposed to abrasion and/or impact etc. It is very difficult, if not impossible, to predict accurately the aggressiveness of a given environment and a certain amount of educated judgment is required to assess its influence on coating life.</p>	<p style="text-align: center;"><b><u>Category C1: Very Low</u></b></p> <p>Most commonly found inside heated or air conditioned buildings with clean atmospheres. They may also be found in semi-sheltered locations remote from marine or industrial influence and in unheated or non-air conditioned buildings. The only external environments in Australia or New Zealand are some alpine regions although generally these environments will extend into category C2.</p> <p style="text-align: center;"><b><u>Category C2: Low</u></b></p> <p>This category includes dry, rural areas as well as other regions remote from the coast or sources of pollution. Most (but not all) areas of Australia or New Zealand beyond 50km from the sea are in this category. Unheated buildings where some condensation may occur, such as warehouses and sports halls, can be in this category, however proximity to the coast is an important factor.</p> <p style="text-align: center;"><b><u>Category C3: Medium</u></b></p> <p>This category covers coastal areas with low salinity. The extent of the affected area varies with factors such as winds, topography and vegetation. Along ocean front areas with breaking surf and significant salt spray, it extends from about 1km inland to between 10 to 50 km inland, depending on the strength of prevailing winds and topography. Such regions are also found in urban and industrial areas with low pollution levels, however these areas are uncommon.</p>
<p style="text-align: center;"><b><u>Category C4: High</u></b></p> <p>This category occurs mainly on the coast. Around sheltered bays, Category C4 extends up to 50m inland from the shoreline. In areas of rough seas and surf, it extends from about 200-300m to 1km inland. As with other categories the extent depends on winds, wave action and topography. Industrial regions may also fit into this category and this category extends inside the plant where it is best considered as a microenvironment. Damp, contaminated interior environments such as occur with swimming pools, dye works, paper plants, foundry's, smelters and chemical plants may also extend into this category.</p>	<p style="text-align: center;"><b><u>Category C5: Very High</u></b></p> <p style="text-align: center;"><b>(C5-I: Industrial C5-M: Marine) &amp; CX-Extreme</b></p> <p>This category is common offshore and on the beachfront in regions of rough seas and surf beaches. The region can extend inland for several hundred metres and in some areas it can extend more than 1/2km from the coast. This category may also be found in aggressive industrial areas, where the environment may be acidic with pH of &lt;5. For this reason, Category C5 is divided into Marine and Industrial for purposes of coating selection. Some of the damp and/or contaminated interior environments in category C4 may occasionally extend into this category. In addition there is an additional Category CX Extreme, for severe surf and off shore. If this is encountered the user should seek professional advice.</p>
<p><b><u>Category T: Inland Tropical</u></b> has been omitted in this list. Please refer to the Standard if required.</p>	<p style="text-align: center;"><b>Important Note :</b></p> <p>If a site is considered to be in more than one category, then a selected coating should be capable of resisting the most severe of the environments involved.</p>
<p>Note: For a full, more detailed description please refer to the above mentioned Standard</p>	<p style="text-align: right;"><b>December 2014</b></p>

# Resene Engineered Coating Systems

## Equivalent to AS/NZS 2312:2

### PAINTING SYSTEMS FOR HOT DIP GALVANISED STEEL TO AS/NZS 4680

Coating System Details										Durability-Years to first maintenance of paint component of duplex system			
System No.	Service qualities	Surface Preparation	1st Coat		2nd Coat		3rd Coat		Total Nom DFT µm*	Atmospheric corrosivity category			
			Product	Nom DFT µm	Product	Nom DFT µm	Product	Nom DFT µm		C2 Low	C3 Med.	C4 High	C5 Very High
			<b>HOT DIP GALVANIZING</b>										
1D	Decorative †	Degrease, Wash and Dry	Galvo-Prime	35	HiGlo, Sonyx 101, Enamacryl, Lustacryl	50	-	-	85	5-10	5-10	NR	NR
2D	Decorative	Degrease, Wash and Dry, Sweep abrasive blast #	Armourcote 220	75	Uracryl 403 or Imperite IF 503	50	Uracryl 403 or Imperite IF 503	50	175	10-15	10-15	5-10	NR
3I	Wear and Tear Industrial	Degrease, Wash and Dry, Sweep abrasive blast #	Armourcote 220	75	Armourcote 510	150	-	-	225	>15	10-15	10-15	5-10
4D	Protective Long term Decorative	Degrease, Wash and Dry, Sweep abrasive blast #	Armourcote 510	250	Uracryl 403 or Imperite IF 503	50	Uracryl 403 or Imperite IF 503	50	350	>15	>15	10-15	5-10
5D	Protective Long term Industrial	Degrease, Wash and Dry, Sweep abrasive blast #	Armourcote 220	75	Armourcote 510	225	Uracryl 403 or Imperite IF 503	100 2 x 50 µm application	400	>15	>15	>15	10-15
5I	Protective Long term Industrial	Degrease, Wash and Dry, Sweep abrasive blast #	Armourcote 220	75	Armourcote 515 MIOX	150	Armourcote 515 MIOX	175	400	>15	>15	>15	10-15

\* Thickness of galvanising not included. † To increase decorative life use system 2D as a minimum.

# Controlled sweep abrasive blasting with clean non-metallic abrasive to impart a surface roughness and remove chromate quenched surface  
adhesion of the applied system

Chart 1  
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# Resene Engineered Coatings Systems

Equivalent to AS/NZS 2312:1

## PAINTING SYSTEMS FOR STEEL/GALVANISED STEEL

### GENERIC PRODUCT

Acrylic Gloss (2 Pack)  
Acrylic Latex - Semi Gloss  
Acrylic Latex - Gloss  
Acrylic Latex Primer  
Epoxy - High Build  
Epoxy MIO - High Build  
Epoxy Primer  
Polyurethane Gloss

### RESENE PRODUCT

Imperite I.F. 503  
Sonyx 101, Lustacryl  
Hi-Glo, Enamacryl  
Galvo-Prime  
Armourcote 510  
Armourcote 515 MIOX  
Armourcote 220  
Uracryl 403



For Corrosion Protection Systems and Coating Systems outside the scope of this document, please contact your Resene Engineered Coatings Consultant for further assistance and advice.

We can also assist you in selection of the most appropriate system within this document to best suit your requirements.

**[www.resene.co.nz](http://www.resene.co.nz)**

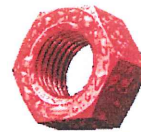
## **Our vision**

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**To be respected as an ethical and sustainable company and acknowledged as the leading provider of innovative paint and colour technology.**

**Resene**

the paint the professionals use



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Engineered Coating Systems