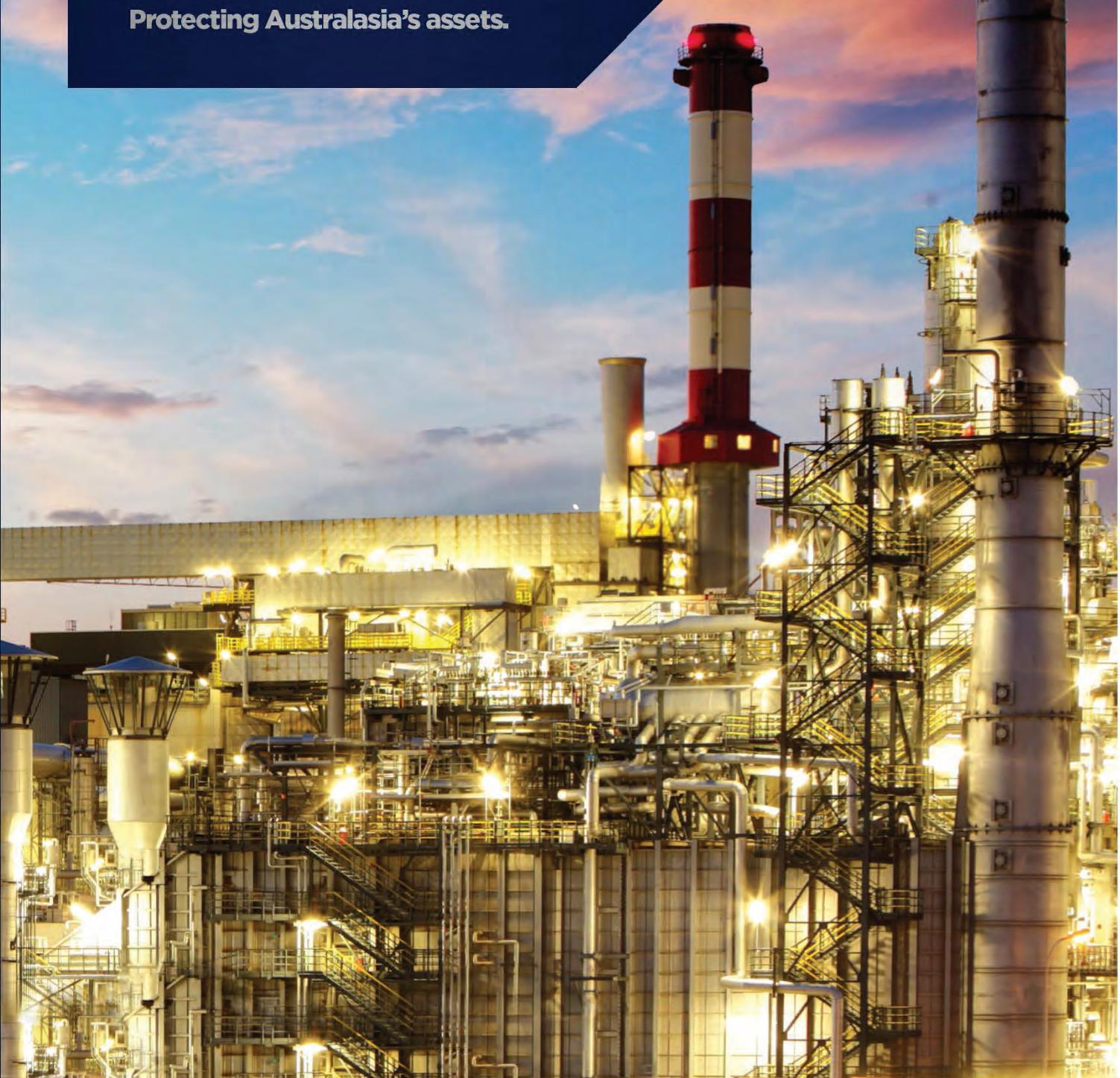


OIL & GAS

Protecting Australasia's assets.



PROTECTING AUSTRALASIA'S ASSETS

FOR more than 75 years, Dulux has been here supplying heavy duty coatings systems for complete protection against corrosion, chemical attack, abrasion, and impact damage for the maintenance of asset value and production efficiency.

From pit to port, and from off-shore platforms, oil, gas and mining operations and processing, to transport, loaders, wharf piles and structures - Dulux's range includes products designed specifically to withstand the corrosive chemical exposure, impact, and abrasion of the oil and gas industries.

In addition Australasia's vast, harsh and unique regional conditions, with extremes in UV radiation, high/low temperature deviations, and high coastal exposures call for heavy duty protective coating systems designed specifically for the substrate and environment they are to be used in.

Industries like

- Oil and Gas – both on land and off shore
- Mining and Mineral processing
- Major infrastructure and construction projects
- Power generation and transmission
- Water storage and water waste treatment plants

All have specific needs that require unique coatings solutions.

With our modern, world-class, purpose built research and development laboratories, supported by our Australasian manufacturing bases, our extensive distribution network and our experienced specification consultants and Sales Executives, Dulux Protective Coatings has the people, the products, and the processes to facilitate the supply and application of the right coating systems without delays and with confidence.

Dulux Protective Coatings – We're here across Australasia.



WE'RE HERE

OIL AND GAS INDUSTRY

LOCAL EXPERTISE FOR INTERNATIONAL PROJECTS

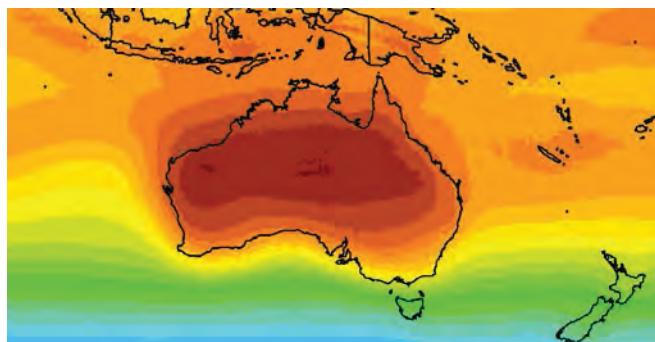
In every situation from oil drilling, gas extraction and off-shore platforms, through refineries and purification plants to product storage and distribution, Dulux Protective Coatings has over 75 years of experience in corrosion protection.

Refineries and gas plants suffer many forms of corrosion, such as pitting from water condensation, embrittlement from hydrogen exposure, and stress corrosion cracking from sulphides. Protection against corrosion is essential to minimise downtimes, work safely, and maintain asset value.

The most effective corrosion protection is offered by zinc rich primers and high build barrier coats. In areas of UV exposure, high performance UV resistant coatings provide essential protection against photo degradation to prolong the life of the coating system and your assets.

WHY IS AUSTRALASIA DIFFERENT?

The high UV radiation endured across Australasia readily breaks down coating systems designed to protect steel from corrosion. Although many protective coatings are tested in northern hemisphere exposure sites such as Florida, Dulux Protective Coatings are tested in the significantly harsher conditions in Allunga, Queensland. Therefore, coatings that have passed exposure testing overseas simply may not perform adequately here.



Australasia's developments are largely coastal, and are exposed to high atmospheric chloride levels that corrode normally corrosion-resistant aluminium and stainless steel, and cause rapid conversion of exposed zinc metal to white zinc oxide corrosion products.



Tanks in PNG. The zinc layer has corroded to white zinc oxide. Red rust shows where the zinc has been completely depleted.

PROTECTING YOUR ASSETS IN THE AUSTRALASIAN REGION

Our coating systems are principally designed to provide long term protection of plant and equipment from atmospheric deterioration and corrosion, and chemical attack more effectively than hot dip galvanising, particularly in the humid, acidic, and salt laden environments that characterise this region. Our zinc rich primers are fully compatible with our high build epoxy barrier coats, our tank linings and our UV resistant polyurethanes to ensure long term durability.

Experience repeatedly demonstrates that our systems are also far more easily maintained than "duplex systems" - protecting your assets, and maintaining asset value and productivity.

PAST PROJECTS

Many oil and gas facilities across Australasia today are being effectively maintained with Dulux Protective Coatings.

A small selection of relevant case histories includes:

- AGL Agility Gas pipes and heads main NG trunk line NSW & SA
- ALMC Lytton Tank Farm & Piping Qld
- Apache Energy off shore platforms
- Austank Diesel Tanks Vic
- Australian Renewable Fuels Biodiesel Plant SA
- BHP V Minerva Vic
- BP Depot Geraldton WA
- BP Mareeba Bulk Storage Tanks Qld
- BP Mobile Diesel Tanks WA
- Caltex Storage Tanks WA
- Dampier to Bunbury Gas Pipeline WA
- Ecogen Newport Diesel Tanks & Stoplocks Vic
- Enerflex Australasia gas energy generators Qld
- Esso West Tuna Bass Strait
- Exxon Mobil Esso boilers Vic
- Gorgon LNG Project
- Halliburton Australia mobile pump units Qld
- Mobil Australia Tanks Vic
- SAFE Astoria off shore platform
- Shell Australia Tas
- Troughton Island Jet A-1 Fuel Tanks WA
- Woodside Petroleum Limited North Rankin A platform



OUR COATING SYSTEMS GUIDE FOR OIL & GAS - ON SHORE

The following is intended as a guide only. To provide tailor made and detailed specifications for your project, please call your Dulux Protective Coatings Technical Consultant.

ACID & ALKALI BUNDING AREAS - STEEL

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durepon® EZP @ 75µm
2 nd coat	DULUX Flexituff® @ 2500µm

ACID & ALKALI BUNDING AREAS - CONCRETE

Preparation: Diamond grind

1 st coat	DULUX Luxepoxy® Sealer @ 40µm
2 nd coat	DULUX Flexituff® @ 2500µm

● COLD PREHEAT TRAIN - STEEL

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● CRUDE STORAGE TANKS - STEEL EXTERNALS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● CRUDE STORAGE TANKS - STEEL INTERNAL LININGS

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durekem® MPP @ 150µm
2 nd coat	DULUX Durekem® MPP @ 150µm

● DESALTER - STEEL

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● DISTILLATION COLUMNS AND SPLITTERS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● EXHAUST STACKS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● FIN FAN COOLERS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● FURNACES - TO 400°C

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Durezinc™ i90 @ 75µm
2 nd coat	DULUX Hi Temp™ 400 @ 20µm
3 rd coat	DULUX Hi Temp™ 400 @ 20µm

● FURNACES - TO 600°C

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Hi Temp™ Uniprime @ 25µm
2 nd coat	DULUX Hi Temp™ 600 @ 20µm
3 rd coat	DULUX Hi Temp™ 600 @ 20µm



GAS STORAGE TANKS - STEEL EXTERNALS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● HEAT EXCHANGERS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● JETTY AND WHARF - PILINGS - STEEL

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX Luxepoxy® UHB @ 3,000µm
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● JETTY AND WHARF - PILINGS - CONCRETE

Preparation: Degrease and grit blast

1 st coat	DULUX Luxepoxy® UHB @ 500µm
2 nd coat	DULUX Luxepoxy® UHB @ 2,000µm



● JETTY AND WHARF - STEEL ABOVE WATERLINE

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● PIPE EXTERNALS AND PIPE SPOOLS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● PIPE RACKS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● POTABLE WATER TANKS - STEEL INTERNALS

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durebild® TLE @ 125µm
2 nd coat	DULUX Durebild® TLE @ 125µm

● PROCESS VESSELS - STEEL EXTERNALS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● PRODUCT STORAGE TANKS - STEEL EXTERNALS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● PUMPS AND COMPRESSORS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

● ROADWAYS - SAFETY MARKING

Preparation: Clean to remove contaminants

1 st coat	DULUX Roadmaster® WB2 @ 230µm
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● WALKWAYS - INTERIOR CONCRETE, ANTI SLIP

Preparation: Diamond grind

1 st coat	DULUX Luxafloor® LGE @ 125µm
2 nd coat	DULUX Luxafloor® LGE @ 125µm
Slip resistance	DULUX Luxafloor® Broadcast No 36 Aggregate
3 rd coat	DULUX Luxafloor® LGE @ 125µm

● WALKWAYS AND STEPS - INTERIOR STEEL

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Luxafloor® LGE @ 125µm
2 nd coat	DULUX Luxafloor® LGE @ 125µm
3 rd coat	DULUX Luxafloor® LGE @ 125µm

● WALKWAYS AND STEPS - EXTERIOR CONCRETE

Preparation: Diamond grind

1 st coat	DULUX Luxafloor® LGE @ 125µm
2 nd coat	DULUX Luxafloor® LGE @ 125µm
3 rd coat	DULUX Luxafloor® PTX @ 100µm

● WALKWAYS AND STEPS - EXTERIOR STEEL

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX Zincanode® 402 @ 75µm
2 nd coat	DULUX Luxafloor® LGE @ 125µm
3 rd coat	DULUX Luxafloor® PTX @ 100µm

COLOUR CODING

Pipeline Identification Colours

Australian Standard Pipeline Identification Colours. Ref: AS 1345.

Water	G21 Jade	
Steam	N24 Silver Grey	
Oils, flammable liquids	X53 Golden Tan	
Gases	Y44 Sand	
Acids & alkalis	P23 Lilac	
Air	B25 Aqua	
Other Liquids	N61 Black	
Fire Services	R13 Signal Red	
Electric Power	X15 Orange	
Communication	N14 White	
Dangerous Materials	Y14 Golden Yellow + black	
Fresh water & Foodstuffs	B24 Harbour Blue	

OUR COATING SYSTEMS GUIDE FOR OIL & GAS - OFF SHORE

CRUDE STORAGE TANKS - STEEL EXTERNALS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

CRUDE STORAGE TANKS - STEEL INTERNAL LININGS

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durekem® MPP @ 150µm
2 nd coat	DULUX Durekem® MPP @ 150µm

DECKS - ANTI SLIP

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX Luxepoxy® UHB @ 2,000µm
Slip resistance	DULUX Luxafloor® Broadcast No 36 Aggregate
2 nd coat	DULUX Luxafloor® PTX @ 100µm

DIESEL TANKS

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durekem® MPP @ 150µm
2 nd coat	DULUX Durekem® MPP @ 150µm

FLARE BOOM

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

HELI DECK - ANTI SLIP

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX Luxepoxy® UHB @ 2,000µm
Slip resistance	DULUX Luxafloor® Broadcast No 36 Aggregate
2 nd coat	DULUX Luxafloor® PTX @ 100µm
3 rd coat	DULUX Luxafloor® PTX @ 100µm

HELI DECK SUPPORTS

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

JACKETS

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Luxepoxy® UHB @ 3,000µm

LIVING QUARTERS INTERIOR

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GPE @ 125µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

LIVING QUARTERS EXTERIOR

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

POTABLE WATER TANKS - STEEL INTERNALS

Preparation: Ref AS1627.4, Sa 3

1 st coat	DULUX Durebild® TLE @ 125µm
2 nd coat	DULUX Durebild® TLE @ 125µm



RISERS

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Luxepoxy® UHB @ 3,000µm

STEELWORK GENERALLY

Preparation: Ref AS1627.4, Sa 3 (75-100 µm profile)

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Weathermax® HBR @ 100µm

WALKWAYS AND STEPS - EXTERIOR STEEL

Preparation: Ref AS1627.4, Sa 2 ½

1 st coat	DULUX ZincaNode® 402 @ 75µm
2 nd coat	DULUX Duremax® GFX @ 250µm
3 rd coat	DULUX Luxafloor® PTX @ 100µm
4 th coat	DULUX Luxafloor® PTX @ 100µm

OUR PRODUCTS

The list below is a summary of the protective coatings products included in our Coating Systems specifications in this publication.

The number of products in this guide has been kept to a minimum for simplicity, practicality, and cost effectiveness.

Your Dulux Protective Coatings Representative may suggest and/or specify many other products within our range for your particular coating needs.

PRIMERS

PRODUCT	DESCRIPTION	DATA SHEET
DULUX Durepon® EZP	Zinc phosphate epoxy primer	PC206
DULUX Luxepoxy® Sealer	Pure epoxy resin	PC205
DULUX Hi Temp™ Uniprime	Temperature tolerant primer	PC926
DULUX Durezinc™ i90	Inorganic zinc silicate	PC149
DULUX Zincanode® 402	Zinc rich epoxy primer	PC122

INTERMEDIATES

DULUX Durebild® STE	Surface tolerant high build epoxy	PC237
DULUX Durekem® MPP	Multipurpose phenolic epoxy	PCA20
DULUX Duremax® GFX	High performance glass flake-rich epoxy	PC256
DULUX Duremax® GPE	General purpose epoxy	PC255

TOPCOATS

DULUX Durebild® TLE	Non taint epoxy tank lining	PC221
DULUX Flexituff®	Pure polyurea elastomer	PC390
DULUX Hi Temp™ 400	High temperature coating	PC929
DULUX Hi Temp™ 600	High temperature coating	PC930
DULUX Luxepoxy® UHB	Ultra high build epoxy	PC240
DULUX Roadmaster® WB2	Waterborne line marking	PC684
DULUX Weathermax® HBR	High build polyurethane	PC405

CONCRETE FLOORING

DULUX Luxafloor® LGE	Epoxy floor coating	PC700
DULUX Luxafloor® PTX	Polyurethane floor coating	PC701

The coating systems in this brochure can be used for both new work and maintenance, however the surface preparation clauses assume that the substrate in each case is new and unpainted.

For a comprehensive list of all our products, please visit our website at www.duluxprotectivecoatings.com.au.

DISCLAIMER

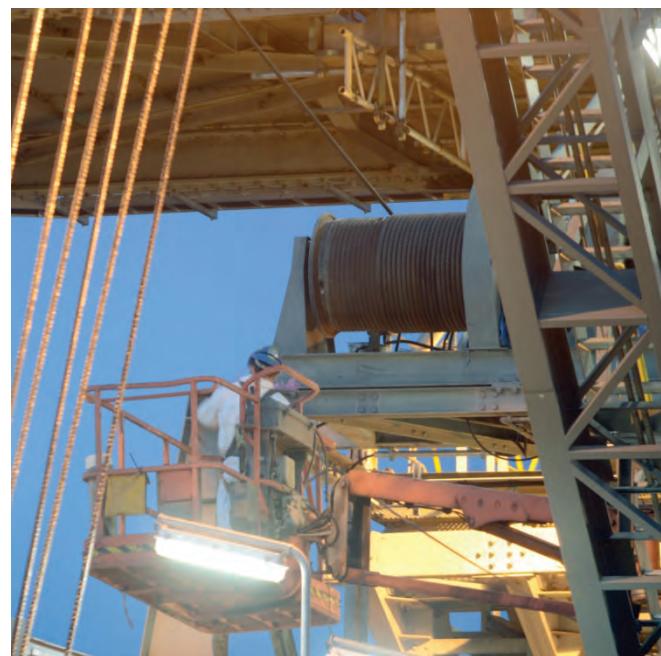
The technical data contained in this document is given in good faith as being appropriate and reliable at time of issue, but we cannot warrant that it is free from error or that it complete or up to date. This document is intended as a guide only and cannot be expected to cover every microclimate and situation. Use of the information contained herein is solely at your own risk. Any technical advice and/or coating specifications for your particular project must be issued from a Dulux Protective Coatings Representative.

BEFORE YOU START!

SURFACE PREPARATION

Thorough surface preparation is crucial to the performance of a coating system. Make sure your applicator has all the right equipment to remove and contain all rust, deteriorated coatings and residues from all surface to be painted. Such equipment may include, but is not limited to: spot abrasive blasters (wet or dry), Bristle Blasters® (registered trademark of MONTI-Werkzeuge GmbH), ultra high pressure water jets, and power sanders.

Do not allow the use of rust converters and other chemical treatments, (refer to Standards Australia AS2312.1:2014 Section 4.5 for more information) as they generally fail in their claims to provide a sound substrate for new coating systems to adhere to. The use of rust converters will void any warranty that may have been in place beforehand.



COATING SPECIFICATIONS

Your coating specifications should be quite specific with regard to surface preparation method, product name and minimum dry film thickness of each coat. Using your Dulux Protective Coating Representative's coating specifications will assist you to achieve the following outcomes:

1. Fairer tenders – this creates a level playing field for your contractors, as their tenders must conform to your specifications.
2. Easier choice of contractor – when all tenderers are pricing the job based on the same set of specifications, your selection process becomes simpler.
3. More control over what you get – your Dulux Representative can work with your contractor to ensure that the correct products are supplied, and in sufficient quantity, to do the job properly.
4. On-site support – Your Dulux Representative offers on-going assistance to you and your maintenance crew.
5. A durable asset protection system that will be aesthetically pleasing, functional and easy to maintain.

Contact your local Dulux Protective Coatings Representative today for an obligation-free visit to your plant or factory for comprehensive surface preparation and coating specifications or detailed maintenance schedules to protect your assets.

CONTACT US

For a completely obligation-free consultation, please do not hesitate to contact us.

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PAPUA NEW GUINEA

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