# DUREBILD® STE

## Surface Tolerant High Solids Epoxy Coating — PC 237

**FEATURES**
- HIGH PERFORMANCE SURFACE TOLERANT MAINTENANCE COATING
- CAN BE APPLIED OVER A WIDE RANGE OF WELL-ADHERING AGED COATINGS
- DESIGNED FOR EASY BRUSH, ROLL, AND SPRAY APPLICATION

**USES**
DUREBILD® STE has been developed specifically for Australian and New Zealand conditions. Suitable for new work, it is principally used as a maintenance coating with excellent surface tolerance capability for power tool-prepared steel and/or tightly adhering coatings. DUREBILD® STE is suitable for use on a wide range of substrates from prepared steel and non-ferrous metals to concrete. Quickturn® and Cold Cure hardeners are available to promote faster dry times in standard and cooler application conditions.

**SPECIFICATIONS**
- APAS 2973 & 2973F: assessed and confirmed to meet all requirements on specific certified products
- Certificate of test to AS/NZS 1530.3:1999 available for specific coating system and substrates.
- Suitable for use as an anti-carbonation coating system when used with Weathermax® HBR in accordance with AS 4548.5 Appendix C & D
- Conforms to AS/NZS 3750.1

Refer to a Dulux Protective Coatings Consultant for details on certified systems and specifications needs.

## RESISTANCE GUIDE

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| **WEATHERABILITY** | Will yellow with time and chalk on exterior exposure. Neither yellowing nor chalking detracts from the protective properties of the coating. Use a weatherable topcoat if required for appearance and UV resistance. |
| **HEAT RESISTANCE** | Up to 120°C dry heat. |
| **SALTS** | Excellent resistance to neutral and alkali salts. Aluminium version is not recommended for alkaline conditions. |
| **ACIDS** | Suitable for splash and spillage of mild acids. Aluminium version is not recommended for acidic conditions. |
| **SOLVENTS** | Resists splash and spillage of most hydrocarbon solvents, refined petroleum products & most alcohols. |
| **WATER** | Excellent resistance to fresh and salt water. Tinted colours and aluminium are not recommended for immersion. Contact PC consultant for immersion use with Quickturn®. |
| **ALKALIS** | Suitable for splash and spillage of strong alkalis. Aluminium version is not recommended for alkaline conditions. |
| **ABRASION** | Good when fully cured. |

## TYPICAL PROPERTIES AND APPLICATION DATA (STANDARD HARDENER)

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|---|---|
| **CLASSIFICATION** | Surface Tolerant Epoxy |
| **FINISH** | Semi Gloss |
| **COLOUR** | Broad range of tinted colours, factory packed colours and MTO are available. |
| **COMPONENTS** | Two |
| **VOLUME SOLIDS** | >83% (White/Light base) |
| **VOC LEVEL** | <230 g/L (White, untinted) |
| **FLASH POINT** | 41°C |
| **POT LIFE** | 90 Minutes (4 litre kit, 25°C) |
| **MIXING RATIO V/V** | Part A : 4 Part B : 1 |
| **THINNER** | 920-08925 Dulux® Epoxy Thinner |
| **THINNER (IMMERSION)** | 965-63020 Dulux® CR Reducer |
| **PRODUCT CODE** | 775-63001 White/Light Base<br>775-63002 Deep Base<br>775-63003 Clear Base<br>775-38678 N35 Light Grey<br>775-39141 Y14 Golden Yellow<br>775-50585 Black<br>775-50570 Aluminium<br>976-84539 Standard Hardener<br>976-84685 Cold Cure Hardener<br>976-H0248 Quickturn® Hardener |

### APPLICATION CONDITIONS

| | Min | Max |
|---|---|---|
| **Air Temp.** | 10°C | 40°C |
| **Substrate Temp.** | 10°C | 40°C |
| **Relative Humidity** | | 85% |
| **Concrete Moisture** | | <6% |

### COATING THICKNESS (MICRONS)

| | Min | Max | Recommended |
|---|---|---|---|
| **Wet film per coat (µm)** | 120 | 250 | 150 |
| **Dry film per coat (µm)** | 100 | 210 | 125 |

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| **SUITABLE SUBSTRATES** | Prepared rusty steel, aged tightly adhering coatings, prepared concrete, CFC, aluminium and galvanised steel. |
| **PRIMERS** | Not required |
| **TOPCOATS** | Not required |
| **APPLICATION METHODS** | Brush, roller, conventional or airless spray. Aluminium version – spray only. |

## DRYING CHARACTERISTICS AT 125 µm DRY FILM THICKNESS* (STANDARD HARDENER)

| Temperature | Humidity | Touch | Handle | Full Cure | OVERCOAT Min | OVERCOAT Max[1, 2] |
|---|---|---|---|---|---|---|
| 10° C | 50% | 14 Hours | 36 Hours | 7 Days | 36 Hours | 4 Weeks |
| 15° C | 50% | 10 Hours | 24 Hours | 7 Days | 24 Hours | 4 Weeks |
| 25° C | 50% | 6 Hours | 14 Hours | 7 Days | 14 Hours | 4 Weeks |

*These figures are a guide only, as ventilation, film thickness, humidity, thinning and other factors will influence the rate of drying.
[1]**If the maximum overcoat interval is exceeded then the surface MUST be abraded to ensure maximum intercoat adhesion.**
[2]**NOTE:** Figures shown are for non-immersion conditions. **When used for immersion conditions the maximum overcoat interval is 3 days.** The coating MUST be fully cured and completely solvent-free prior to being placed under immersion conditions. Refer to the PRECAUTIONS section.

**SPREADING RATE** WITH STANDARD HARDENER ASSUMING NO LOSSES

**6.7 square metres per litre equals 125 µm dry film thickness**
NOTE: Practical spreading rates will vary depending on such factors as application method, ambient conditions and surface porosity and roughness.

# DUREBILD® STE

## COLD CURE HARDENER

### COATING THICKNESS (MICRONS)

| | Min | Max | Recommended |
|---|---|---|---|
| Wet film per coat (µm) | 120 | 250 | 150 |
| Dry film per coat (µm) | 100 | 210 | 125 |

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|---|---|
| SOLIDS BY VOLUME | >85% (White/Light Base) |
| VOC LEVEL | <210 g/L (White, untinted) |
| FLASH POINT | >23°C |
| POT LIFE | 60 Minutes (4 litre kit, 25°C) |

### APPLICATION CONDITIONS

| | Min | Max |
|---|---|---|
| Air Temperature | 5°C | 30°C |
| Substrate Surface Temperature | 5°C | 30°C |
| Relative Humidity | | 85% |
| Concrete Moisture Content | | <6% |

## DRYING CHARACTERISTICS AT 125 µm DRY FILM THICKNESS* (COLD CURE HARDENER)

| | | | | | OVERCOAT | |
|---|---|---|---|---|---|---|
| Temperature | Humidity | Touch | Handle | Full Cure | Min | Max[1, 2] |
| 5° C | 50% | 14 Hours | 28 Hours | 7 Days | 28 Hours | 4 Weeks |
| 10° C | 50% | 13 Hours | 24 Hours | 7 Days | 24 Hours | 4 Weeks |
| 15° C | 50% | 12 Hours | 18 Hours | 7 Days | 18 Hours | 4 Weeks |
| 25° C | 50% | 6 Hours | 9 Hours | 7 Days | 9 Hours | 4 Weeks |

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

[1]**If the maximum overcoat interval is exceeded then the surface MUST be abraded to ensure maximum intercoat adhesion.**

[2]**NOTE:** Figures shown are for non-immersion conditions. **When used for immersion conditions the maximum overcoat interval is 3 days.** The coating MUST be fully cured and completely solvent free prior to being placed under immersion conditions. Refer to PRECAUTIONS section.

**SPREADING RATE**
WITH COLD CURE HARDENER ASSUMING NO LOSSES

**6.7 square metres per litre equals 125 µm dry film thickness**
NOTE: Practical spreading rates will vary depending on such factors as application method, ambient conditions and surface porosity and roughness.

## QUICKTURN® HARDENER[#]

### COATING THICKNESS (MICRONS)

| | Min | Max | Recommended |
|---|---|---|---|
| Wet film per coat (µm) | 120 | 250 | 150 |
| Dry film per coat (µm) | 100 | 210 | 125 |

| | |
|---|---|
| SOLIDS BY VOLUME | >85% (White/Light Base) |
| VOC LEVEL | <210 g/L (White, untinted) |
| FLASH POINT | >23°C |
| POT LIFE | 45 Minutes (4 litre kit, 25°C) |

### APPLICATION CONDITIONS

| | Min | Max |
|---|---|---|
| Air Temperature | 5°C | 30°C |
| Substrate Surface Temperature | 5°C | 30°C |
| Relative Humidity | | 85% |
| Concrete Moisture Content | | <6% |

## DRYING CHARACTERISTICS AT 125 µm DRY FILM THICKNESS* (QUICKTURN® HARDENER)

| | | | | | OVERCOAT | |
|---|---|---|---|---|---|---|
| Temperature | Humidity | Touch | Handle | Full Cure | Min | Max[1] |
| 5° C | 50% | 10 Hours | 18 Hours | 7 Days | 18 Hours | 7 Days |
| 10° C | 50% | 7.5 Hours | 13 Hours | 7 Days | 13 Hours | 7 Days |
| 15° C | 50% | 5 Hours | 9 Hours | 7 Days | 9 Hours | 7 Days |
| 25° C | 50% | 2.5 Hours | 4.5 Hours | 7 Days | 4.5 Hours | 7 Days |

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

[1]**If the maximum overcoat interval is exceeded then the surface MUST be abraded to ensure maximum intercoat adhesion.**

[#]**NOTE:** Refer to Dulux Protective Coatings Consultant for use of Quickturn® hardener in immersion services.

**SPREADING RATE**
WITH QUICKTURN® HARDENER ASSUMING NO LOSSES

**6.7 square metres per litre equals 125 µm dry film thickness**
NOTE: Practical spreading rates will vary depending on such factors as application method, ambient conditions and surface porosity and roughness.

# DUREBILD® STE

## TYPICAL SYSTEMS

This is a guide only and 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<br>NEW | Very high corrosivity<br>(AS2312.1 Cat C5)<br>System PUR 5 | Abrasive blast clean AS1627.4<br>Class 2.5 | 1st Coat<br>2nd Coat<br>3rd Coat | Zincanode® 402<br>Durebild® STE<br>Weathermax® HBR | 75 µm<br>200 µm<br>100 µm |
| STEEL<br>NEW | Medium Corrosivity<br>(AS2312.1 Cat C3)<br>System ACC1 | Abrasive blast clean AS1627.4<br>Class 2.5 | 1st Coat<br>2nd Coat | Durebild® STE<br>Acrathane® IF | 125 µm<br>50 µm |
| STEEL<br>NEW OR<br>MAINTENANCE | Medium Corrosivity<br>(AS2312.1 Cat C3)<br>System PUR1 | Power tool clean AS1627.2 St 3 or<br>Abrasive blast AS1627.4 Class 2 | Spot Prime<br>1st Coat<br>2nd Coat | Durebild® STE<br>Durebild® STE<br>Weathermax® HBR | 125 µm<br>125 µm<br>100 µm |
| STEEL<br>NEW OR<br>MAINTENANCE | Immersion | Abrasive blast clean AS1627.4<br>Class 3.0 | 1st Coat<br>2nd Coat | Durebild® STE<br>Durebild® STE | 200 µm<br>200 µm |
| ALUMINIUM | Exterior/Interior | Clean, degrease and abrade<br>surface | 1st Coat<br>2nd Coat | Durebild® STE<br>Luxathane® HPX | 125 µm<br>70 µm |
| GALVANISED<br>STEEL | Exterior | Degrease and whip blast | 1st Coat<br>2nd Coat<br>3rd Coat | Durebild® STE<br>Durebild® STE<br>Weathermax® HBR | 125 µm<br>125 µm<br>100 µm |
| GALVANISED<br>STEEL | Exterior | Degrease and whip blast | 1st Coat<br>2nd Coat<br>3rd Coat | Durebild® STE<br>Ferreko® No. 3<br>Ferreko® No. 3 | 125 µm<br>100 µm<br>100 µm |
| CONCRETE | Exterior | Remove release agents and other<br>surface contaminants | 1st Coat<br>2nd Coat | Durebild® STE<br>Weathermax® HBR | 125 µm<br>100 µm |

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

### SURFACE PREPARATION

**Steel**: Round off all rough welds, sharp edges to a 2mm radius, and remove weld spatter. Degrease in accordance with AS1627.1. Abrasive blast clean to a minimum of AS1627.4 Class 2 ½, using ISO 8501-1 as a pictorial guide for acceptance depending upon rust grade present at start of works

**Immersed steel**: Abrasive blast clean to AS1627.4 Class 3, using ISO 8501-1 as a pictorial guide for acceptance depending upon rust grade present at start of works. Remove all dust by brushing or vacuum cleaning

**Steel where abrasive blast cleaning is not viable**: Rust, mill scale, oxide deposits and *loose aged paint films on metal surfaces must be removed by power tool cleaning according to AS1627.2, using ISO 8501-1 as a pictorial guide for acceptance to St3 depending upon rust grade present at start of works. Coating performance is proportional to the degree of surface preparation.

*** Material is considered adherent if it cannot be removed by lifting with a dull flexible putty knife. See SSPC SP 3, "Power Tool Cleaning" Section 2.3 if a definition is required for what constitutes a dull putty knife.**

**Galvanised steel**: Round off all rough welds, sharp edges and zinc dags and remove weld spatter. Clean surface in accordance with AS1627.1. Whip blast the substrate following the procedures laid out in AS 2312.2, Section 7.5.3, "Preparation for Painting", taking care not to damage the galvanising layer. Remove all dust by vacuum cleaning.

**Concrete**: Diamond grind, track or light shot-blast, and/or whip blast the concrete to remove laitance and to provide a suitable profile for the system being installed. ICRI Guideline 310.2R CSP 2-3 for floors, ICRI CSP 5-6 for concrete tanks. Remove all dust by vacuum cleaning. Check moisture content of the floor prior to painting*. Fill any large cracks or voids with Luxepoxy® Filler.

*Allow new concrete to cure a minimum of 28 days at 24°C. To minimise the risk of moisture interference, Dulux recommends the following two tests be performed prior to coating – ASTM F2659 – 10 "Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and Other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter"(moisture content not to exceed 6%) and ASTM D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no visible moisture present).

If there is any concern about moisture problems with the concrete slab, or for projects greater than 500m2, at least one of the following more accurate quantitative test methods should be used - ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed 1.4 kilograms (3 pounds) per 93 square metres (1,000 square feet) in a 24 hour period), ASTM F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (as referred to in AS 1884-2012, relative humidity should be less than 75%) Note: The testing listed above cannot guarantee avoidance of future moisture related problems particularly with existing concrete slabs. This is especially true if the use of an under-slab moisture vapor barrier cannot be confirmed or concrete contamination from oils, chemical spills, unreacted silicates, chlorides or Alkali Silica Reaction (ASR) is suspected.

### APPLICATION

Mix each can thoroughly using a power mixer until the contents are uniform. Ensure bases have been tinted to the correct colour before use. DULUX ASSUMES NO RESPONSIBILITY FOR THE APPLICATION OF INCORRECT COLOUR. Mix the contents of both packs together thoroughly using a power mixer. Box all containers before use to ensure colour consistency. Remix thoroughly before use.

# DUREBILD® STE

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| **BRUSH/ROLLER** | Apply even coats of the mixed material to the prepared surface. When brushing and rolling additional coats may be required to attain the specified thickness. |
| **CONVENTIONAL SPRAY** | Thinning is not normally required, however a small amount (5% or less by volume) of Dulux® Epoxy Thinner (920-08925) can be added. |
| | Typical Set-up — Graco AirPro: 1.8mm (239542); Pressure at Triton 308: 70-100 kPa (10-15 p.s.i.); Pressure at Gun: 380-410 kPa (55-60 p.s.i.) |
| **AIRLESS SPRAY** | Standard airless spray equipment such as a Graco Xtreme 45:1 or 56:1 with a fluid tip of 17–21 thou (0.43-0.53mm) and an air supply capable of delivering 550-690 kPa (80 -100 psi) at the pump. Thinning is not normally required but up to 50ml/litre of Dulux® Epoxy Thinner (920-08925) may be added to aid application. |
| **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. Do not apply at temperatures below 10°C when using standard hardener or below 5°C when using Cold Cure hardener. Do not apply at relative humidity above 85% or when the surface is less than 3°C above the dewpoint. **When used for immersion conditions** the maximum overcoat interval is 3 days at 25°C. The coating MUST be fully cured and solvent free prior to being placed under immersion conditions. For best results in water immersion conditions replace Dulux® Epoxy Thinner (920-08925) with Dulux® CR Reducer (965-63020). DO NOT use Aluminium containing colours (ie Mid Grey and St Enoch Grey) for immersion or for exposure to acidic or alkaline conditions. DO NOT use Cold Cure hardener in immersion conditions. This product is not a decorative coating, and colour variations will occur due to different application techniques. Coatings containing micaceous iron oxide are prone to marring but this will not affect the protective properties. DO NOT use as a primer over galvanised steel when using Cold Cure hardener as delamination can occur. Use of fast or low temperature hardeners may result in increased yellowing and a reduction of gloss level. |
| **CLEAN UP** | Clean all equipment with Dulux® Epoxy Thinner (920-08925) immediately after use. |
| **OVERCOATING** | For atmospheric service: Assess the condition of aged coatings and the viability of an overcoat system in accordance with the latest versions of SSPC TU No.3, ASTM D 5064, and ASTM D 5065. Consult your local Dulux® Protective Coatings Consultant for specific surface preparation and coating system recommendations.<br>For tidal and immersion service: Full removal of existing coating will be required. |
| **SAFETY PRECAUTIONS** | **Read 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 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 AS 1337 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 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 coated with this paint. Grind back coating 100 to 152 mm from the area to be welded before welding. |

## COMPANY INFORMATION


Dulux Protective Coatings a division of

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## PACKAGING, TRANSPORT AND STORAGE

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|---|---|
| PACKAGING | Available in 4 litre and 15 litre packs |
| TRANSPORTATION WEIGHT | 1.73 kg/litre (Average of components) |
| DANGEROUS GOODS | Part A: Class 3 UN 1263<br>Part B: Class 8,3 UN 2734 |