

DULUX TRADE TUFFCOTE WATER-BASED EPOXY ENAMEL

TECHNICAL DATA SHEET

Version 1 – 2018 MARCH

THIS ISSUE SUPERSEDES ALL PREVIOUS PUBLICATIONS

PRODUCT DESCRIPTION

A water-based epoxy enamel for interior use in food and pharmaceutical industries as well as for maintenance in other confined areas

PRODUCT USES

- Does not contain any solvents (zero VOC) and can be used as a floor coating in nuclear, abattoirs, wine farms, dairies and pharmaceutical industries, as well as for maintenance in confined areas.
- Chemical resistant finish coat on steel and concrete surfaces in chemical plants, mines and oil refineries.
- Clean silica sand can be stirred into freshly mixed paint to give a non-slip finish on floors.

FEATURES AND BENEFITS

- Environmentally friendly, water based, and equipment is cleaned with water.
- Almost odourless during application and curing.
- Non-specialist application – can be applied by the average “do-it-yourselfer”.
- Resistant to fresh and salt water when fully cured – withstands continuous immersion up to 60°C.
- Chemical resistant finish coat on steel and concrete surfaces in chemical plants, oil refineries and other steel structures.
- Withstands nuclear radiation and is easily decontaminated.
- Completely free of Mesityl Oxide, and is therefore approved for use in breweries.
- The cured dry film is non-toxic (does not contain lead, solvents, or other toxic chemicals)
- When properly applied and cured, the product is completely safe for direct or accidental food contact, and can safely be used on equipment and working spaces in the food and dairy industry.
- Once fully cured (after 4 days), the product can withstand cold temperatures as low as -40°C.
- Can be used on equipment and working spaces in nuclear, pharmaceutical, and food industries (abattoirs, wine farms, dairies), as well as for maintenance in confined areas.

PRODUCT INFORMATION

Appearance	Gloss
Colour	Dairy White and Light Grey
Binder Type	Water-borne Polyamide cured Epoxy
Density at 23°C	Approx.: 1.90 Base and 1.28 Mixed

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PRODUCT INFORMATION

Solids Content	By weight: Approx. 56% By volume: Approx. 43%
Packaged Viscosity	Viscosity at 23°C: Approx. 80 KU
Spreading Rate at 50µm DFT	Brush: Approx. 8m ² per litre at 50µm DFT Spray: Approx. 7m ² per litre at 50µm DFT Depending on surface porosity, profile and application method
Recommended DFT per coat	Min. 50µm. Max. 60µm.
Recommended WFT per coat	Min. 110µm. Max. 140µm (Higher film build will increase resistance)
Flash Point	Non-flammable

APPLICATION INFORMATION

Mixing	Stir the Base and Curing Agent separately until homogeneous with a flat paddle. Then add the Curing Agent to the Base and stirring until homogeneous with a flat paddle
Mixing Ratio	4 parts Base to 1 part Curing Agent by volume.
Application Surface conditions	Surface Temperature between 10 - 35°C. Relative Humidity between 10 - 85 % OR 2°C above dew point minimum.
Application methods	Dulux Trade Tuffcote Water-based Epoxy Enamel is packaged in two components in the proper proportions which must be mixed together before use. See Mixing Do not mix more material than will be used within 1 hour. N.B. The end of the pot life will <u>not</u> be shown by a viscosity increase (gelation). Material <u>must</u> be used within 1 hour. <u>Airless Spray</u> : Apply direct as supplied, using a 0,533mm or larger tip. If necessary, thin up to 15%. <u>Brush</u> : Ready for use when mixed. Thin 5% by volume with portable water on hot days. <u>Roller</u> : Ready for use when mixed. Lambwool or mohair types are preferred.
Thinner	Ready for use when mixed. Potable water if required for spray application.
Induction Period	5 minutes 25°C (i.e. do not paint immediately after mixing).
Pot Life	Use within one (1) hour of mixing. The end of the pot life will <u>not</u> be shown by a viscosity increase (gelation). *NB does not gel for 6 to 10 hours

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APPLICATION INFORMATION

Drying Time	Dry to handle: 8 hours at 25°C.
Recoating Time	24 hours minimum; up to 7 days maximum at 25°C. (Drying times will be extended during cold, wet or humid conditions.)
Cleaning of equipment	After use, remove as much product as possible, and then clean immediately with water.
Substrates	Correctly prepared and primed cement plaster, concrete, mild steel & iron, galvanised iron and aluminium.
Precautions:	<p>Do not apply during cold (below 10°C) or wet weather.</p> <p>Do not apply directly to bare metal surfaces.</p> <p>Curing at temperatures below 15°C is slow, thus if 'cold-rooms' are to be painted, they must be brought up to 20-25°C or higher for 72 hours to assist with curing.</p> <p>High temperatures will shorten pot life and drying times, while low temperatures and high relative humidity will lengthen drying time. The relative humidity must be below 90% during application.</p> <p>Equipment and brushes must be cleaned immediately with tap water.</p> <p>Only suitable for interior use - the film tends to yellow and chalk on exposure to sunlight.</p> <p>Not suitable for direct application to powdery or friable surfaces whether previously painted or not.</p> <p>Use Dulux Trade Hi-Chem Epoxy Enamel for a brilliant white finish.</p> <p>Although Dulux Trade Tuffcote Epoxy Enamel can be used for squash court walls is it not suitable for squash court floors.</p>
Coats Required	Apply two to three finishing coats to new surfaces to achieve a minimum continuous closed film of 100µm and solid colour. For non-skid pedestrian areas, three full coats will be required. See "SURFACE PREPARATION".

SURFACE PREPARATION

Plaster sand should comply with SABS 1090 requirements. Plaster mix must be applied at a minimum thickness of 10mm, curing to a hard and sound finish, free of soft and friable material. MPA strength must comply with SABS 0164-1 (10MPa=2, 6:1 and 5MPa=4:1). Ensure that surfaces are sound and free from dust, oil, grease, dirt, and debris. Surfaces must be thoroughly dry - no more than 12% moisture content.

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SURFACE PREPARATION

NEW SURFACES

Cement Plaster, Concrete (non-friable)

- Concrete: Freshly rendered concrete should have dried/cured for a minimum of 6 weeks, the moisture content of the concrete should be below 12% before any preparation and painting is attempted. Grind off lips, shutter marks and remove laitance.
- Cement Plaster: It is recommended that fresh plaster should be allowed 1 week drying for every 5mm thickness; and longer in cold or damp weather. Ensure the entire surface is sound and clean. Remove any plaster spills, and all loose debris from the surface, ensuring an even and clean surface.
- Clean thoroughly with a water-miscible degreaser to remove dirt and debris, as well as oil and grease. Rinse with clean water.
- Acid etch the surface with a solution of hydrochloric acid to remove laitance, uncured cement, etc. as follows: On steel or power floated concrete (very smooth), use one volume hydrochloric acid to two volumes water. More than one application may be necessary to achieve a paintable surface. On wood floated concrete (rough), use one volume hydrochloric acid to four volumes water. **N.B.** Hydrochloric acid is corrosive - please wear protective clothing, gloves, masks and eye goggles against splashes.
- Allow the acid solution to react for 15 minutes and then wash away all acid with copious amounts of clean water.
- Remove excess water and allow thorough drying – no more than 12% moisture content.

Floors Concrete – NON-SKID Pedestrian areas (walkways and passages)

- Follow the cleaning and etching instructions under surface preparation, new surfaces, Cement Plaster, Concrete (non-friable)
- Coat 1 – Apply and, while it is still wet, sprinkle dry, silica sand over the surface. (The silica sand should be sifted through a 250µm sieve and retained on a 210µm sieve. A practical spreading rate is 500 grams of sand per square meter of painted floor.)
- Coat 2 - The following day, sweep off any excess sand and apply a further coat to seal the surface. Allow overnight drying again
- Coat 3 – Apply 3rd coat
- Observe recoating times as stated in this technical data sheet.

Galvanised Iron, Aluminium and all Non-ferrous Metals

- Remove all traces of temporary protective coating, dirt and grease from the surface with **Dulux Galvanised Iron Cleaner**. Ensure complete removal of **Dulux Galvanised Iron Cleaner** by rinsing with running water. A water-break free surface indicates thorough cleaning - running water should not form droplets. If a water-break free surface was not achieved, repeat the cleaning process. Prime immediately after cleaning.
- Prime with one to two coats **Dulux Trade Corrocote 3 Metal Etch Primer**, depending on the severity of the conditions. Two coats recommended for coastal conditions.

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SURFACE PREPARATION

NEW SURFACES

Galvanised Iron, Aluminium and all Non-ferrous Metals - Continue

- Allow 48 hour curing time before over coating with **Dulux Trade Tuffcote Epoxy Enamel**

Mild Steel and Iron

- Remove all shop-primer and corrosion mill scale and rust by abrasion blasting cleaning to Sa2½ minimum standard. Hand cleaning is not recommended.
- Wet grit blasting may be used but should be followed by a light dry blast unless an inhibitor is added to the water.
- Ensure that the blasted areas are dry and free of grease and dust. A solvent wash (rags dipped in lacquer thinner) may be used. Change the rags frequently and allow drying.
- Apply one or two coats **Dulux Trade Corrocote 3 Metal Etch Primer**, depending on the severity of the conditions. Two coats are preferred for coastal conditions.
- Allow 48 hour curing time before over coating with **Dulux Trade Tuffcote Epoxy Enamel**

PREVIOUSLY PAINTED SURFACES

- The existing coating system should be sound, well bonding to the substrate, dry and free of contaminants such as oil, grease, rust and loose paint. Although inter-coat adhesion to conventional water-based and solvent-based coating and epoxy enamels will not present a problem it is still advisable do a test area to ensure the underlying coating adhesion is not compromised when over-coated with **Dulux Trade Tuffcote Epoxy Enamel**.
- Remove failing coatings back to a sound substrate. Abrade the existing coating to a matt finish and feather the edges of the tightly bonded paint with abrasion, treat as new surfaces.
- Aged or weathered epoxies or urethanes must be well sanded to provide a profile for adhesion.

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HEALTH AND SAFETY INFORMATION

This product contains no added lead. Avoid contact with skin or eyes. Keep out of reach of children. If accidentally swallowed, seek medical advice immediately and show this container to the doctor. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes.

If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used. Do not empty into drains or watercourses.

Ensure good ventilation during application and drying. It is recommended to use suitable protective clothing and equipment. To avoid the risk of spillage, always store and transport containers in a secure upright position. Refer to Material Safety Data Sheet for complete information.

ADDITIONAL INFORMATION

Packaging	5 Litre (4 parts Base to 1 part Curing Agent by volume)
Storage Conditions	Store under cool dry conditions away from direct sunlight, heat and extreme cold.
Disclaimers	<p>Colour references are as accurate as modern printing will allow. Please refer to colour cards for an accurate representation of the colour.</p> <p>Among others, the following factors may affect final colour appearance: product sheen and texture, colour and light reflections, application, surface texture and preparation.</p> <p>For best colour and sheen consistency, it is advisable to use containers of the same batch number, to mix different batches together in a large container, or to finish in a corner before starting a new container.</p>

TDS STANDARD DISCLAIMER

The recommendations contained herein are given in good faith and meant to guide the specifier or user in accordance with good painting practices. They are gained from our tests and experiences and are believed to be accurate and reliable. No warranty/guarantee is implied by the recommendations contained herein since the conditions of use; application method, substrate and cleanliness of the substrate are beyond Dulux control.

Important Note; Technology may change with time, necessitating changes to this Technical Data Sheet (TDS).

It is the responsibility of the user to ensure that the latest TDS is being used for reference. Dulux Technical Data Sheets are available on our website www.duluxtrade.co.za or please contact: Dulux On-Line on 0860 330 111. Email ZA.Helpline@akzonobel.com

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