ACOTHANE UK LTD

INSTRUCTIONS FOR USE DOCUMENT

ACOTHANE DW

A COATING AND LINING FOR WATER RETAINING STRUCTURES INCLUDING TANKS, VESSELS, RESERVOIRS, PIPELINES, PIPE RANDOM LENGTHS, BENDS, FITTINGS AND VALVES.

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1. Introduction

This document covers factory and on site applications of Acothane DW to internal and external surfaces of metallic, cementitious and GRP structures holding or transporting water intended for human consumption.

Acothane DW is suitable for factory applied coatings to pipes and fittings and in situ coating of tanks, vessels and small components such as valves or short lengths of pipe.

2. Product Description

Acothane DW is a two component solvent free 100% solids polyurethane coating and lining suitable for all substrates. The associated sealer (Acothane LV Sealer) is also a two component solvent free polyurethane coating that should be used for application onto concrete substrates only.

Acothane DW is formulated for internal and external protection of such substrates providing a surface hard flexible long term corrosion and erosion resistant coating.

The base component for Acothane DW is Cream or Blue.

The activator component for Acothane DW is an amber liquid.

The base component for Acothane LV Sealer is an amber liquid.

The activator component for Acothane LV Sealer is an amber liquid.

Mixed and applied Acothane DW is Cream or Blue depending on base colour. There is virtually no colour change to the base material when it is mixed with the activator. See Section 5.

Mixed and applied Acothane LV Sealer is Amber. There is virtually no colour change to the base material when it is mixed with the activator -see Section 5.

Packaging for Spray Application: Full 200 litre and 20 litre drums of base and activator.

Packaging for Hand Application: Composite 2 and 4 litre packs for Acothane DW and 3 $^{1}/_{2}$ litre packs for Acothane LV Sealer

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3. Product Storage

Acothane DW and Acothane LV Sealer shall be stored in the original sealed containers at between 5 ºC and 30 ºC and should be used within 2 years of purchase.

4. Surface Preparation

Steel Surfaces.

All surfaces shall be free from oil, grease and other contamination prior to abrasive blast cleaning.

Metallic surfaces should be abrasive blast cleaned to a minimum Sa2 ½ (industry standard) in accordance with ISO 8501-1.

Prior to blast cleaning all sharp protuberances, surface lamination, weld spatter etc. shall be removed by thorough cleaning and grinding.

Immediately after blast cleaning all dust, residues and debris left on the surface shall be removed.

Flash rusting of an abrasive blast cleaned surface can quickly occur if high humidity exists or substrate / dew point differentials are reduced. To restrict the onset of flash rusting humidity should be maintained below 50% and the surfaces should be maintained at least 3 ºC above dew point. This may require the use of dehumidification equipment and / or convection heaters.

Acothane DW is a surface tolerant coating and will accommodate a degree of blooming and flash rusting.

Where surfaces have degraded between Sa2 ½ and Sa2 all loose oxide should be removed with a stiff brush.

Concrete Surfaces

Any coal tar, bitumen, asphalt or old coatings based on these materials should be removed together with any broken or loose concrete.
Further surface preparation will consist of light abrasive blast cleaning or water jetting to remove all surface contamination.

Spalled areas and major voids should be made good using a light weight, high strength, shrinkage compensating mortar approved under Regulation 31[4]a. These products are listed in section C5 of the List of Approved Products published by the Drinking Water Inspectorate and copies can be downloadedfrom
http://dwi.defra.gov.uk/drinking-water-products/approved-products/soslistcurrent.pdf

New concrete should be lightly abrasive blast cleaned to remove all laitence and curing agents.

Following above preparation methods all surfaces should receive a fairing coat (1-3 mm) of Regulation 31[4] a approved cementitious lining finished with a damp sponge to create a profiled surface comparable to coarse abrasive paper. These products are listed in Part C5 of the List of Approved Products.

If a fairing coat is applied, it should be allowed to cure for a minimum of 72 hours and have a moisture content of less than 7% before the surface is sealed using Acothane LV Sealer, prior to the full application of Acothane DW as described above.

GRP Surfaces

Preparation can be by light abrasive blasting or thorough mechanical abrasion to create a suitable profile for maximum adhesion of Acothane DW.

After surface preparation all dust and abrasive residues shall be removed by thorough sweeping or vacuuming.

5. Product Application

Stripe Coat.

To ensure the specified film thickness is achieved at welds, bolt heads, back to back plates and protuberances a stripe coat of Acothane DW shall be applied by brush application prior to the main coating application. The maximum overcoating interval without further surface preparation shall be 24 hours.

Spray Application – Acothane DW.

Spray application is carried out via hot spray equipment approved by Acothane UK Limited

Acothane UK Limited can provide a spray machine with engineer supervisor.

The spray equipment shall be capable of heating the base component up to 65 ºC in the supply container with maintenance of heat through the supply hoses and whip

end to ensure a mixed product temperature of 35 ºC to 40 ºC at the spray tip is achieved.

Spray application for tanks, vessels, water retaining structures and reservoir roofs is carried out in wet-on-wet increments from a hand held spray gun to achieve the specified film thickness in a single wet-on-wet coating application.

Spray application for pipe internals is carried out by internal pipe spray moles or spinning heads in a single wet-on-wet spray application to achieve the specified film thickness.

Cartridge Gun Spray Application

Acothane DW can also be applied with the Acothane DW Cartridge Spray Gun utilising prefilled cartridges which are fitted to the cartridge spray gun for mixing and spraying providing a single spray application similar to plural component spray application.

Brush and Roller Application – Acothane DW.

Acothane DW is supplied in pre-measured Base and Activator units which must be thoroughly mixed together prior to use.

The Base component should be stirred and whilst stirring the full contents of the Activator container should be added and mixed until homogenous (as described below).

To ensure complete mixing the initial mixed material in the container shall be transferred to a clean plastic mixing pot / container and the original supply container scraped out to remove all initial mixed material.

Further mixing shall be carried out to ensure a thorough mix to produce a homogenous liquid.

Application by Brush and Roller can now be undertaken within the stated pot life (30 minutes @ 25°C) of the product.

Multi coats will be required by brush and roller to achieve the specified film thickness on vertical surfaces and this will usually be two or three coats depending on application method. The minimum time for application of successive coats is when the previous coat is touch dry.

Wet film thickness readings will verify the thickness achieved and, being solvent free, wet film readings will correspond to dry film thickness.

Brush and Roller Application – Acothane LV Sealer.

Acothane LV Sealer is supplied in pre-measured Base and Activator units which must be thoroughly mixed together prior to use.

The Base component should be stirred and whilst stirring the full contents of the Activator container should be added and mixed until homogenous.
These materials easily mix together and continious stirring for 2 – 3 minutes using a pallet knife or other suitable mixing device should ensure the base and activator are fully mixed.

To ensure complete mixing the initial mixed material in the container shall be transferred to a clean plastic mixing pot / container and the original supply container scraped out to remove all initial mixed material.

Further mixing shall be carried out to ensure a thorough mix to produce a homogenous liquid as described above.

Application by Brush and Roller can now be undertaken within the stated pot life (35 minutes @ 25°C) of the product.

Multi coats may be required by brush and roller on porous substrates to achieve a resin rich surface. The minimum time for application of successive coats is when the previous coat is touch dry.

6. Environmental Conditions and Final Cure Times

During application the surface temperature should be maintained above 3 ºC of dew point and relative humidity shall not exceed 90%.

The applied coating is quickly resistant to water splashing and can tolerate water immersion after its initial set, (approximately 24 hours) and will continue to cure under water immersion without detriment to its performance.

Return to Service Requirements: 72 hours at 7 ºC or 7 days at 3 ºC, followed by cleaning and disinfection to water undertaker's procedures.

The coating should be checked for film thickness and coating integrity. If recoating or repairs are necessary then re-prepare damaged areas and feather back the sound

coating by 50 mm and reapply Acothane DW to the specified film thickness, overlapping the sound coating to effect complete encapsulation to the repaired area.

7. Mix Ratio.

Acothane DW.

By Volume 3 parts Base to 1 part Activator

By Weight 100 grams Base to 31 grams activator

Acothane LV Sealer.

By Volume 2.5 parts Base to 1 part Activator

By Weight 100 grams Base to 48 grams activator

8. Film Thickness.

The specified film thickness is at the discretion of the client with consideration to the substrate to be coated and end use envisaged.

For steel substrates nominal film thickness shall be 1mm with a minimum of 800 microns.

For concrete and cementitious substrates the minimum film thickness shall be 1mm to accommodate the surface profile.

There is no maximum film thickness limitation with Acothane DW

9. Flushing and Disinfection.

Prior to return to service the coated surfaces shall be flushed and disinfected.

Disinfection and flushing shall be carried out in accordance with the water undertaker's procedures for the disinfection of potable water retaining structures. There is no maximum concentration for free chlorine in contact with the product.

Alternatively the guidance given in Water UK Technical Paper "Principles of water supply hygiene and technical guidance notes" shall be followed.

10. Disposal of Waste Water

Permission or consent for disposal of the used disinfectant and treated water to a sewer or watercourse must be obtained from the relevant water service company or Environment Agency, as appropriate.

11. Health and Safety

Activator
Engineering measures: Ensure there is sufficient ventilation of the area.
Respiratory protection: Self-contained breathing apparatus must be available in case of emergency. Air-fed respiratory equipment must be worn when this product is sprayed.
Hand protection: Protective gloves. Nitrile gloves. Butyl gloves.
Eye protection: Safety glasses. Ensure eye bath is to hand.
Skin protection: Protective clothing.

Base
Respiratory protection: Respiratory protection not required.
Hand protection: Protective gloves.
Eye protection: Safety glasses. Ensure eye bath is to hand.
Skin protection: Protective clothing.

Once mixed and during brush/roller application it is recommended that protective clothing, gloves and safety glasses are worn. If spraying air-fed respiratory equipment must be worn.

Full details of product health and safety requirements are given in the Material Safety Data Sheets for Base and Activator components, available on request.

12. Spillage and Waste Control.

The unreacted Base and Activator components constitute hazardous waste and shall be dealt with in accordance with the Material Safety Data Sheets (see attached) and local environmental requirements.

13. Contact details

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