



# EpiMax 655AR



## UHB Full Novolac Protective Coating

### Description

EpiMax 655AR UHB Full Novolac Protective Coating is a two component solventless, heavy duty novolac coating system designed for application to final thicknesses ranging from 500 microns through to 5 mm (5000 microns). This system eliminates a multi-coat application process. Significantly, EpiMax 655AR is formulated using unique multi-functional novolac chemistry that provides very high mechanical and chemical properties in the final applied coating. This system does not contain bisphenol A resin and is silica-free.

Sulphide-rich effluents, a warm, humid environment and long retention times create the perfect conditions for Microbiologically Induced Corrosion (MIC). MIC, a result of an acid-producing bacteria known as thiobacillus, is the principal cause of corrosion in municipal sewer systems. These micro-organisms metabolize elemental sulphur oxidized from hydrogen sulphide sewer gas and produce sulphuric acid as a waste product which then attacks the substrate. This sulphuric acid will quickly destroy ordinary concrete-based materials in a municipal sewer system.

Wastewater manholes are under constant attack from MIC, traffic loading and groundwater infiltration. In many cases, the manholes are located in the middle of busy streets, making them impossible to replace without costly pavement repairs and traffic disruption.

This system provides seamless chemically resistant protection with excellent mechanical properties and is suitable for the protection of a great variety of concrete and steel surfaces. It provides outstanding resistance against impact and wear and permanent adhesion to prepared surfaces under dry and wet exposure conditions. EpiMax 655AR is built on a further development of the well established chemical backbone of EpiMax 333AR High Build Acid Resistant Coating system.

EpiMax 655AR is applied using industry standard airless spray equipment of sufficient capacity.



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## **Advantages**

- Prevents exfiltration and infiltration
- Provides structural reinforcement to prolong life
- Flows maintained during procedure
- Clean operation as no excavation/digging is required
- Can be completed within 3-6 hours - minimizes above ground disruption

## **Typical applications**

- Manholes
- Wet wells
- Bio reactors
- Oxidation ditch systems
- Primary settling tanks
- Large diameter pipes
- Preliminary treatment areas
- Launderers and clarifiers
- Odour control bunds
- Effluent pump stations
- Sludge tanks
- Pump stations

## **Typical properties**

- VOC content: GBCA rated
- Tamper resistant: 8 hours at 25°C
- Vertical application thickness: up to 5 mm
- Excellent wastewater effluent resistance
- Set to touch time: 4 hours at 25°C
- Full cure: 7 days at 25°C
- Adhesion: primerless and exceeds concrete tensile strength
- Approved to AS/NZS 4020:2018 for contact with potable water

## **Chemical resistance**

Hydrogen sulphide ( $H_2S$ ) generation in wastewater treatment facilities is always been present. It causes corrosion in the form of sulphuric acid attack of concrete in sewer collection/treatment systems. Gaseous  $H_2S$  condenses on aerated, wet concrete surfaces; is metabolised by sulphur-oxidising bacteria and is oxidised to form dilute sulphuric acid ( $H_2SO_4$ ).

EpiMax 655AR is resistant to a wide range of chemicals in the wastewater environment.

## **Estimating data**

16 ltr EpiMax 655AR = 16 m<sup>2</sup> (assumes 1 mm dft)

## **Surface preparation**

Concrete should be at least 28 days old. Ensure the surface is clean, dry and free of additives, curing agents, oils, etc.

Prepare by mechanical means, using suitable industry approved methods as applicable, to expose firmly adhered aggregate. Allow to dry if wet. Always confirm preparation adequacy. Surface profile should exceed CSP 5 in accordance with ICRI guidelines.

Steel should be abrasive blast cleaned to AS 1627 Part 4 - 2005 to class 3 white metal and achieve profile height minimum 75 - 100 microns.

## **Priming**

Immediately protect prepared surfaces with a prime and seal coat of EpiMax 225 before application of EpiMax 655AR. Refer to EpiMax for recommendations to each specific project.

## Temperature and re-coat window considerations

	Minimum	Maximum	Notes
Pre-conditioning temperature	20°C	25°C	Pre-conditioning times will vary depending on the product starting temperature
Substrate temperature	15°C	27.5°C	Substrate temperature should be at least 3 Celsius degrees above the prevailing Dew Point
Application ambient temperature	15°C	30°C	Ambient temperature should be at least 3 Celsius degrees above the prevailing Dew Point
Re-coat window at 23°C	8 hours	16 hours	Re-coat windows are dependent on environmental conditions and should be adjusted accordingly - refer to EpiMax

## Mixing

EpiMax 655AR is pre-packaged in correct proportions for use. Thoroughly premix the complete Part A contents using a dual paddle mixer, then add the full contents of the Part B.

Thoroughly mix with the dual paddle mixer taking care to scrape the sides and base of the container. Mix the combined contents for 5 minutes on medium speed.

EpiMax does not recommend mixing part kits.

## Overcoat and re-coat considerations

**Within re-coat window at 23°C:** Thoroughly solvent wash with suitable epoxy thinner and allow the solvent to flash off before any new application. Extend wash 100 mm beyond area to be re-coated.

Ensure prepared area extends 100 mm beyond any new application.

If doubt exists regarding re-coat adhesion confidence, perform pull-off adhesion test to confirm.

**Outside re-coat window at 23°C:** Sweep blast or abrade appropriately and then solvent wash using suitable epoxy thinner.

Ensure prepared area extends 100 mm beyond any new application.

If doubt exists regarding re-coat adhesion confidence, perform pull-off adhesion test to confirm.

## Airless spray application

Typical component set up:

- 70:1 Graco King Extreme Airless
- 3/8" main line, 7,250psi rated
- 1/4" whip line, 7,250psi rated
- Gun, tip size is variable

Note: Typical inlet air pressure is 7 bar (100 psi)

and spray pressure 400 - 480 bar (6,000 to 7,000 psi).

## Performance confirmation service

EpiMax offers a mixing and curing confirmation service for EpiMax 655AR.

We provide syringes that can sample each mix and then, after curing these are tested in our lab using Dynamic Mechanical Analysis to confirm cure optimisation, and other parameters such as glass transition temperature (Tg) and material modulus.



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## Packaging

EpiMax 655AR is available in 16 litre kits (includes Part A and Part B).

It is pre-packaged in correct proportions for immediate use.

## Storage and pre-conditioning

Product should always be stored undercover and in a manner ensuring protection from extremes of temperature (>15°C <25°C), contact with moisture and other conditions that could lead to deterioration of the product.

Pre-condition product between 21°C and 25°C for 48 hours before commencing installation.

## Safety precautions

Read **Safety Data Sheet** before commencing any application. Keep away from children. Avoid contact with skin and avoid breathing vapour. Always provide adequate personal protection (gloves & goggles etc) during use. Always provide adequate ventilation, especially in confined spaces. If poisoning occurs, call Doctor or Poisons Information Centre. Phone 13 11 26. If swallowed, DO NOT induce vomiting. Give plenty of water or milk. If skin contact occurs, quickly remove contaminated clothing and wash affected areas thoroughly with soap and water.

TDG Code, EpiMax 655AR: Part A - Not Classified, Part B - UN 2735

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