

Metalox[®] - GC450

100% Volume Solids Multipurpose Colour Epoxy

PRODUCT DESCRIPTION A two component, high build 100% solids, surface-tolerant epoxy, designed for concrete and steel surfaces for atmospheric service. Metalox – GC450 has outstanding anti-corrosion resistance. It can be produced in a wide range of colours

INTENDED USES

- Single or two coat anti-corrosive coating for steel structures
- Industrial walls and floors
- Bridges
- Piping
- Pulp and paper
- Suitable coating for galvanised iron
- Machinery

FEATURES

- Good adhesion onto many existing paint surfaces
- Excellent adhesion to concrete
- Tolerant to substrate moisture
- Fast cure at ambient temperature
- Resistant to splash and spill chemicals
- Full cure down to 5°C
- Outstanding water resistance
- 100% solids (non-tinted colours)
- Convenient 1:1 by volume mix ratio
- Direct to substrate coating
- Wide colour range available
- Winter grade hardener (part B) available

PRODUCT DATA

| | |
|-----------------------------|--|
| Volume Solids | 97 - 100% depending on colour |
| Theoretical Coverage | 5 Square meters / Litre at 200 Microns DFT |
| Finish | Pigmented |
| Colour | Wide colour range employing LiquiChrome tinting system |
| Gloss | Semi-Gloss |
| Mixing Ratio | 1:1 by volume |
| Pot life | 45 Min @ 25°C |
| Typical Thickness | 125 to 300 Microns DFT (125 to 300 Microns WFT) |
| Cleaner | LM1 Thinner |
| Flash Point Untinted | 99°C |
| Flash Point Tinted | 40°C |
| VOC Untinted | 0 Grams/Litre mixed |
| VOC Tinted Colours | 55 grams maximum depending on colour |
| Specific Gravity | 1.48 White mixed |

CURE & RECOAT

| Substrate Temp | Touch Dry | Hard Dry Note 1 | Minimum Recoat Time | Maximum Self Recoat Time Note 2 | Maximum Opalon S30 Recoat Time Note 2 |
|----------------|-----------|-----------------|---------------------|---------------------------------|---------------------------------------|
| 5°C | 24 Hrs | 48 Hrs | 48 Hrs | 4 Weeks | 7 Days |
| 10°C | 12 Hrs | 24 Hrs | 24 Hrs | 4 Weeks | 4 Days |
| 15°C | 6 Hrs | 12 Hrs | 12 Hrs | 4 Weeks | 2 Days |
| 25°C | 3 Hrs | 6 Hrs | 6 Hrs | 4 Weeks | 1 Days |
| 40°C | 1.5 Hrs | 2 Hrs | 2 Hrs | 2 Weeks | 8 Hrs |

Note 1: Full cure is achieved in 7-14 days. Pull-off adhesion testing is best conducted after at least 3 Days ambient cure

Note 2: Where the coating is exposed to direct sun and UV, the maximum recoat time will be considerably reduced. Contact Liquimix for advice

Metalox – GC450

| ENGINEERING DATA | | Result |
|---------------------|---|--------|
| Property | | |
| Dry Heat Resistance | Intermittent | 100°C |
| Abrasion resistance | ASTM c501-84, H18 wheel @ 1,000rpm with 1,000g weight | 98mg |

POTLIFE

| Mixed Product Temp | Pot Life Standard & Winter (Note 1) |
|--------------------|-------------------------------------|
| 10°C | 90 min |
| 15°C | 60 min |
| 25°C | 45 min |
| 40°C | 10 min |

Note 1: Potlife data applies to both standard and winter cure Part B. The potlife is dependent on product temperature as well as mix size. When using larger mix sizes, the potlife will be shorter. Keep products cool

LIMITATIONS

- Expect some colour change and surface chalking over time for exposed Metalox – GC450. When using the winter cure Part B, strong yellowing will occur. A colourfast topcoat such as Opalon S30 may be considered
- May bubble or crater when applied directly to concrete that is outgassing from rising temperatures or high moisture content. To minimise this, apply a coat of Aralox – FL150 low viscosity epoxy sealer, to seal the concrete first and work it well into the surface, making sure all pores and holes are filled. Reschedule application to when the concrete is cooling down such as at night
- Product requires up to 14 days to develop full physical properties and adhesion. Pull-off or other adhesion testing might not produce accurate results during this period

SURFACE PREP

Steel

1. Remove all rust, mill scale, oil and any previously applied coatings back to bare clean steel using abrasive blast. Welds should have slag and spatter fully removed.
2. Abrasive blast to Sa2½ (ISO 8501-1:2007) or SSPC-SP10. A sharp, angular surface profile of 75-100 microns is recommended

Concrete

The concrete surface preparation must be conducted under the SSPC-SP13/NACE No. 6 surface preparation standard for concrete. This standard covers the preparation of concrete surfaces before the application of protective coating or lining systems.

The concrete should be at least 28 days old. Ensure that the moisture content of the concrete is less than 7% before applying any coatings. A moisture test as outlined in ASTM D4263 can be used to confirm the moisture content.

1. Remove all oil, grease and release agents in the concrete. Ensure that any laitance or other invisible contaminants have been removed. Be especially careful with concrete surfaces that have been in contact with form ply or moulds that may contain release agents. These release agents commonly contain heavy hydrocarbon waxes or silicones that can adversely affect the adhesion.
Contaminant may also be present below the surface as it may have penetrated the concrete. This can be the case in food processing facilities for example. Depending on the depth of the contaminant this may require solvent and /or hot water high pressure cleaning.
Prepare the concrete surface to a clean, dry finish by ensuring that the water and air used in the decontamination of the concrete are clean
2. Fill bug holes with PU sealant, Aralox FL150 mixed with Patchfill or other approved filler material
3. Restore exposed aggregate surfaces back to the original profile by rendering with a mixture of Aralox – FL150 and Renderfill (a proprietary blend of clean, dry sand)

Metalox – GC450

Concrete

Continued:

4. Remove high spots and protrusions, radius sharp edges and corners. Cove internal 90 degree angles with 45 degree, 20mm flat chamfer
5. Preparing of the concrete surface should be done in accordance with SSPC-SP13/NACE 6. Smooth, shiny concrete must be roughened to a profile similar to 80 grit sandpaper or CSP 2 - 5 or as documented in the coating system specification.
6. Surface preparation methods employed can be vapour abrasive blasting, dry abrasive blasting, hydro blasting, mechanical scabbling or diamond grinding. Acid etching is not an acceptable surface preparation method

APPLICATION

Equipment

| | |
|---------------------------------|---|
| Airless 60:1 Pump (Preferred) | Tip Range 0.53-0.66 mm (21-26 Thou). Output fluid pressure at spray tip not less than 210 kg/cm ² (3000Psi) |
| Roller and Brush | Suitable for small areas |
| Alternative application: | Plural component equipment from Graco that automatically meters and mixes Metalox – GC450 such as Graco XM or Graco XP. Contact Liquimix for equipment purchase or hire |
| Temperature of material at gun: | Ambient (20 – 30°C) |

Environment

| | |
|------------------------|--|
| Relative humidity: | The relative humidity must be less than 85% |
| Dew point: | The substrate temperature must be at least 3°C higher than the dew point temperature |
| Substrate Temperature: | The substrate temperature must be a minimum of 5°C |

Mixing

Always stir Metalox – GC450 Part A (Coloured pigmented) and Metalox – GC450 Part B (Cream pigmented) thoroughly in its original container before use.
Mechanically mix (by volume) 1 Part of Metalox – GC450 Part A with 1 Part of Metalox – GC450 Part B hardener (1:1). Do not vary from this ratio. If supplied in pre-measured containers, make up the entire mix. Do not attempt to part mix.
Avoid entrapping air during mixing

Thinning

Thinning of Metalox – GC450 is not considered necessary or desirable

Cleanup

LM1 Thinner may be used for general clean-up of equipment and hoses. To remove cured material from metal parts, soak in Swell. Keep all gun part A side components in soak containers on the left side of the work bench and all part B side components on the right side of the work bench. The use of plastic soak containers with clip on lids and removable baskets makes the job easier. Replace the SWELL regularly as soon as it starts turning cloudy and dirty

Concrete

Apply one coat of Aralox – FL150 to seal the concrete. For best results apply Aralox – FL150 in the evening when the concrete is cooling down and not outgassing. The Metalox – GC450 can be applied as soon as the Aralox – FL150 has tacked or the following morning when the Aralox – FL150 is cured.

Depending on the quality and porosity of the concrete another coat of Aralox – FL150 may be required in order to minimise pin-holing in the subsequent application of Metalox – GC450. Avoid applying too much Aralox – FL150 to the point where it ponds. If this happens spread the excess out with a roller to other areas. It is important to maintain the profile of the concrete. Then apply the Metalox – GC450 with a suitable paint roller or spray using Airless 60:1 single leg equipment or plural spray equipment such as Graco XM or XP

Metalox – GC450

| CURE & RECOAT Winter Cure | Substrate Temp | Touch Dry | Hard Dry Note 1 | Minimum Recoat Time | Maximum Self Recoat Time Note 2 | Maximum Opalon S30 Recoat Time Note 2 |
|--------------------------------------|--|------------------|------------------------|----------------------------|--|--|
| | 5°C | 20 Hrs | 30 Hrs | 30 Hrs | 2 Weeks | 4 Days |
| | 10°C | 12 Hrs | 20 Hrs | 20 Hrs | 2 Weeks | 2 Days |
| | 15°C | 8 Hrs | 12 Hrs | 12 Hrs | 2 Weeks | 1 Days |
| | 25°C | 4 Hrs | 6 Hrs | 6 Hrs | 2 Weeks | 8 Hours |
| | 40°C | 2 Hrs | 3 Hrs | 3 Hrs | 1 Week | 4 Hours |
| Note 1: | Pull-off adhesion testing is best conducted after 3 Days plus ambient cure | | | | | |
| Note 2: | Where the coating is exposed to direct sun and UV, the maximum recoat time will be considerably reduced. Contact Liquimix for advice | | | | | |

COMPATIBILITY

Primers

Civilox - LV110
Aralox - FL150
Civilox - HB200

Topcoats

Metalox – GC450
Opalon S30 Finish

TYPICAL SYSTEMS

| Substrate | Environment | Substrate Prep | Coat | System | DFT |
|------------------|--|-------------------------|--|-------------------------------|---------------|
| Concrete | External | Vapour Abrasive Blast | 1 st Coat | Aralox – FL150 | (200µm) |
| | | | 2 nd Coat | Metalox – GC450 | 200µm |
| Steel | Floor Non-Skid | Abrasive Blast to SA2.5 | 1 st Coat | Metalox – GC450 | 150µm |
| | | | 2 nd Coat | Metalox – GC450 NS | 150µm |
| Steel | Structural Steel C4 Very High Durability | Abrasive Blast to SA2.5 | 1 st Coat 2 nd Coat | Metalox – GC450 Opalon S30 | 250µm 75µm |

STORAGE & HANDLING

Store in dry, shaded conditions away from sources of heat and ignition and in properly sealed containers. Protect from heat and frost.
A shelf life of 18 months minimum is typical if stored under ambient conditions at 25 °C

PACK SIZE

20 Litre Kit

10L of Metalox – GC450 Part A in a 20L Container
10L of Metalox – GC450 Part B in a 10L Container

8 Litre Kit

4L of Metalox – GC450 Part A in a 4L Container
4L of Metalox – GC450 Part B in a 4L Container

HEALTH & SAFETY

Metalox – GC450 is for professional use only.
This product should not be used without consulting the Safety Datasheet (SDS) as published on the Liquimix website first. Observe all health and safety as well as environmental legislation

DISCLAIMER

The information contained herein is offered without charge and is for use by technically qualified personnel at their own risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and no warranty of any kind is made with respect thereto

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