

Civilox[®]-LV100

Very low-viscosity, fast curing 100% solids epoxy sealer

PRODUCT

DESCRIPTION A two-part, very low-viscosity, 100% solids, surface-tolerant epoxy, designed to deeply penetrate, strengthen and seal concrete surfaces. Civilox-LV100 has outstanding water and chemical resistance and is the recommended concrete sealer for use under other epoxies or Tufflon polyurea.

INTENDED

USES

- Sealing concrete prior to coating with other epoxies or Tufflon polyurea
- Concrete water tanks, reservoirs, sewerage treatment plants
- Concrete bunds, Podiums, Balconies, Planter Boxes, Rooftops, Car Parks
- Rendering or Patch Filling when mixed with Renderfill, fine, graded sand
- Sealing timber beams

FEATURES

- Seals concrete surfaces
- Prevents pin-holing in polyurea
- Excellent adhesion to concrete
- Tolerant of substrate moisture
- Fast cure at ambient temperature
- Full cure down to 0°C
- Outstanding water resistance
- 100% solids (non-flammable)
- Mix with sand for patch and render
- Convenient 1:1 by volume mix ratio

PRODUCT DATA

Volume Solids	100%
Theoretical Coverage	5m ² / L (depending on concrete porosity)
Finish	Pigmented
Colour	Light Grey
Gloss	High Gloss
Mixing Ratio	1:1 by volume
Potlife	30 min @ 25°C
Typical Thickness	200 Microns wet to soak into concrete
Cleaner	LM1 Thinner
Flash Point	>180 °C
VOC	0 Grams/Litre
Specific Gravity	1.12

CURE & RECOAT

Substrate Temp	Tacked	Hard Dry	Full Cure (Note 1)	Minimum Recoat Time (Note 2)	Maximum Recoat Time (Note 3)
5°C	24 Hrs	30 Hrs		24 Hrs	4 Days
15°C	10 Hrs	14 Hrs		10 Hrs	2 Days
25°C	5 Hrs	7 Hrs	7 - 14 Days	5 Hrs	24 Hrs
40°C	2 Hrs	3.5 Hrs		2 Hrs	12 Hrs

Note 1: Pull-off adhesion testing is best conducted after 3 days cure
 Note 2: Or when the film has tacked
 Note 3: Where the coating is exposed to direct sun and UV, the maximum recoat time will be considerably reduced. Contact Liquimix for advice

ENGINEERING DATA

Property	Method	Results
Hardness	Shore D	60
Elongation at 25°C	ASTM D412 06ae2	1 - 2%
Abrasion Resistance	ASTM c501-84, H18 wheel @ 1,000rpm with 1,000g weight	98
Tensile Strength	ASTM D412-92	16.0 MPA
Tear Strength	ASTM D412-92	98N.mm

POTLIFE

Mixed Product Temperature	Gel Time
10°C	60 min
15°C	45 min
25°C	30 min
40°C	10 min

LIMITATIONS

- Expect some colour change and surface chalking over time for exposed Civilox-LV100
- May bubble or crater when applied to concrete that is outgassing from rising temperatures or high moisture content. To minimise this, apply a thin coat first and work it well into the surface, making sure all pores and holes are filled. Alternatively reschedule application into the night-time when the concrete is cooling down
- Mixing too much at once will shorten the pot-life. On large areas, pour the mixed product directly onto the concrete and then roll it in
- 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
- Work into the concrete well and do not allow to pond

SURFACE PREP

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 through ensuring that the water and air used in the decontamination of the concrete is 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 Civilox-LV100 and Renderfill (a proprietary blend of clean, dry sand)
4. Remove high spots and protrusions, radius sharp edges and corners. Cove internal 90 degree angles with 45 degree, 20mm flat chamfer

Civilox®-LV100

5. Prepare the concrete surface in accordance with SSPC-SP13 / NACE 6. Smooth, shiny concrete must be roughened to a profile similar to 80 grit sandpaper or CSP2 - 5 or as documented in the coating system specification. 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

Mixing

Always thoroughly stir Civilox-LV100 Part A and Civilox-LV100 Part B in their original containers before use. Mechanically mix (by volume) 1 Part of Civilox-LV100 Part A with 1 Part of Civilox-LV100 Part B hardener (1:1). Do not vary from this ratio. Do not attempt to part mix. Make up the entire mix. Mix until homogeneous. Avoid entrapping air during mixing. To ensure correct mix ratio, reduce product wastage, and speed up the application rate, consider using specialised Graco plural component spray equipment. Request more information from Liquimix.

Equipment

Large and small areas:	Preferred method is Roller
Alternative application:	Use plural spray equipment such as Graco XM or Graco XP Contact Liquimix for details Standard airless equipment may also be used
Temperature of material at gun:	Ambient

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

Thinning

Thinning of Civilox-LV100 is not considered necessary or desirable due to its already very low mixed viscosity. However, where deeper penetration is required, LM1 Thinner may be added to a maximum of 10% of mixed Part A and Part B. The final coat should always be un-thinned. Observe the ventilation requirements and flammability hazard created by using thinner in Civilox-LV100.

Clean-Up

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

Mix the two components well and apply with a suitable paint roller or spray using plural spray equipment such as Graco XM or XP. Work the product well into the concrete to seal the open pores. Depending on the quality and porosity of the concrete up to three coats of Civilox-LV100 may be required in order to minimise pin-holing in the subsequent application of Tufflon. A minimum of two coats is required for permanent immersion applications. For best results apply Civilox-LV100 in the evening when the concrete is cooling down and not outgassing. The topcoat can be applied as soon as the Civilox-LV100 is tacked or the following morning when the Civilox-LV100 is cured.

NOTE: AVOID FLOODING OR PONDING THE PRODUCT. THE SURFACE PROFILE SHOULD REMAIN VISIBLE

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Rendering

Civilox-LV100 (L)	Renderfill-F300 (L)	Mixed Volume (L)	Mixed Consistency
1	1 - 1.5	2 - 2.5	Very Fluid
1	1.5 - 2	2.5 - 3	Pourable (cake batter)
1	2 - 2.5	3 - 3.5	Dry Screed

Tested at 25°C, 50% Humidity

Renderer needs to determine the mix that best suits the substrate condition, temperature, humidity and preference of the render. The substrate must be prepared and sealed with Civilox-LV100 prior to rendering.

COMPATIBILITY

Primers	Civilox-LV100
Topcoats	Tufflon-P80 Tufflon-P90 Elaston-W80 Civilox-HB200

Typical Systems

Substrate	Environment	Substrate Prep	Coat	System	DFT
Concrete	Tank Internal	Vapour Abrasive Blast	1 st Coat 2 nd Coat 3 rd Coat	Civilox-LV100 Civilox-LV100 Tufflon	200µ 50µ 3000µ

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.

If crystallisation occurs, heat the material to 70°C whilst agitating to melt it. On no account should the materials be heated above 70°C. Storage temperatures above 40°C are not recommended since they can accelerate the formation of insoluble solids and increase the viscosity. If either component is opened and partially used, it should be purged with nitrogen or desiccated air and resealed.

PACK SIZE

40L Kits	8L Kits
20L of Civilox-LV100 Part A in a 20L Container	4L of Civilox-LV100 Part A in a 4L Container
20L of Civilox-LV100 Part B in a 20L Container	4L of Civilox-LV100 Part B in a 4L container

HEALTH & SAFETY

Civilox-LV100 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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