Civilox® - HB200

High Build 100% Solids Surface Tolerant Epoxy

PRODUCT DESCRIPTION

A two component, high build 100% solids, surface-tolerant epoxy, designed for concrete and steel surfaces for atmospheric and immersion service. Civilox – HB200 has outstanding water and anticorrosion resistance and will cure at low temperature

INTENDED USES

- Concrete water tanks, reservoirs, sewerage treatment plants
- Secondary containment
- Anti-corrosive coating for steel structures
- Primer for the Tufflon Polyurea Range

FEATURES

- Reduces pinholing 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)
- Convenient 1:1 by volume mix ratio
- Direct to steel coating

PRODUCT DATA

Volume Solids	100%
Theoretical Coverage	5 Square meters / Litre at 200 Microns DFT
Finish	Pigmented
Colour	Light Grey and other colours
Gloss	Semi Gloss
Mixing Ratio	1:1 by volume
Potlife	45 Min @ 25°C
Typical Thickness	125 to 300 Microns DFT (125 to 300 Microns WFT)
Cleaner	LM1 Thinner
Flash Point	>180 °C
VOC	0 Grams/Litre
Specific Gravity	1.38

CURE & RECOAT

Substrate Temp	Tacked	Hard Dry Note 1	Minimum Recoat Time Note 2	Maximum Self Recoat Time Note 3	Maximum Tufflon P80 Recoat Time Note 3
5°C	20 Hrs	30 Hrs	30 Hrs	2 Weeks	12 Days
10°C	12 Hrs	20 Hrs	20 Hrs	2 Weeks	12 Days
15°C	8 Hrs	12 Hrs	12 Hrs	2 Weeks	6 Days
25°C	4 Hrs	6 Hrs	6 Hrs	2 Weeks	3 Days
40°C	2 Hrs	3 Hrs	3 Hrs	1 Week	1 Day

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

Note 2: Or when the film has tacked

Note 3: Where the Civilox HB200 is exposed to direct sun and UV, the maximum recoat time will be considerably reduced. Contact Liquimix for advice

ENGINEERING DATA

Property	Results
Dry Heat Resistance- Intermittent	100°C

POTLIFE

Mixed Product Temp	Gel Time (Note 1)
10°C	90 min
15°C	60 min
25°C	45 min
40°C	10 min

Note 1: 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 colour change and surface chalking over time for exposed Civilox – HB200
- May bubble or crater when applied directly to concrete that is outgassing from rising temperatures or high moisture content. To minimise this, apply a thinned 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
- 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

Concrete

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 “Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method” 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, Civilox LV100 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
5. Preparing of the concrete surface should be done in accordance with SSPC-SP13/NACE 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.
   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

Steel

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
Abrasive blast to Sa2½ (ISO 8501-1:2007) or SSPC-SP10. A sharp, angular surface profile of 75-100 microns is recommended

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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/cm² (2987Psi)
Roller and Brush	Suitable for small areas
Alternative application:	Use plural spray equipment such as Graco XM or Graco XP". 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

Mixing

Always stir Civilox – HB200 Part A (Coloured pigmented) and Civilox – HB200 Part B (Cream pigmented) thoroughly in its original container before use.
Mechanically mix (by volume) 1 Part of Civilox – HB200 Part A with 1 Part of Civilox – HB200 Part B hardener (1:1). Do not vary from this ratio. Do not attempt to part mix and make up the entire mix.
Avoid entrapping air during mixing

Thinning

Thinning of Civilox – HB200 is not considered necessary or desirable but on concrete where deep penetration is required, LM1 Thinner may be added to a maximum of 20% of mixed Part A and Part B. The final coat should always be un-thinned. Please observe the ventilation requirements and flammability hazard created by using thinner in Civilox – HB200

Cleanup

LM1 Thinner may be used for general clean-up of equipment and hoses. For soaking of contaminated metal parts use 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 Civilox – LV100 to seal the concrete. 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. A second coat of Civilox LV100 may be required (depending on the quality and porosity of the concrete) in order to minimise pinholing in the subsequent top coat of Civilox HB200 or Tufflon polyurea. Avoid ponding of the Civilox – LV100 and roll out areas where there is too much sealer sitting on the concrete surface.
Then apply the Civilox HB200 with a suitable paint roller or spray using Airless 60:1 single leg equipment or plural spray equipment such as Graco XM or XP

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RENDERING

Civilox – HB200 (L)	RenderFill F300 (L)	Mixed Volume (L)	Mixed Consistency
1	1 - 1.5	2 - 2.5	Wet Screed
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 Civilox - LV110
Topcoats	Tufflon - P80 Tufflon - P90 Civilox – HB200

TYPICAL SYSTEMS

Substrate	Environment	Substrate Prep	Coat	System	DFT
Concrete	Tank Internal	Vapour Abrasive Blast	1st Coat	Civilox – LV100	(200µ)
			2nd Coat	Civilox – HB200	125µ
			3rd Coat	Tufflon	3000µ
Steel	Structural Steel	Abrasive Blast to SA2.5	1st Coat	Civilox – HB200	250µ
			2nd Coat	Civilox – HB200	250µ
Steel	Structural Steel	Abrasive Blast to SA2.5	1st Coat	Civilox – HB200	125µ

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

<u>40Litre Kits</u>
20L of Civilox – HB200 Part A in a 20L Container
20L of Civilox – HB200 Part B in a 20L Container

<u>20Litre Kits</u>
10L of Civilox – HB200 Part A in a 10L Container
10L of Civilox – HB200 Part B in a 10L Container

HEALTH & SAFETY

Civilox – HB200 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

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