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SikaDur® 53/53LV

Underwater Epoxy Crack Injection Resin

Technical Data Sheet

DESCRIPTION

SikaDur 53 is a two component epoxy resin uniquely formulated for underwater or wet crack injection work. Available in two grades. Standard **Sikadur 53** is of a pourable fine mortar consistency. **Sikadur 53 LV** is of lower viscosity and is more suited to the injection of finer cracks.

USES

* For injection into wet cracks or cracks filled with water.
* For the repair of water immersed concrete structures.
* Fills and seals cavities and cracks in structural building and civil engineering structural components.
* Preventing ingress of water.
* Structural bonding.
* Floor screed stabilisation/bonding.
* Underground grouting work.

ADVANTAGES

* Excellent bond to wet/underwater concrete and masonry.
* Low water absorption.
* Good mechanical properties.
* Low viscosity.
* Seals against moisture and oxygen.
* Resists chemicals.
* Suitable for gravity feed or pressure injection.

Technical Data (typical)

	SikaDur 53	SikaDur 53LV
Colour:	Green	Pink
Density:	2.0 kg/litre	1.9 kg/litre
Application temperatures:	+5°C min - +25°C max (substrate and ambient)	
Crack width range:	0.5 mm min 40 m max	0.3 mm min 15 mm max
Viscosity: (cP) @20°C	5800	2800

MECHANICAL PROPERTIES
(Applied and cured underwater @ 20°C)

Compressive strength gain:	
1 day	50 N/mm²
2 days	60 N/mm²
5 days	75 N/mm²
14 days	85 N/mm²
Flexural strength:	45 N/mm²
Tensile strength:	30 N/mm²
Modulus of Elasticity: (static)	4.0 KN/mm²
Bond strength:	Concrete: typically 3.0 N/mm² (concrete failure)
Shrinkage:	Negligible

Pot life:

20°C	30 mins	20 mins

All above values are approximate.

SURFACE PREPARATION

Concrete/Brickwork Substrates:
Surfaces must be sound, clean, free from standing water and loosely adhering particles and other contaminants. Purge cracks with resin after capping until resin runs contaminant free.

MIXING

For single component dispensing equipment, sealant cartridge or gravity feed:
Stir component A prior to mixing (resin). The whole of component A (resin) should be mixed with the whole of component B (hardener) for a minimum of 2 minutes using a slow speed electric stirrer (300-600 rpm).

Allow a waiting time of 15 minutes (@20°C) for both products prior to applying in order to allow the mixture to pre-react for optimal adhesion underwater.

APPLICATION

Pressure Injection:

* Select injection port locations, drill hole in substrate at location of crack and insert socket ports. Alternatively use surface adaptors bonded to surface over crack. As a guide ports should be located at a distance equal to the thickness of the injected member. Minimum injection port distance approximately 200 mm.

* Cap/seal surface with **SikaDur 31 Rapid** thixotropic epoxy adhesive at a thickness of at least 2.0 mm and allow to cure. Surface preparation should be sufficient to bond cap/seal and withstand injection pressures. Guiding surface either side of crack may be necessary.

* Inject the mixed **SikaDur 53/53LV** using single component injection dispensing equipment or the unmixed components of A and B using dual component dispensing equipment at a pressure and duration which will allow full penetration of the resin into the crack. Purge cracks with resin to clean crack.

* After injection of **SikaDur 53/53LV** allow to harden and grind off **SikaDur 31 Rapid** cap/seal and injection ports.

Gravity feed (horizontal surfaces)

* Use mechanical equipment to form a V-notch along the length of the crack. Pour mixed **SikaDur 53/53LV** into crack. Top up V-notch as required until notch remains full and **SikaDur 53/53LV** hardens. Alternatively use a bund along crack formed from a fillet of **Sikaflex® 11FC.**

IMPORTANT CONSIDERATIONS

* Crack injection is a specialist technique. The success is dependent on the resin, pressure, spacing of ports and equipment used. Therefore it is recommended a specialist injection contractor is used.
* At higher temperatures pot life will be shortened.
* At lower temperatures the material will become more difficult to inject and take longer to harden.
* Wear suitable protective clothing, gloves and eye protection.
* Do not add solvent to the mix.
* Establish cracks are static moving cracks and should be treated as movement joints.
* **Thinner C** is flammable. NO NAKED FLAMES
* Trials should be undertaken to establish suitability of resin, spacing of injection ports, injection equipment and injection pressure.
* Take cores at locations of cracks to clarify penetration and method of injection.

CLEANING

All tools should be cleaned with **Thinner C** immediately after use. Hardened material must be removed mechanically.

PACKAGING

Refer to latest price list.

CONSUMPTION (kg/m²)

	Sikadur 53	Sikadur 53 LV
1 mm thickness	2.0	1.9
5 mm thickness	10.0	9.5
10 mm thickness	20.0	19.0

Excluding allowances for loss wastage surface profile and porosity.

STORAGE AND SHELF LIFE

Minimum 12 months in sealed containers stored in dry warehouse conditions (+5°C - +25°C).

Please consult our Technical Sales Department for further information

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