



SikaDur[®] 53

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 and is of a pourable fine mortar consistency.

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)

Colour:	Green
Density:	2.0 kg/litre
Application temperatures:	+5°C min - +25°C max (substrate and ambient)
Crack width range:	0.5 mm min 40 mm max
Viscosity:	5800(cP) @20°C

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

Compressive strength gain:	
1 day	50 N/mm ²
2 days	60 N/mm ²
5 days	75 N/mm ²
14 days	85 N/mm ²
Flexural strength:	45 N/mm ²
Tensile strength:	30 N/mm ²
Modulus of Elasticity: (static)	4.0 KN/mm ²
Bond strength:	Concrete: typically 3.0 N/mm ² (concrete failure)
Shrinkage:	Negligible
Pot life:	
20°C	30 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** 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** 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** into crack. Top up V-notch as required until notch remains full and **SikaDur 53** 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
1 mm thickness	2.0
5 mm thickness	10.0
10 mm thickness	20.0

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).

Handling Precautions

Sika products are generally harmless provided that certain precautions normally taken when handling chemicals are observed. The materials must not, for instance, be allowed to come in contact with foodstuffs or food utensils and measures should also be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The use of protective clothing, goggles, barrier creams and rubber gloves is required. The skin should be thoroughly cleaned at the end of each working period either by washing with soap and warm water or by using a resin-removing cream - the use of powerful solvents is to be avoided. Disposable paper towels - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. In case of accidental eye or mouth contact, flush with water - consult a doctor immediately. Health and Safety information on Sika Products is available and we strongly advise that this is read prior to their use. Sika products are for professional use and should be stored in sealed containers away from the reach of children.

Important Note

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

Please consult our Technical Sales Department for further information

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