Construction

Sikaflex® 11FC

One component polyurethane joint sealant and adhesive

Positioning

Description

Sikaflex 11FC is a fast curing, one component polyurethane based compound that is extremely effective, both as a flexible sealant or high strength adhesive. Sikaflex 11FC is a non-slumping material that cures by reaction with atmospheric moisture to form a tough and resilient elastomer.

Uses

For permanent elastomeric sealing and adhesion applications in the building construction and civil engineering industries.

Sikaflex 11FC is used as a joint sealant for:

- Filling sawcuts and construction joints in concrete floors.
- Sealing between ceramic or earthenware tiles.
- Sealing between natural stones such as granite, marble and Hinuera or Oamaru stone.
- Rim and rebate sealing around pipes and ventilating ducts.
- Flexible connection joints between concrete floors and machinery.
- Waterproof joints in potable water reservoirs.

Sikaflex 11FC is a powerful adhesive for:

- Bonding of lightweight building components e.g., tiles, brick slips, timber panelling, fibreglass, compressed sheeting, etc., to the structure.
- Bonding components together with different thermal coefficients e.g., aluminium to concrete, timber to steel, etc.
- Securing sanitary fittings to concrete or tiled floors or walls.
- High strength bonding for all sheet metal applications e.g., air conditioning ducts, lap joints in flashings, sill trays, etc.
- Lap joints in prefabricated steel structures e.g., silos, tanks, sheet piling, etc.

Sikaflex 11FC can be used as a high effective gasket seal for:

- Waterproof joints between precast concrete components in storm water manhole risers and pipelines.
- Unions, sleeves and flanges between cast iron or steel pipes.
- Flange joints between ventilating ducts.
- Building up uneven or irregular surfaces where sealing between components is required.

Advantages

- Ready for use and requires no on-site mixing, meaning less product waste and no risk of faulty mixing.
- Will not sag in vertical or overhead applications.
- Excellent ageing and weathering resistance.
- Approved for use in contact with potable water and in the food industry.
- May be overpainted (preliminary testing required).
- High Shore A hardness.
- Excellent adhesion to most construction materials, even without primer.
- Fast curing.
- Good chemical resistance.
- Will not stain natural stones such as marble or granite.
- High tearing strength.
- Non corrosive, odourless.

Product Data

Form / Type:

Polyurethane elastomer

Colours / Packaging:

- 310ml cartridges (12 per carton): available in white, grey or black.
- 600ml sausages (20 per carton): available in grey only.

Storage & Shelf Life:	Nine (9) months from production date in unopened original packaging if stored in cool dry conditions between 10°C and 25°C.

Technical Data

Density:	1.2 kg/litre
Service temperature:	-40°C to +80°C (max +50°C in water)
Application temperature:	+5°C to +40°C
Shore A Hardness:	40 – 45 (DIN 53 505)
Elastic Recovery:	> 90%
Tensile strength:	0.5MPa - 50% elongation at 20°C
Tear resistance:	1.5 MPa
Elongation at break:	> 400% (DIN 53 455)
Movement capacity:	± 10% of joint width. Total movement = 20%
Tack free time:	1 - 2 hours (subject to ambient conditions)
Cure rate:	3mm per 24 hours (at 20°C, Relative Humidity 60%)
Toxicity:	No restriction

Joint Configuration for General Use

Joints up to 12mm wide: width : depth ratio = 1 : 1
Joints between 12mm and 24mm wide: joint dimension = width x 12mm deep
Joints over 24mm wide: width : depth ratio = 2 : 1

Application Conditions

Surface Preparation

All surfaces must be clean, dry and free from any loosely adhering particles or surface contaminants such as dirt, dust, oil, grease, etc.

Backing Rod/ Bond breaker

- In open based joints the correct depth should be established by inserting a Sika PEF Backing Rod of a suitable dimension. (Refer to **PEF Rod** data sheet).
- If the joint has a solid, formed base it is essential to apply a bondbreaker tape to this surface in order to prevent back adhesion. This will then allow the sealant unrestrained movement throughout the depth of the joint.

Priming

- Sikaflex 11FC generally has excellent adhesion to most clean, sound substrates. For optimum adhesion and in areas of critical, high performance applications such as multi storey building work, under water joints, high stress joints and extreme weather exposure we always recommend the use of substrate primers and cleaners.
- If a primer is not used, tests should be carried out to ensure that satisfactory adhesion is achieved on the intended substrate under the service conditions expected and with the cleaning regime used. (Consult the Sika Technical Department for assistance.)
- *Porous substrates,* e.g. concrete, masonry, brickwork, hardiflex, timber etc, use **Sika Primer No. 3N**.
- *Non porous substrates,* such as aluminium, ceramic fibreglass, formica laminex, cured epoxies and polyesters use **Sika Primer/Cleaner 205**.
- When using primers it is essential that they have fully cured before applying Sikaflex 11FC.
- For further information on priming of substrates refer to the **Sika Primer** data sheet or contact the Sika Technical Dept.

Application

- Protect each outside face of the prepared joint with a layer of masking tape.
- Apply Sikaflex 11FC using a Sika hand or pneumatically operated caulking gun at an angle to eliminate the inclusion of air pockets. Sealant should be firmly extruded into the joint, making sure it is in full contact with the sides of the joint. Tool off sealant to achieve a smooth finish. Tooling will compress the sealant, promoting adhesion to joint walls.
- Remove masking tape before sealant starts curing.
- If using Sikaflex 11FC as a compression gasket seal between flanges do not fully tighten flange bolts until sealant has fully cured through.
- When using Sikaflex 11FC for the bonding of construction and engineering components it may be necessary to provide temporary mechanical support until the adhesive has cured.

Cleaning of Tools

Clean tools immediately after use with Sika Colma Cleaner - cured Sikaflex can only be removed mechanically.

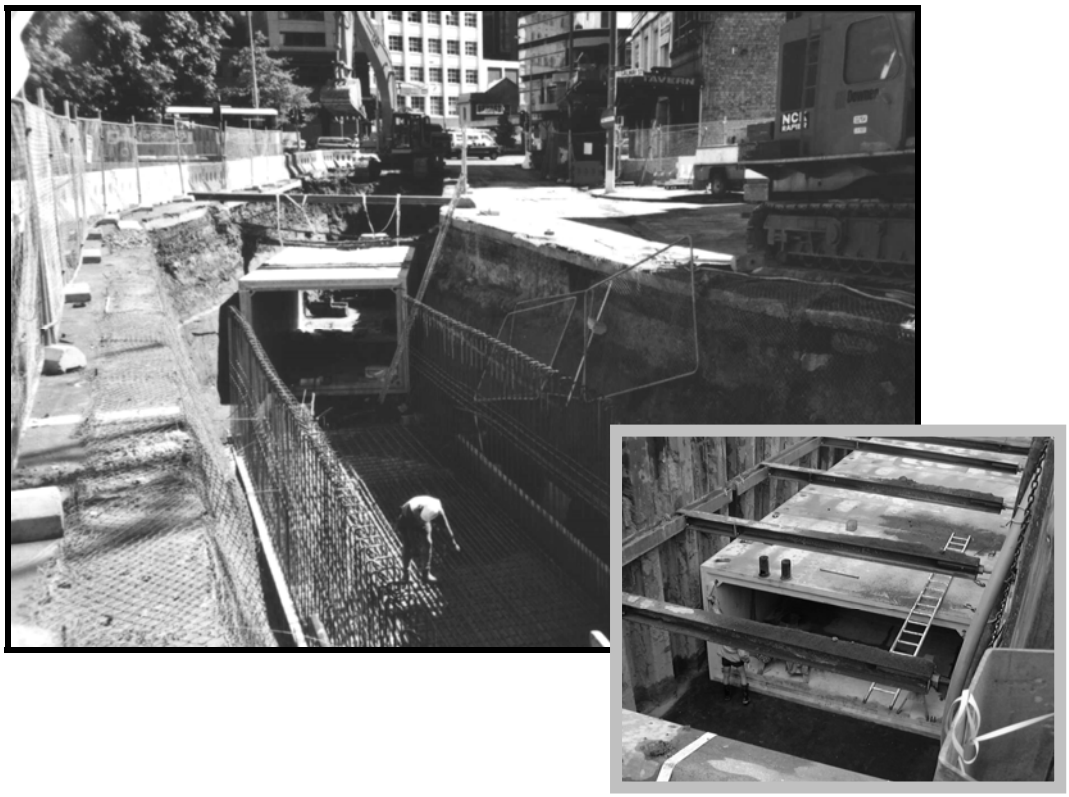
Notes on Application / Limitations	• Sikaflex 11FC will not adhere to polyethylene, polypropylene, polybutylene, polycarbonate, silicone or Teflon. If in doubt about the substrate suitability consult the Sika Technical Department or conduct preliminary adhesion tests. • When using Sikaflex 11FC as an adhesive or a gasket seal it must have a minimum thickness of 2mm. • Protect against water for 2 - 3 hours after application. • White polyurethane sealants may discolour slightly with age. • Overpainting of sealants may inhibit their movement capabilities and it is not generally recommended. • When applying Sikaflex 11FC to prepainted surfaces conduct adhesion tests first. • All joints subjected to hydrostatic pressure must have a solidly formed base to provide bearing for the sealant. • Sikaflex 11FC, as with all elastomeric sealants, will ultimately break down when continuously exposed to chlorinated water in swimming pools. For pool joints use **Sikadur Combiflex** system (refer separate data sheet for information). • Sikaflex 11FC must be fully cured before covering with drinking water. • Do not use for structural glazing or butt glazing applications. • Refer to the “Sikaflex Elastomeric Sealants” data sheet, for information on joint design and calculation of joint movement.
Notes	All technical data stated in this product data sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
Local Restrictions	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

Health & Safety Information

Protective Measures	• To avoid rare allergic reactions, we recommend the use of protective gloves. Change soiled work clothes and wash hands before breaks and after finishing work. • Local regulations as well as health and safety advice on packaging labels must be observed. • For further information refer to the Sika Material Safety Data Sheet which is available on request.
Important Notes	• Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities. • Detailed health and safety advice as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the safety data sheet.
Transport	Sikaflex-11FC is classed as non-hazardous for transportation.
Legal Notes	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 accordance with Sika’s recommendations. 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 user of the product must test the product’s suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Construction

Project Reference
QUAY STREET CULVERT



Requirement:
A waterproof, flexible joint sealant was required to seal between the precast concrete sections that made up the new stormwater culvert in Quay Street, Auckland. The culvert, when completed, would have stormwater running through the inside, and sea water in contact on the outside surface.

Solution:
Sikaflex 11FC was selected due to it's suitability as a highly effective gasket seal for waterproof joints between precast concrete components in stormwater structures. Seven hundred and twenty 600ml sausages of Sikaflex 11FC were used in this project.

Products Used:
Sikaflex 11FC One component polyurethane joint sealant and adhesive

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