

# Fosroc Thioflex 600

## Multi-component, gun and pouring grade, polysulphide sealant

### Uses

Sealing movement joints in building and civil engineering structures, including superstructures, reservoirs, floors, basements and subways.

### Advantages

- A high quality product meeting key international standards
- Forms a tough, elastic rubber-like seal
- Acts as an acoustic sealant
- Accommodates continuous and cyclic movement
- Excellent adhesion to most common substrates
- High resistance to ageing reduces physical damage due to climatic extremes

### Standards compliance

- British Standard BS 4254: 1983.
- British Standard BS 6920: 1988 (gun grade grey).
- U.S. Federal Specification TT-S-00227E November 1969 (amended 1970).
- Water Byelaws Scheme – Approved Product.
- DTp specification for Highway Works Dec 1991 series 1000 clause 1017.
- ASTM C 920-87, Type M, Class 25.

### Description

Thioflex 600 is a multi-component joint sealant, based on a liquid polysulphide polymer, which when mixed and applied, cures to form a tough, rubber-like seal. The cured sealant exhibits excellent adhesion to most surfaces including primed concrete, glass, aluminium and stainless steel.

Thioflex 600 is available in gun and pouring grades. The gun grade is ideal for general application. It is packed in ready to mix, 2.5 litre & 4 litre tins containing the base and curing agent in the correct proportions. The pouring grade for joints in horizontal surfaces is supplied in 4 litre & 5 litre packs with the base and curing agent in separate tins. Both these grades are available in Grey colour only.

For coloured sealants, Fosroc recommends the use of Nitoseal MS300<sup>†</sup>, a single component high performance silyl terminated polyether sealant, available in white, grey, black, portland, rustic red and brown.

Thioflex 600 is particularly recommended for use in high rise buildings and other applications where access for subsequent maintenance will be difficult and the risk of early movement failure must be minimised. It is also suitable for sealing joints in brickwork, retaining walls, reservoirs, basements and subways. Thioflex 600 pouring grade is recommended for sealing expansion joints and stress relief joints in floors or other horizontal surfaces.

### Specification

Joints shall be sealed using Fosroc Thioflex 600, two part, polysulphide sealant, manufactured by Fosroc to BS 4254 1983, and ASTM C 920 -87. Joints shall be prepared and the sealant mixed and applied in accordance with the manufacturer's current data sheet.

### Design criteria

Thioflex 600 may be applied to joints between 5 and 50 mm wide. Joints which are expected to experience cyclic movements should be designed to an optimum width:depth ratio of 2:1, subject to the overriding recommended minimum sealant depths set out below:

5 mm for metals, glass and other non-porous surfaces;

10 mm for all porous surfaces;

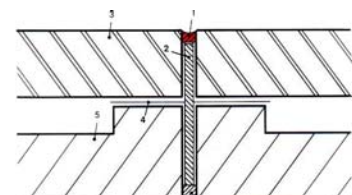
20 mm for trafficked joints and those subject to hydrostatic pressures.

To ensure that the sealant remains within its stated movement capacity (25% MAF), sealing slot widths should be designed in accordance with the recommendations of BS 6093.

The use of a surface primer is always required on porous surfaces. On non-porous surfaces a primer is not normally required except where glass or glazed surfaces are to be permanently immersed in water.

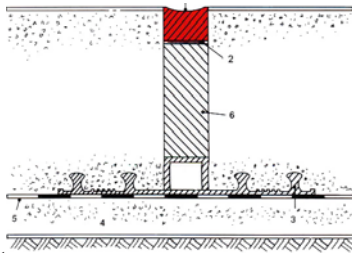
Example of a sealed movement joint in brickwork/blockwork is shown below

- 1 Thioflex 600<sup>††</sup>
- 2 Hydrocell XL<sup>††</sup>
- 3 Brickwork
- 4 D.P.C.
- 5 Blockwork



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Example of a sealed subway expansion joint is shown below:



- 1 **Thioflex 600**
- 2 **Bond breaking tape**
- 3 **Supercast Rearguard 'S' waterstop**
- 4 **Blinding concrete**
- 5 **Membrane**
- 6 **Bitucell\*\***

## Properties

<b>Form</b>	: Grey colour, multi-part, paste compound
<b>Movement accommodation factor (BS 6093)</b>	: 25% butt joints 50% lap joints
<b>Physical or chemical change</b>	: Chemical cure
<b>Pot life</b>	: 2 hours @ 25°C 1 hour @ 35°C
<b>Setting time</b>	: 36 hours @ 15°C 18 hours @ 25°C 12 hours @ 35°C
<b>Cure time</b>	: 2 weeks @ 15°C 1 week @ 25°C 4 days @ 35°C
<b>Application temperature</b>	: 5 to 50°C
<b>Hardness shore 'A' 25°C</b>	: 15 to 23
<b>Water immersion</b>	: Thioflex 600 must be fully cured before permanent immersion in water.
<b>Biological resistance</b>	: Thioflex 600 has been evaluated in microbiologically active situations and has been shown to have resistance to aerobic conditions.
<b>Solids content</b>	: 100%
<b>Density</b>	: 1.62 to 1.73 kg/litre according to colour.
<b>Flash point</b>	: Over 65°C
<b>Flammability</b>	: Burns but does not readily support combustion.

## Chemical resistance to occasional spillage :

Dilute acids	resistant
Dilute alkalis	resistant
Petrol	resistant
Aviation fuels	resistant
Diesel fuel	resistant
Kerosene	resistant
Lubricating oils	resistant
Skydrol	resistant
White spirit	resistant
Chlorinated solvents	not resistant
Aromatic solvents	not resistant
Dilute oxidising acids	not resistant

## Instructions for use

### Joint preparation

The joint surfaces must be thoroughly dry, clean and frost free. Remove all dust and laitance by rigorous wire brushing, grinding or grit blasting. Remove all rust, scale and protective lacquers from metal surfaces. Remove any oil or grease with Fosroc Joint Cleaner.

Any expansion joint filler must be checked to ensure it is tightly packed and no gaps or voids exist at the base of the sealing slot before positioning a bond breaker.

Note: The use of a bond breaker is not required in expansion joints containing Fosroc Hydrocell XL\*\* or Expandafoam\*\* cellular polyethylene expansion joint fillers. For construction or contraction joints a bond breaker tape or back-up strip should be used. Where hydrostatic pressure exists, only bond breaking tapes must be used, not foamed back-up strips.

Where a particularly neat finish is required, mask the face edges of the joint before priming and remove immediately after tooling is completed.

### Priming

#### Non-porous surfaces

Use Primer 4 on glass, ceramics and metals. The one part chemically active clear liquid is to be applied by brush or pad. One thin coat should be applied and allowed to dry for 2 to 5 minutes prior to sealant application.

#### Porous surfaces

**Primer 7E:** It is a two part high performance chemically active non-toxic liquid for brush application to prime all concrete, stone, brickwork, timber and unglazed edges of ceramic tiles. Add component A of Primer 7E to component B and mix thoroughly until a homogeneous dispersion is achieved. Apply one thin coat using a clean, dry brush, ensuring complete

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coverage. Avoid over priming resulting in an excess of primer in the base of the joint or application beyond faces. The mixed Thioflex 600 must be applied when the primer is tack free, that is after the evaporation of the solvent but before the primer film has completely reacted. After 6 hours @ 20°C, or 3 hours @ 35°C the surfaces must be re-primed before applying the sealant.

## Steel surfaces

Iron and steel must be protected with an anti-corrosion primer prior to sealing.

## Mixing

### Gun Grade

The base component and curing agent are supplied ready for mixing in a single tin. Mix thoroughly using a slow speed drill (300-500 rpm) fitted with a Fosroc Mixing Paddle (MR2) for 5 minutes. Only thorough mixing, including material right at the bottom of the tin, will result in proper curing. In cold weather Thioflex 600 mixes more easily if stored overnight at room temperature.

Immediately after mixing, load the sealant into a Fosroc 'G' Gun using the follower plate, and apply to the joint.

### Pouring Grade

Thioflex 600 Pouring Grade is supplied in two separate containers. The small container contents should be transferred to the other tin, and mixed as per the gun grade instructions. The pouring grade may be poured directly into horizontal joints or for application to horizontal joints less than 15 mm wide loaded into a Fosroc 'G' Gun. For quantity application, a Fosroc 1.5 litre gun is available.

## Finishing

Thioflex 600 should be tooled to a smooth finish. A minimum of surface lubricant such as dilute detergent solution may be used to assist the process. Any masking tape should be removed immediately after tooling.

## Cleaning

Clean equipment immediately after use with Fosroc Solvent 102.

## Limitations

- Over-painting of sealants is not recommended because of the inability of paint films to accept movement. However, if required, trials should be carried out to determine compatibility.

- Thioflex 600 should not be used in direct contact with materials containing pitch or bitumen.
- Only Thioflex 600 Gun Grade should be used in vertical or horizontal joints in reservoirs or other water retaining structures.
- Thioflex 600 is not recommended for use in highly chlorinated water. If in doubt, contact your local Fosroc technical services department.

## Estimating

### Supply

<b>Thioflex 600 GG</b>	: 2.5 litre & 4 litre packs
<b>Thioflex 600 PG</b>	: 4 litre & 5 litre packs
<b>Primer 4</b>	: 1 litre cans
<b>Primer 7E</b>	: 500 ml cans
<b>Fosroc solvent 102</b>	: 5 litre containers

### Coverage

<b>Primer 4</b>	: 60 m <sup>2</sup> /litre
<b>Primer 7E</b>	: 8-10 m <sup>2</sup> /litre

**Note:** Coverage figures given are theoretical due to wastage factors and the variety and the nature of substrates, practical coverage figures maybe reduced, this will vary with site and application conditions.

## Guide to sealant quantities

Joint size in mm	Litres per Metre run	Metre run per 2.5 ltr pack	Metre run per 4ltr pack	Metre run per 5 ltr pack
5 x 5	0.025	100.00	160.00	200.00
5 x 10	0.050	50.00	80.00	100.00
10 x 5	0.050	50.00	80.00	100.00
10 x 10	0.100	25.00	40.00	50.00
20 x 10	0.200	12.50	20.00	25.00
20 x 15	0.300	8.30	13.30	16.60
20 x 20	0.400	6.20	10.00	12.50
40 x 20	0.800	3.10	5.00	6.20
40 x 25	1.000	2.50	4.00	5.00
40 x 30	1.200	2.00	3.30	4.10
40 x 40	1.600	1.50	2.50	3.10
50 x 25	1.250	2.00	3.20	4.00
50 x 30	1.500	1.60	2.64	3.30
50 x 40	2.000	1.25	2.00	2.50
50 x 50	2.500	1.00	1.60	2.00

1 litre of Primer 4 to 1500m length of 10 x 20mm joint.

1.5 litre of Primer 7E to 150m length of 10 x 20mm joint.

These are theoretical yields. No allowance has been made for variation in joint width or wastage.



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## Storage

Thioflex 600 and Primer 7E have a storage life of 12 months and Primer 4 has a storage life of 6 months when kept in original containers and stored in dry conditions between 5°C and 27°C.

## Precautions

### Health and safety

Thioflex 600, Primer 4 and Primer 7E should not come in contact with skin and eyes or be swallowed. Avoid breathing of vapour. Splashes must be washed off immediately. Wear impervious rubber or PVC gloves and eye protection. Hands should be thoroughly washed with soap and water before eating or smoking. In the case of eye contact seek medical attention immediately.

Thioflex 600 curing agent consists of a heavy metal based oxide. Cured sealant should not be burned off due to the generation of toxic fumes. Empty containers must be collected for careful disposal and not left lying about.

### Fire

Fosroc Solvent 102 is flammable. Primer 4 and primer 7E are highly flammable, store away from heat. Do not use near naked flames or other sources of ignition. No smoking. Use in well ventilated surroundings. In the event of fire, extinguish with CO<sup>2</sup> foam.

### Flash point

<b>Primer 4</b>	:	10°C
<b>Primer 7E</b>	:	23°C

For further information, refer to the Product Material Safety Data Sheet.

## Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following :

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.

\* Denotes the trademark of Fosroc International Limited

† See separate data sheet



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## Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the recent version.**

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