

Multi-component, gun and pouring grade, polysulfide sealant

Uses

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

Advantages


- Meets key international standards
- Forms a tough, elastic, rubber-like seal
- Accommodates continuous and pronounced cyclic movement
- Excellent adhesion to most common substrates, including primed concrete, glass, aluminium and stainless steel
- High resistance to ageing reduces physical damage due to climatic extremes

Description

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

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, basements and subways.

Thioflex 600 pouring grade is recommended for initial sealing of expansion joints and stress relief joints in floors and sealing other horizontal surfaces.

|  0370 Fosroc Ltd Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK | | 14 | 14 |
|--|--|---|--|
| | | DOP: UK9-85 0370-CPR-0845 Thioflex 600 Gun Grade | DOP: UK9-86 0370-CPR-0845 Thioflex 600 Pouring Grade |
| | | EN14188-2:2004 Joint fillers and sealants - Part 2: cold applied sealants | |
| Cold applied joint sealant system: | | Multi-component (M) | Two component (M) |
| Type: | | Non sag (ns-type) | Self-levelling (sl-type) |
| Class: | | Class A, B, C | Class A, B, C |
| Polymer base: | | Polysulfide | Polysulfide |
| Test methods | Requirements | Thioflex 600GG Test results | Thioflex 600PG Test results |
| Extrudability (EN 29048) | > 70ml/min | 200ml/min | Not applicable |
| Rate of cure (EN 14187-1) | MDV | ≥ 80% at 48 hours | ≥85% at 48 hours |
| Tack free time (EN 14187-2) | MDV | ≥ 24 hours | ≥ 24 hours |
| Resistance to flow (EN 7390) | Vertical ≤ 2mm Horizontal ≤ 2mm | 0mm 0mm | Not applicable |
| Self-levelling (EN 14187-3) | Horizontal 5°C 2½% slope 23°C | Not applicable | 1.8mm 1.5mm |
| Loss of volume (EN 10563) | <5% | 0.19% | Not applicable |
| Change in mass and volume after immersion in liquid chemicals (EN 14187-4) | Change in mass ≤ -25% by mass ≤ ± 30% by volume | Test fuel I (mass) -24% Test fuel II (mass) -17% Test fuel I (volume) -9% Test fuel II(volume) -3% | Test fuel I (mass) -18% Test fuel II (mass) -11% Test fuel I (volume) 22% Test fuel II(volume) 3% |
| Resistance to hydrolysis (EN 14187-5) | Change of Shore A hardness ≤ 50% | -15% | - 25% |
| Resistance to flame (EN 14187-7) | No flow, cracking, flaking, hardening or ignition | Pass | Pass |
| Cohesion -20°C (EN 9047) | No failure | No failure | No failure |
| Bonding strength (EN 8340:2005) | At 23°C ≥ 0.15MPa At -20°C ≥ 0.60MPa | 0.23MPa - No failure 0.45MPa - No failure | 0.16 MPa - No failure 0.51 MPa - No failure |
| Elastic recovery (EN 7389) | ≥70% | ≥89% | ≥86% |
| Artificial weathering by UV radiation (EN 14187-8) | ≤ ±20% change in modulus at 100% extension | 1.9% | 6% |
| Adhesion/cohesion after immersion in liquid chemicals (EN 14187-6) | Test fuel I Test fuel II | No failure No failure | No failure No failure |

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Thioflex 600

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.

Standards compliance

British Standard EN14188-2:2004.*

U.S. Federal Specification TT-S-00227E November 1969 (amended 1970).

DTp specification for Highway Works December 1991 series 1000 clause 1017.

ASTM C920-87: Type M, Grade NS, Class 25.

*Use of Fosroc Primer 7E required.

Properties

| | |
|---|---|
| Form: | Multi-part, paste compound |
| Colours: | Gun grade: grey Pouring grade: grey |
| Movement accommodation factor (BS 6093): | 25% butt joints 50% lap joints |
| Physical or chemical change: | Chemical cure |
| Pot life: | 2 hours @ 25°C |
| Setting time: | 72 hours at 5°C 36 hours at 15°C 18 hours at 25°C |
| Cure time: | 4 weeks at 5°C 2 weeks at 15°C 1 week at 25°C |
| Application temperature: | 5°C to 50°C |
| Operating temperature: | -20°C to +60°C |
| Hardness shore | Gun grade grey: 20 to 25 |

| | | |
|--|--|---------------|
| 'A' 25°C: | Pouring grade: 15 to 23 | |
| Water immersion: | Thioflex 600 must be fully cured before permanent immersion in water | |
| 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 |
| Biological resistance: | Thioflex 600 has been evaluated in microbiologically active situations and has been shown to have resistance to aerobic conditions | |
| Solids content: | 100% | |
| Density: | 1.62 kg/litre | |
| Flash point: | Over 65°C | |
| Flammability: | Burns but does not readily support combustion | |

Application instructions

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 Equipment 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 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

When Fosroc Primers 4, P7 or 7E are required, these should be used as follows:

Fosroc Primer 4: For use on glass and ceramics which are to be permanently immersed in water. It is a one part chemically active clear liquid for brush or pad application. One thin coat should be applied and allowed to dry for 2 to 5 minutes prior to sealant application.



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Fosroc Primer P7: It is a one part chemically active clear liquid for brush application to concrete, stone, brickwork, timber and unglazed edges of ceramic tiles. One thin coat should be applied using a clean, dry brush, ensuring complete 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 3 hours the surfaces must be re-primed before applying the sealant.

Fosroc Primer 7E: It is a two part primer for brush application to concrete, stone, brickwork, timber and unglazed edges of ceramic tiles, where joints are to be intermittently or permanently immersed, or where the substrate is likely to be saturated and/or where compliance to EN14188 is required.

When using Fosroc Primer 7E, empty the entire contents of the hardener tin into the base, replace the base tin lid and shake thoroughly. Prime the joint face using a clean dry brush. Avoid over application of the primer causing puddles at the bottom of the joint. Thioflex 600 should be applied between 30 minutes and 4 hours after priming.

If the joint is left unsealed for more than 4 hours, the primer should be removed by grit blasting or grinding and the joint re-primed. Do not split packs of Primer 7E.

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 to 500 rpm) fitted with a Fosroc Sealant Mixing Paddle 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 base in the larger tin and the curing agent in a sachet. The sachet contents should be transferred to the 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.

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 Equipment Cleaner.

Contract application

The designer or contractor may wish to use the services of a specialist sub-contractor for joint sealing work. Names of specialist sub-contractors are available from Fosroc.

Maintenance

No special requirements, any damage identified during normal building inspections should be repaired or replaced as appropriate.

Estimating

Packaging

Thioflex 600 gun grade is supplied in 2.5 litre tins in cartons of four.

Thioflex 600 pouring grade is supplied in a 5 litre tin, curing agent included in a sachet inside the tin.

Primer 4 is supplied in 0.25 litre tins.

Primer P7 is supplied in 0.5 and 5 litre tins.

Primer 7E is supplied in 1 litre packs.

Guide to quantities

| Joint size in mm | Litres per metre run | Metre run per 2.5 litre pack | Metre run per 5 litre pack |
|---------------------|-------------------------|---------------------------------|-------------------------------|
| 5 x 5 | 0.025 | 100.00 | 200.00 |
| 5 x 10 | 0.050 | 50.00 | 100.00 |
| 10 x 10 | 0.100 | 25.00 | 50.00 |
| 20 x 10 | 0.200 | 12.50 | 25.00 |
| 20 x 15 | 0.300 | 8.33 | 16.67 |
| 20 x 20 | 0.400 | 6.25 | 12.50 |
| 40 x 20 | 0.800 | 3.12 | 6.25 |
| 40 x 25 | 1.000 | 2.50 | 5.00 |
| 40 x 30 | 1.200 | 2.00 | 4.00 |
| 40 x 40 | 1.600 | 1.56 | 3.12 |
| 50 x 25 | 1.250 | 2.00 | 4.00 |
| 50 x 30 | 1.500 | 1.67 | 3.33 |
| 50 x 40 | 2.000 | 1.25 | 2.25 |
| 50 x 50 | 2.500 | 1.00 | 2.00 |

1 litre of Fosroc Primer 4 to 300 litres of Thioflex 600.
1 litre of Fosroc Primer P7 to 30 litres of Thioflex 600.

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

Guide to Thioflex 600 Primer coverage:

Linear metres per pack of primer

| Joint depth | Primer 4 | Primer P7 | | | | Primer 7 E |
|-------------|------------|--------------|-----|------------|------|------------|
| | | 0.5 ltr pack | | 5 ltr pack | | |
| mm | 250ml pack | | | | | 1ltr pack |
| 10 | 750 | 300 | 375 | 3000 | 3750 | 400 |
| 15 | 500 | 200 | 250 | 2000 | 2500 | 266 |
| 20 | 375 | 150 | 188 | 1500 | 1875 | 200 |
| 25 | 300 | 120 | 150 | 1200 | 1500 | 160 |
| 30 | 250 | 100 | 125 | 1000 | 1250 | 134 |
| 40 | 188 | 75 | 94 | 750 | 938 | 100 |
| 50 | 150 | 60 | 75 | 600 | 750 | 80 |

These are theoretical values. No account has been taken of variances in substrate, absorptivity or wastage.

Limitations

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

Thioflex 600 should not be used in direct contact with materials containing pitch or bitumen.

Thioflex 600 is not suitable for use in contact with potable water; Nitoseal MS600 should be used.

Storage

Storage life of 12 months in original containers when kept in dry conditions between 5°C and 27°C.

Precautions

Health and safety

For further information refer to appropriate Product Safety Data Sheet.

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Important note

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