Fosroc® Thioflex 555

constructive solutions

High performance, elastomeric, pavement joint sealant

Uses

Polysulfide sealant for the sealing and maintenance of joints in concrete roads, concrete runways and hard standings. Particularly suitable for sealing areas where fuel spillage might occur such as aircraft fuelling areas, oil terminals, garage forecourts, parking and cargo areas. Available in machine grade (ultra-fast setting) and hand grade (fast setting).

Advantages

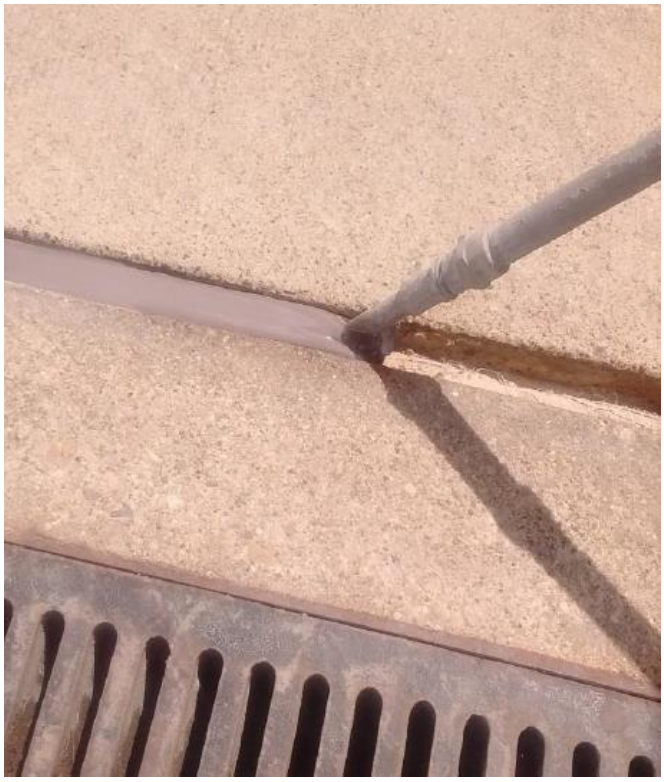
- Meets key international standards
- Machine applied grade for ultra-fast safe application
- High extrusion rates
- Rapid return to service
- Available in hand grade
- Fuel and hydraulic fluid resistance
- Jet blast resistance
- Polysulfide - high stress relaxation
- High resilience
- Resistant to stone/ dirt pickup
- High durability and long service life
- High movement accommodation

Description

Thioflex 555 is a two component, polysulfide self-levelling type sealant product designed to meet requirements in pavement applications. Machine Grade Product is ideal for ultra-fast return to service and should be applied through a suitable metered application machine, by specialist applicators - details on request.

The product retains its movement accommodation of 35% on butt joints throughout temperature extremes. It does not harden in cold weather nor become excessively soft in hot conditions.

The width/depth ratio of the seal should be 1:1 to 1½:1 subject to a minimum 10mm depth of sealant (example, contraction joint: 15mm wide x 13mm depth; expansion joint: 25mm wide x 20mm depth).



Standards compliance

BS EN 14188-2:2004. Joint fillers and sealants. Specifications for cold applied sealants: Two component (M) / self-levelling (sl type)/ Class B, C and D.

British Standard 5212 : Part 1: 1990 Cold applied joint sealant systems for concrete pavements. Specification for joint sealants— types N, F and FB.

US FED SPEC SS-S-200E: 2 component, Jet Blast Resistant, Cold Applied, for Portland Cement Concrete Pavement

ASTM C920 Type M, Grade P, Class 25.

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Typical Properties

Form:	Two component product comprising liquid base and hardener
Colour	Grey (Base – white, Hardener – Black)
Return to service times:	
Machine Grade, Approx	35 – 40°C: 10 mins 30°C: 15 mins 20°C: 30 mins 10°C: 60 mins 5°C: 90 mins
Hand Grade, Approx	35 – 40°C: 60 mins 30°C: 2 hours 20°C: 4 hours 10°C: 12 hours 5°C: 36 hours
Movement accommodation factor (BS8449)	35%
Mix ratio Machine Grade: Hand Grade:	 1:1 by volume (base : hardener) Pre-weighed units
Machine output range	100 parts by weight Base to 114 – 125 parts by weight Hardener
Application Ambient Temp. Range:	5°C – 50°C
Application Material Temp. Range	15°C – 40°C
Specific Gravity at 20°C	Base: 1.36 – 1.44 Hardener: 1.68 – 1.76
Shore A Hardness at 20°C, approx.:	10
Chemical resistance to spillage	Aviation fuels, Skydrol, Kerosene, Glycols, Petrol, Diesel, De-icing salts
Flash point	>65°C
Resistance to flame (BS5212-1)	Pass No combustion, flow, hardening or loss of flexibility
Service Temp Range	-40 to +70°C
Tensile strength Elongation at break (ISO8339:2005)	0.34 MPa 350%

The typical physical properties given in above tables are derived from testing in a controlled laboratory environment. Results derived from testing field-applied samples may vary depending on actual site conditions.

CE 15	UKCA 22
DOP: UK9-172, UK9-203	
Fosroc International Limited Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK	
Thioflex 555 Machine Grade **Thioflex 555 Hand Grade**	
EN14188-2: Joint sealants for concrete pavements - cold applied	
Cold Applied Joint Sealant System: Type: Classes: Polymer Base:	 Two-component (M) Self-levelling (SL) B, C, D Polysulfide
Rate of Cure: Machine Grade: Hand Grade: Tack-Free Time: Machine Grade: Hand Grade:	 98% at 2 hours 98% at 24 hours <30 minutes <3 hours
Bonding Strength and Cohesion: - Tensile Modulus at 23ºC (MPa): - Adhesion/ Cohesion: - Tensile Modulus at -20ºC (MPa): - Adhesion/ Cohesion:	 0.16 No Failure 0.29 No Failure
Resistance to Deformation: - Elastic Recovery (%): - Loss of Volume (%):	 91.7 4.9
Durability in Liquid Chemicals: Change in Mass (%) ; Volume (%) ; Adhesion/Cohesion: - Test Fuel I: - Test Fuel II: - Mono Ethylene Glycol 70%: - Potassium Formate 50% - Potassium Acetate 50% - Diesel - Hydraulic Oil Castrol AWS68	 -9.0% ; -24.7%; NF -4.2% ; -18.9%; NF +2.5%; - 0.1%; NF -0.1%; - 0.3%; NF -0.1% ; -0.4%; NF -5.8% ; -6,2%; NF -4.7% ; -3.7%; NF
Resistance to Flame:	Pass
Durability of mandated characteristics against Ageing: - Hydrolysis, Change of hardness - Irradiation, Change of Tensile Modulus (%): Adhesion/ Cohesion	 0 15 No Failure

Application instructions

Joint preparation

Joint sealing slots in concrete should be accurately formed and must be dry, sound, clean and free from frost.

Remove dust and laitance prior to priming. Grit blasting is an appropriate method for new and existing concrete pavement substrates. The prepared sealing slot should be blown out with dry, oil-free compressed air.

Ensure that any expansion joint filler is tightly packed in the joint and insert a bond breaker or Expandafoam cord caulked tightly into the base of the sealing groove to prevent sealant adhering to the base of the slot and provide the specified depth of sealant.

Priming - Concrete

Prime concrete joint faces with Fosroc Primer 7E.

Empty the entire contents of the hardener tin into the base tin and replace base tin lid. Mix thoroughly by shaking tin for approximately 2 minutes. Prime the joint face using a clean dry brush, or by spraying. Avoid over application of primer to prevent puddles forming in the bottom of the joint. Fosroc Thioflex 555 should be applied between 20 minutes and 4 hours after priming. If the joint is not sealed within this time, the joint should be reprimed. If the joint is not sealed or reprimed within 24 hours, the cured primer should be removed and the joint reprimed.

The mixed Fosroc Primer 7E should be applied within one working day. Do not dilute Fosroc Primer 7E. Do not split packs of Fosroc Primer 7E.

Priming – Asphalt

To the clean, sound asphalt joint face apply Nitoflor FC130 and allow to dry. Then prime both joint faces with Fosroc Primer 7E as described above and seal the joint as detailed in the mixing and application instructions. If the asphalt is new, has a high or soft bitumen content, undertake local adhesion tests before main sealing works to confirm bond. If the results are satisfactory (cohesive failure within asphalt or sealant) then proceed with joint sealing.

Mixing

Machine Grade

Mixing is carried out through a metered mixing machine. For a recommendation of machine model please refer to Fosroc office. Prior to application and at regular intervals the output ratio should be checked and be within limits – see Typical Properties, Machine Output Range. For ease of application the product should be stored at 20 - 25°C prior to use. For optimum application properties, the components may be warmed to approx. 30°C, immediately prior to use.

If machine application with a slower setting time is preferred (e.g. ambient and/or substrate temperature >35oC), then an option of using the large pack sizes of Hand Grade through the 1:1 volume metered mixing machine is permissible. See Hand Grade section below, contact Fosroc for advice if necessary.

Separation can occur in the Base units, particularly if stored for long periods in warm conditions. Remix using a drill and paddle before use.

Hand Grade (5 litre packs)

Empty the entire contents of the hardener tin into the base tin. Mix thoroughly for approximately 3 minutes using a slow speed drill (300 to 500rpm) fitted with a Fosroc Sealant Mixing Paddle. Do not mix air into the product. Scrape down and mix for a further approximately 2 minutes. Only thorough mixing, including material at the bottom of the tin, will result in proper curing.

The mixed product may be poured directly from the tin into horizontal joints, or for application to horizontal joints less than 15 mm wide may be loaded into a Fosroc ‘G’ Gun for application.

For optimum application properties in cold conditions, the components may be warmed to approx. 30°C, prior to use.

Hand Grade (30 litre and 400litre packs)

These pack sizes are for use by machine application only. They can be used if a slower setting time is preferred e.g. at >350C but they must be applied via a 1:1 volume metered mixing machine as per guidance in “Machine Grade” section above. Contact Fosroc for advice if necessary.

Application

Apply the mixed sealant so that the finished level of the seal is recessed 5-8mm below the pavement surface.

Topping Up Sealed Joints

If insufficient depth of sealant was initially applied, it is advised to ‘top up’ to the required level on the same day as original installation.

Where the sealant has been left to cure beyond the day of installation, ensure the surface is blown free of dust and debris, then rag-wiped with Fosroc Solvent 102 to remove contamination such as oil and grease; the surface should be dry and look ‘clean and fresh’. The ‘topping-up’ layer should not be less than 3mm thickness. Where the sealant has been exposed to the elements for several weeks, a test area is recommended. If a good bond cannot be achieved (the topped-up sealant can be pulled away), the old sealant should be removed and the joint re-sealed.

Cleaning

When necessary, clean equipment with Fosroc Equipment Cleaner; ensure any mixed material is cleaned immediately after use. Cured material can only be removed mechanically.

Limitations

Machine Grade product cures very rapidly. Mixed material should not be left in the machine hose or lance for >5 mins

at 20°C, or >3 mins at 40°C, as material may become difficult to extrude as it approaches its mixed gel time.

Thioflex 555 should not be used in direct contact with materials containing pitch or bitumen. See Priming – Asphalt for more detailed advice.

Apply at substrate temperatures of minimum 5°C and rising. Material temperature should be in the range 15-40°C.

Do not apply direct heat to product.

Product is not compatible with bituminous surfaces.

For the sealing of industrial floor joints, higher modulus sealants such as Nitoseal MS300 or Nitoseal PU800 are recommended. See separate data sheet.

Estimating

Unit contents

Fosroc Thioflex 555:

Machine Grade: 30 and 400 litre packs

Hand Grade: 5 litre packs

(30 and 400 litre larger packs for application by machine - see mixing by machine/hand grade)

Fosroc Primer 7E: 0.5 litre and 1 litre units

Guide to sealant quantities

A 1 litre pack of Fosroc Primer 7E will be sufficient for approximately 30 litres of Thioflex 555 sealant. Yields are theoretical; no allowance has been made for variations in joint dimensions or wastage.

Joint size in mm	Litre per metre	Metre per 30 litre	Metre per 5 litre
10 x 10	0.10	300	50
15 x 15	0.23	134	22
20 x 20	0.40	75	13
25 x 20	0.50	60	10
30 x 25	0.75	39	7

Health and safety

Refer to appropriate Product Safety Data Sheet.

Storage

12 months in original unopened containers stored in cool, dry conditions at ≤25°C. Higher temperatures may reduce storage life.

Environmental Data (EPD)

GWP Total, A1 – A3: 2.32 kgCO2e per 1 litre of product.

GWP Total, A1 – D: 3.18 kgCO2e per 1 litre of product.

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