

# Fosroc® Thioflex 555

## 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

- 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).

### Typical Properties

Form:	Two component product comprising liquid base and hardener	
Colour:	Grey (Base White, Hardener Black)	
Movement accommodation factor: BS8449	35%	
Mix Ratio,		
Machine Grade:	1:1 by volume (base : hardener)	
Hand Grade:	Preweighed units	
Machine Output Range:	100 parts by weight Base to 115-125 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
Gel times Approx.;		
Machine Grade, 100g mix	35-40°C:	5 mins
	20-25°C:	10 mins
Hand Grade, Pot life	35-40°C:	40 mins
	20-25°C:	120 mins
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
These times are approximate and dependent on material temperatures in the machine, ambient and substrate temperature and joint size. When applying Hand Grade at ambient and surface temperatures below 20°C, the return to service times can be improved by first storing the mixed material above 20°C for an hour before application.		
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°C to +70°C	
ISO8339:2005 at +23°C,		
Tensile strength	0.34Mpa	
Elongation at break	350% (with substrate)	

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 - dependent on actual site conditions.

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## 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.

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

Durability of mandated characteristics against Ageing:	0
- Hydrolysis, Change of hardness	
- Irradiation, Change of Tensile Modulus (%):	15
- Adhesion/ Cohesion	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

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.

### 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 >35°C), 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.

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## 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 >35°C 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.

## 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.

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.

Where product could come into contact with pavement asphalt, please contact the local Fosroc office for advice.

When sealing trafficked joints >50mm wide at the time of

installation, contact the local Fosroc office for advice.

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 1litre units

### Guide to sealant quantities

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

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.

## 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.

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## Fosroc International Ltd

Drayton Manor Business Park  
Coleshill Road, Tamworth,  
Staffordshire B78 3XN. UK

[www.fosroc.com](http://www.fosroc.com)

### Important note

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telephone:  
+44 0 (1827) 262222

fax:  
+44 0 (1827) 262444

email:  
[enquiryuk@fosroc.com](mailto:enquiryuk@fosroc.com)



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