

## One-part high modulus fire rated trafficable sealant

### Uses

For fire protection of construction, contraction and expansion joints within stadia terracing, floors, curtain walling and building façades.

### Advantages

- Up to a 5 hour fire rating in specified joint configurations
- Excellent adhesion
- High modulus trafficable sealant
- Prevents the passage of smoke through joints in fire conditions
- Can be applied to concrete or mild steel substrates

### Standards compliance

Flamex MS320 has been tested to the following standards:

BS EN 1366-4 in expansion joints achieving up to a 5 hour fire rating.

EN 15651-4, requirements for cold applied sealants used in movement joints in floors in building construction for interior and exterior use.

### Description

Flamex MS320 is a fire rated MS based sealant which cures quickly and gives excellent adhesion to most building materials. As well as applications in wall and soffit joints, the product's high Shore A hardness allows Flamex MS320 to be used in floor joints subject to foot traffic, e.g. stadia terrace floors.

When subjected to fire, Flamex MS320 forms a stable insulating char which provides protection to the remaining sealant. Heat, flames and smoke are prevented from passing through the joint to adjacent areas of the structure.

### Properties

Form	Thixotropic paste
Colour	Grey
Movement accommodation factor (MAF)	20% butt joints (at 1:1 width / depth ratio)
Skinning time (23°C at 50% RH):	2 hours
Cure rate (23°C at 50% RH)	2 mm per day
Application temperature	5°C to 30°C
Typical Shore 'A' hardness	40



### Joint Design - Wall

Minimum joint width: 6mm

Maximum joint width: 25mm

For joints 6 – 12mm wide, a depth of 10mm is required.

For joints 13 – 25mm wide, a depth of 15mm is required.

### Joint Design - Floor

Minimum joint width: 6mm

Maximum joint width: 30mm

For joints 6 – 12mm wide, a depth of 10mm is required.

For joints 13 – 20mm wide, a depth of 15mm is required.

For joints 21 – 30mm wide, a depth of 20mm is required.

### Fire ratings

The fire rating table below give times for insulation and integrity ratings, these are defined as:

**Insulation:** The ability to restrict excessive heat transfer through the joint.

**Integrity:** The ability to remain intact during the test, avoiding ignition of combustible materials on the unexposed joint surface.

The fire ratings given are specific to the conditions of the test and provide a good indication of the expected performance of the sealant in a fire situation. Users should satisfy themselves that the test results are applicable to their own installations. Testing of a particular system may be required. To achieve any specific fire rating, all substrates being used must have at least an equivalent fire rating.


### Fire ratings: Wall & Soffit Joints

Substrate details	Joint Dimension (width x depth) mm	Insulation (mins)	Integrity (mins)
Concrete Soffit	20x15	148	330*
Concrete	25x15	94	301
Concrete	20x15	88	330*
Concrete	12x10	140	330*
Steel	12x10	37	330*

### Fire ratings: Floor Joints

Substrate details	Joint Dimension (width x depth) mm	Insulation (mins)	Integrity (mins)
Concrete	30x20	95	321
Concrete	20x15	87	330*
Concrete	12x10	121	203

\*Test discontinued (note: integrity still maintained)

 23	DOP: UK9-225	
<b>Fosroc International Limited</b> Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK	EN 15651-4:2012 Sealants for pedestrian walkways	
<b>Test</b>	<b>Requirement</b>	<b>Result</b>
Elastic Recovery (EN ISO 7389)	>60%	85%
Resistance to Flow (EN ISO 7390, Procedure A)	<3mm	0mm
Tensile Properties Secant modulus at 60% (EN ISO 8339)	At 23° C >0.4 MPa	0.8 N/mm <sup>2</sup>
Tensile Properties at 60% maintained extension	NF at 23°C	Complies
Adhesion/cohesion at variable temperature (±20% movement) (EN ISO 9047)	NF	Complies
Volume loss % (EN ISO 10563)	<10%	-4.2%
Adhesion/cohesion after exposure to heat light and water (EN ISO 11431)	NF	Complies
Resistance to Tear (EN ISO 8340 Modified)	NF	Complies
Tensile properties at maintained extension after extended soak in Water (60% elongation) (EN ISO 10590 Modified)	NF	Complies
Tensile properties at maintained extension after extended soak in salt water (60% elongation) (EN ISO 10590 Modified)	NF	Complies
Durability (EN ISO 8339, EN ISO 8340, EN ISO 9047)	Pass	Pass

Note: NF = No Failure

**Clarification of property values:** The typical properties given above are derived from laboratory testing. Results derived from field applied samples may vary.

## Application instructions

### Joint preparation

The joint surfaces must be thoroughly dry, clean and frost free. Remove all contamination by rigorous wire brushing, grinding or grit blasting. Avoid polishing the joint sides when grinding. Remove all rust, scale and protective lacquers from metal surfaces. Remove any oil or grease with Fosroc Equipment Cleaner. When resealing all traces of previously applied sealant should be removed. The prepared sealing slot should be blown out with dry, oil-free compressed air.

Flamex MS320 must be backed or supported with Expandafoam Cord, Hydrocell XL or a bond breaker tape. The choice will be dependent upon the performance level required and the type of joint being sealed. Where Expandafoam is to be used ensure that an appropriate diameter cord is selected to give sufficient compression and support to the sealant.

In construction or contraction joints, if the joint is not deep enough to accept Expandafoam cord, a bond breaker tape should be applied to the base of the sealing slot to prevent three side adhesion of Flamex MS320. Ensure the correct joint profile is obtained.

Where a particularly neat finish is required, mask the face edges of the joint before priming/sealing.

### Priming

Nitoseal MS2 Primer is required for all joints.

Empty the entire contents of the hardener tin into the base tin and replace the base tin lid. Mix thoroughly by shaking for at least 2 minutes. Prime the joint faces using a clean, dry brush. Do not apply primer onto Expandafoam backing rod. Avoid over application of primer causing puddles in the bottom of the joint.

Flamex MS320 should be applied between 30 minutes and 4 hours after priming.

If a 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 Nitoseal MS2 Primer.

A mixed pack of Nitoseal MS2 Primer should be consumed within 12 hours.

### Application

Cut end off sachet and place in Fosroc GX Gun. Fit nozzle and cut at 45° to a suitable size. Extrude the sealant firmly into the joint.

In trafficable expansion joints, the sealant should be recessed 2 – 3mm. For all other joints, the sealant may be finished flush with the joint surface.

### Finishing

Flamex MS320 should be tooled to the required finish (flush or recessed) within 5 minutes of sealing to ensure good contact between the sealant and the substrate. Remove any masing tape along the joint edges immediately after tooling is completed.

### Cleaning

Uncured Flamex MS320 can be removed from tools and non-porous surfaces using Fosroc Equipment Cleaner. Sealant adhering to porous surfaces should be left to cure and then removed by abrasion.

### Estimating

#### Guide to Nitoseal MS2 Primer quantities

Linear metres per pack of primer	
Joint depth mm	Nitoseal MS2 Primer 0.75 litre pack
10	500 - 600
15	333 - 400
20	250 - 300

#### Guide to Flamex MS320 quantities

Joint size in mm	Litres per metre run	Metre per 600ml sachet
12 x 12	0.144	4.1
15 x 15	0.225	2.6
20 x 15	0.30	2.0
25 x 20	0.50	1.2
30 x 20	0.60	1.0

### Packaging

Flamex MS320: 600 ml foil sachets. 10 sachets per box.

Nitoseal MS2 Primer: 0.75 litre packs

### Storage

Nitoseal MS320 has a shelf life of 12 months if kept in a dry store at 10 – 20°C in original unopened packaging. If stored at high temperatures and / or humidity, the shelf life may be significantly reduced.

# Technical Datasheet

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## Limitations

Flamex MS320 should not be applied to surfaces that are below 5°C.

Not suitable for contact with bituminous materials or other substrates that bleed oils, plasticisers or solvent

In large joints ensure sealant is sufficiently cured before trafficking. In 25 – 30mm joints this could be up to 10 days.

## Precautions

### Health and safety

For further information refer to appropriate Product Safety Data Sheet.

### Fire

Flamex MS320 is non-flammable.  
Nitoseal MS2 Primer is highly flammable, see product safety data sheet for details.

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### Important note

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