



New Guard Coatings Group

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Fosroc® Nitoseal MS100

constructive solutions

One part, primer-less, non-staining facade sealant

Uses

Nitoseal MS100 has been formulated for stain-free sealing of joints in and around concrete, brick, masonry, pre-cast panels, stone cladding, windows, doors and fibre cement sheeting.

Advantages

- Will not stain masonry, marble or other surfaces.
- Excellent primer-less* adhesion to most common building materials.
- Can be applied to damp substrates
- Fast neutral cure.
- Highly flexible with excellent application characteristics.
- Low odour, environmentally friendly.
- Low modulus and high movement capabilities.
- Excellent UV and weather resistance
- Performs as an acoustic sealant
- Good adhesion to silicone, polysulphide or polyurethane contaminant.

* Refer to Priming section.

Standard compliance

ISO 11600 Type F 25LM

Performs as an acoustic sealant to:


BS EN ISO 140-3:1995 Laboratory measurement of airborne sound insulation of building elements

BS EN ISO 717-1:1997 Rating of sound insulation in buildings and of building elements. Airborne Sound Insulation.

Description

Nitoseal MS100 is a tough, durable elastomeric joint sealant. It is based upon hybrid silyl modified polyether technology. It is suitable for use over a wide range of external and internal building applications and has excellent weather resistance.

Nitoseal MS100 has excellent primer-less adhesion to a wide range of common building substrates and does not stain concrete, marble and other masonry surfaces.

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|  2538 | |
| Fosroc Ltd Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK 14 DOP: UK9-84 | |
| Nitoseal MS100 | |
| EN 15651-1:2012 Sealants for façade elements | |
| Resistance to flow | ≤ 3mm |
| Change in mass/volume | ≤ %5 by volume |
| Tensile properties at maintained extension after immersion in water | No failure |
| Tensile properties at maintained extension | No failure at 23°C and -20°C |
| Tensile properties – Extension to break | No failure at -20°C ≤ 0.6 MPa |
| Tensile properties – Extension to break | No failure at 23°C ≥ 0.4 MPa |
| Adhesion/Cohesion properties at variable temperatures | No failure |

Properties

Uncured sealant:

| | |
|---------------------------|---|
| Form: | Smooth, non slump paste |
| Flash point: | >65°C |
| Solids content: | 100% approximately |
| Skinning time: | up to 2 hours depending on ambient conditions |
| Application range: | 5°C to 50°C |
| Cure rate: | 3 mm in 24 hrs, 8mm in 7 days 20°C/50% RH |

Cured sealant:

| | |
|-----------------------------------|---|
| Form: | Elastic solid |
| Colours | White, Grey and Black (other colours available see local Fosroc office) |
| Typical hardness | |
| Shore 'A' @ 20°C: | 20 |
| E-Modulus ISO 8339 | <0.4N/mm ² |
| Elongation ASTM D412 | >900% |
| Modulus classification: | Low |
| U.V. resistance: | Excellent |
| Service temperature range: | -40°C to 70°C |

Fosroc® Nitoseal MS100

| | | |
|----------------------|-------------|-----------------------------|
| MAF: | Butt joints | 50% primed 25% unprimed |
| | Lap joints | 100% primed 50% unprimed |
| LEED EQc4.1 | Passes | |
| SCAQMD Rule 1168 | Passes | |
| BAAQMD Reg 8 Rule 51 | Passes | |

Application Instructions

Preparation

Joint surfaces must be clean and free from frost and rag dry, preferably completely dry. Remove all dirt, laitence, loose materials and foreign matter. Remove all rust, scale and protective lacquers from metal surfaces. Non porous surfaces should be degreased using Fosroc Equipment Cleaner.

In all joints an Expandafoam or Hydrocell XL polyethylene foam backing should be used to prevent sealant contact with the back of the joint, and hence allow optimum performance.

In shallow joints self adhesive debonding tape can be used.

Priming

Good adhesion can be gained on concrete, timber, metals, ceramics, brickwork and most coating surfaces without the use of primers. On some porous surfaces such as GRC, adhesion will be improved by the use of a primer - refer Fosroc Technical Service for further advice.

Application

Cartridge: Cut the end off threaded stub on cartridge, screw on nozzle and cut nozzle to desired bead size at a 45° angle.

Extrude the sealant firmly into joint to ensure complete contact with joint faces. Smooth finish if necessary with a spatula wetted with a dilute detergent solution.

Cleaning

Clean tools immediately after use with Fosroc Equipment Cleaner.

Overpainting

The practice of overpainting sealants which experience a high degree of movement is discouraged as it can result in premature failure of the sealant.

However, Nitoseal MS100 may be overcoated with water-based elastomeric coatings such as Dekguard Elastic and exterior emulsion paints such as Dekguard W. Tests should be carried out to confirm compatability of sealant and proposed paint systems.

Nitoseal MS100 should be allowed to cure fully before the

application of the coating or paint. For best results the sealant should be allowed to weather prior to overcoating.

Estimating

Nitoseal MS100 is supplied in 380 ml cartridges and 600ml sausages.

To work out quantities (excluding wastage) use the following formula:

$$\frac{S}{W \times D} = \text{Lineal metres per pack}$$

S = Packaging size in millilitres
W = Sealant profile width in millimetres
D = Sealant profile depth in millimetres

Guide to sealant quantities

| Joint size in mm | Litre per metre run | Metre per 0.38 litre cartridge |
|------------------|---------------------|--------------------------------|
| 3 x 5 | 0.015 | 25.3 |
| 3 x 10 | 0.030 | 12.66 |
| 5 x 5 | 0.025 | 5.2 |
| 5 x 10 | 0.050 | 7.6 |
| 10 x 5 | 0.050 | 7.6 |
| 10 x 10 | 0.100 | 3.8 |
| 15 x 10 | 0.150 | 2.54 |
| 20 x 10 | 0.200 | 1.9 |
| 25 x 15 | 0.380 | 1.0 |

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

Design criteria

Movement Accommodation Factor (MAF)

The Movement Accommodation Factor is a figure quoted indicating the ability of a sealant to accommodate joint movement throughout the service life of that sealant, expressed as a percentage of the joint width at time of sealing.

To calculate the theoretical / minimum joint width knowing the expected maximum working movement of the joint:

$$W = \frac{M}{MAF/100} + M$$

W = Joint width
M = Expected maximum working movement of joint
MAF = Movement Accommodation Factor of that sealant

For further advice on joint design see BS 6093:2006+A1:2013

Nitoseal MS100 may be applied to joints between 5 and 35 mm wide. To minimise stresses imposed on the joint sealant, all moving joints should be designed to an optimum width to depth ratio of 2:1.

Fosroc® Nitoseal MS100

This ratio is subject to these overriding minimum sealant depths:

5 mm minimum sealant depth at any point.

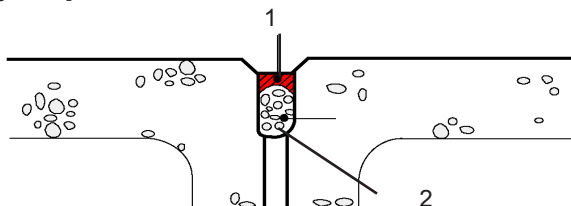
5 mm minimum bonding depth against metals, glass and other non-porous surfaces, providing that joint faces are in good condition.

8 mm minimum bonding depth against masonry or other porous surfaces, or any non-porous surfaces where joint faces are in poor condition.

Shear joints shall be a minimum joint width to depth ratio of 1:2 up to a maximum of 1:1. The total movement in shear should not exceed 80% of joint depth at time of sealing in these joints.

Sealants are now commonly used as weatherseals in place of flashings and scribes around window and door openings. These areas require greater attention to detail and standards of workmanship to perform successfully.

Example of sealed movement joint in external joint panels



1 Nitoseal MS100

2 Expandaf foam cord

Limitations

Nitoseal MS100 **must not** be used as follows:

- Where adhesion is required to polyethylene, polypropylene, polybutylene, polycarbonate and bitumen.
- Where it is subjected to permanent immersion in water.
- With structural glazing or floor joints.
- With pipes or in other applications where it may be subjected to hydrostatic or pneumatic pressures (other than wind pressure).
- Where continual exposure to aggressive solvents or chemicals will occur.
- Where timber or wood based products have been painted.
- Nitoseal MS100 is a combustible material. Do not seal around chimney or flues.
- Do not overpaint with oil based alkyd paint systems.
- Should not be considered a substitute for a good standard of joint preparation.
- Joint arrises should be primed where movement in excess of 25% is expected.

Storage

Cartridges: 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 high humidity, the shelf life may be significantly reduced.

Health and safety

No significant hazard. For additional information see appropriate Product Safety Data Sheet.

Fosroc and Nitoseal are trade marks of
Fosroc International Limited



Fosroc Limited

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

www.fosroc.com

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telephone:
+44 0 (1827) 262222

fax:
+44 0 (1827) 262444

email:
enquiryuk@fosroc.com



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