



Expoband Plus*

Flexible, expansion joint membrane

Uses

Expoband Plus is a butyl rubber membrane, which is designed to bridge over a movement joint, or crack, in a structure to prevent ingress of water at that point. Typical uses include

- Buried joints in car park decks, podiums, balconies, walkways and other elevated or trafficked areas
- Overstrapping joints in basements, subways, tunnels and substructures in general
- Added security to roof joints
- Internal and external overstrapping of joints in water retaining structures, culverts and reservoirs

Advantages

- **Extremely durable** - resistant to long term weathering and forms a tough, flexible, joint flashing.
- **Superior mechanical properties** - accommodates continuous, pronounced cyclic movement.
- **Versatile performance** - unaffected by climatic extremes & can be hot vulcanised to create long joints.

Description

Expoband Plus comprises a nominal 2mm thick, butyl rubber sheet laminate, with a fully vulcanised layer coloured black; and, for maximum adhesion efficiency, a thin unvulcanised layer coloured red.

Design criteria

Expoband Plus is manufactured in two standard widths of 190 and 250mm. The 190mm width is for sealing joints or cracks in structures where the adjacent concrete is sound, and where the joint is of an even width and well aligned.

The 250mm width should be used for buried joints in trafficked surfaces; and for sealing joints in bridge decks over which continuous surfacing of the asphalt pavement is acceptable. It is also the preferred width in situations where the membrane is to be permanently immersed.

The 250mm width should be used where porosity of the concrete substrate adjacent, or close to, the joint edges is of doubtful quality. It is also better suited to joints which are excessively wide or misaligned.

Joint lengths of greater than 20m require a hot vulcanised joint - separate details available upon request.

Properties

| | | |
|-------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form | : | Butyl rubber laminate Thickness - Nominal 2 mm Parent material - Black, vulcanised Adhesion face - Red, unvulcanised |
| Application temp | : | 5 to 50°C |
| Shore 'A' hardness | : | 65 at 25°C |
| Tensile strength | : | 9.1 N/mm ² |
| Elongation at break | : | 400 % minimum |
| Movement accommodation | : | When used in conjunction with Nitomortar FC, it will accommodate continuous cyclic movements which result in the debonded area being extended up to 100 % of the debonded width. |

Note : When Expoband Plus is used as a deck flashing on a highway bridge below 100 mm of asphalt, it can accommodate 10 mm of movement. For movements between 10 & 20 mm a neoprene pad must be installed on top of the deck flashing, suitably recessed to support the surfacing.

Below : Application of Expoband Plus



Expoband Plus*

Instructions for use

Equipment

Slow speed drill and mixing paddle attachment.
Adhesive spreader with 3mm serrations.
Electric drill and abrasive flapper (medium)
Expoband hot vulcanising equipment (optional).

Joint preparation

Expansion joints must be packed with a firm, consolidated filler, such as Hydrocell XL*† and, if necessary, joints may also be pre-sealed using an elastomeric sealant, such as Thioflex 600*, prior to laying of the membrane. Ensure that any materials used in this way are capable of withstanding the anticipated joint movement.

Where Expoband Plus is to be turned up parapets, or other vertical surfaces, a splay should be created using either Nitomortar S*† or Nitomortar HB*†, in accordance with good membrane practice.

Surface preparation

Concrete surfaces onto which the membrane is to be applied must be sound, smooth, dry and dust free. New concrete should be fully cured, with any residual traces of curing compounds being mechanically removed.

The substrate should be prepared to a width 50mm greater than that of the membrane selected. The prepared surface should be free from irregularities, with well defined arrises and no vertical misalignment across the joint.

Any traces of dust, dirt and laitence should be removed by grinding, or similar mechanical methods. Any spalling or honeycombing must be repaired using Nitomortar S or Nitomortar HB, and allowed to cure completely prior to application of the Expoband Plus system.

All traces of dampness must be removed from the substrate by drying gently with a gas torch or hot air blower. The substrate shall be considered dry enough for when dampness does not re-appear within 15 minutes.

Priming

Priming is not normally required.

Preparation of the membrane

This operation is vital to the final adhesion, and performance in use of the Expoband Plus system.

Measure and cut the length of Expoband Plus to suit the joint onto which it is to be applied. Lay the Expoband Plus red face upwards, on a clean surface. Lightly buff the red face using an abrasive flap wheel, fitted to a standard electric drill.

The membrane is ready when a matt finish is achieved. Care should be taken to avoid over-buffing the membrane and thus exposing the black surface, as this will compromise final performance. Brush away any residual traces of 'rubber dust' and clean using Fosroc Solvent 102*.

Mixing and application of the adhesive

The 'hardener' and 'base' components of the Nitomortar FC*† should be stirred thoroughly in order to disperse any settlement before mixing them together. The entire contents of the 'hardener' should be emptied into the 'base' container and the components mixed together, using the slow speed drill plus mixing paddle attachment, until a uniform grey colour and consistency is obtained. Under no circumstances should part packs be used, or part mixing be attempted.

Apply the adhesive onto the substrate using a spreader comb with 3mm serrations keeping the resulting serrations parallel to the run of the joint. The adhesive should be laid in minimum 75mm wide strips parallel to the run of the Expoband and starting from the outside edge. Lay the primed Expoband Plus into the adhesive and press firmly into place being careful to ensure complete and continuous contact. Finish along the edges with a small triangular fillet of adhesive, removing any excess.

The membrane should be applied *not more than* 20 minutes after mixing of the adhesive, to ensure that the adhesive bond is not disturbed prior to laying asphalt or other surfacing.

Jointing the membrane

Expoband Plus can be jointed by a process of hot vulcanisation. Details of the equipment required, and techniques to be employed are available by separate request.

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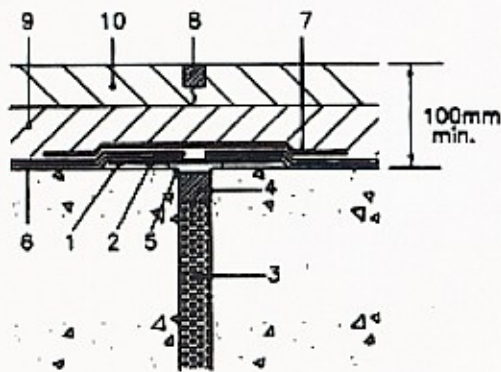
Expoband Plus*

Typical application details

Joints in trafficked surfaces - buried joints

Expoband Plus is recommended for sealing joints in car park decks or podiums, where hot rolled or mastic asphalt is to be applied over the joint. Expoband Plus will withstand the temperatures associated with asphaltting.

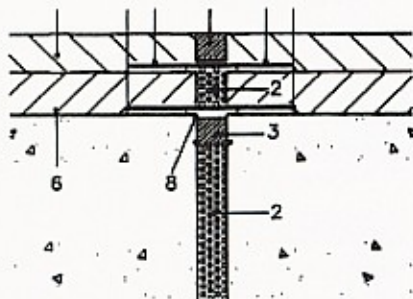
Expoband Plus can also be used for similar applications in walkways, balconies and link bridges. An example of a typical detail is given below :



- | | |
|------------------------|-----------------------------------|
| 1 Expoband Plus | 6 Famguard** deck membrane |
| 2 Nitomortar FC | 7 Famguard strap (loose) |
| 3 Hydrocell XL | 8 Nitoseal 777** |
| 4 Thioflex 600 | 9 Hot rolled asphalt base course |
| 5 Pencil round arrises | 10 Hot rolled asphalt wear course |

Roof joints

Expoband Plus is often used as added security on sensitive roofing joints, where a double barrier may be required.

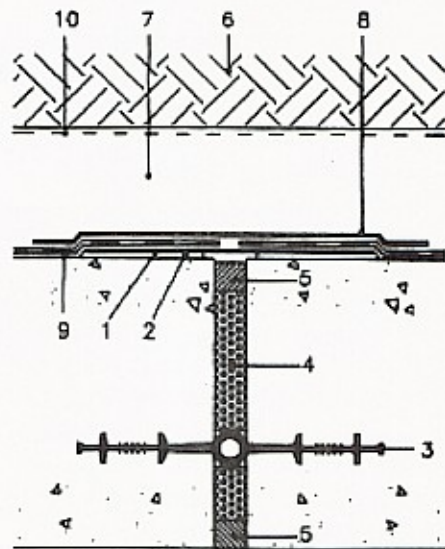


- | |
|---------------------------------------|
| 1 Expoband Plus |
| 2 Hydrocell XL |
| 3 Thioflex 600 |
| 4 Plastiseal |
| 5 Mastic asphalt wearing course |
| 6 Mastic asphalt waterproofing course |
| 7 Nitomortar FC |
| 8 Pencil round joint arrises |

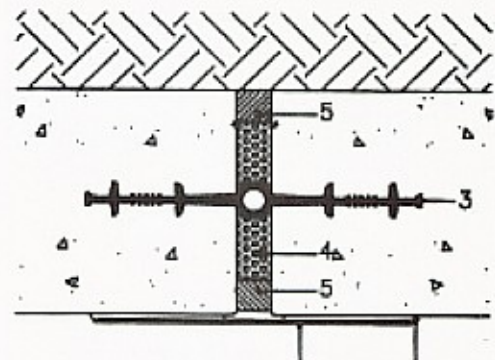
Water retaining and excluding structures

Expoband Plus is suitable for sealing joints in reservoir roofs, walls, basements and substructures subject to water penetration, as shown in the roof joint example below. It is also suited to the internal sealing of joints in water retaining structures (2nd. diagram).

Reservoir roof joint



Internal reservoir joint



- | |
|------------------------------------------------------|
| 1 Expoband Plus |
| 2 Nitomortar FC |
| 3 Supercast** PVC Waterstop |
| 4 Hydrocell XL |
| 5 Thioflex 600 |
| 6 Earth overlay |
| 7 Granular overburden |
| 8 Famflex strap, laid loose but spot bonded at edges |
| 9 Proofex GPX |
| 10 Geotextile |

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Estimating

Supply

| | | |
|--------------------|---|--------------------------------------|
| Expoband Plus | : | 20m roll x 190mm 20m roll x 250mm |
| Nitomortar FC | : | 1 and 4 ltr packs |
| Fosroc Solvent 102 | : | 5 litre cans |

Storage

Expoband Plus is an inert material, and thus has an indefinite shelf life.

Nitomortar FC can be stored for up to 12 months; if kept in its original, unopened containers, in warehouse conditions away from direct sunlight.

Limitations

Joint layouts incorporating Expoband Plus should be kept as simple as possible, such that site jointing is restricted to simple, butt joints. Avoid complex changes of angle or direction.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Precautions

Health and safety

Expoband Plus is hazard-free under normal use.

Nitomortar FC and Fosroc Solvent 102 should not come in contact with skin or eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye/face protection.

If working in confined areas, suitable respiratory protective equipment must be used. The use of barrier creams provides additional skin protection. Should accidental skin contact occur, remove immediately with a resin removing cream followed by soap and water. **Do not** use solvent. In case of contact with eye, rinse immediately with plenty of clean water and seek medical advice. If swallowed seek medical attention immediately
- do not induce vomiting.

Fire

Expoband Plus and Nitomortar FC are non-flammable.

Fosroc Solvent 102 is flammable. Keep away from sources of ignition. No smoking. In the event of fire extinguish with CO₂ or foam. Do not use a water jet.

Flash points

| | | |
|--------------------|---|------|
| Fosroc Solvent 102 | : | 33°C |
|--------------------|---|------|

For further information, refer to the product materials safety data sheet.

* Denotes the trademark of Fosroc International Limited

† See separate data sheet



PT. Fosroc Indonesia

Jl. Akasia II Blok A8 No. 1
Delta Silicon Industrial Park
Lippo Cikarang
Bekasi 17550
Indonesia

www.fosroc.com

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telephone:
+ 62 21 897 2103
+ 62 22 520 1308
+ 62 31 502 9142

fax:
+ 62 21 897 2107
+ 62 22 522 2713
+ 62 31 502 2711

email:
indonesia@fosroc.com

