Since the company’s beginnings over 80 years ago, Fosroc has developed into an International leader in delivering Constructive Solutions for projects across a broad range of market segments including transport, utilities, industrial and general buildings.

Fosroc’s commitment to customer service and technical support is second to none. We work closely with architects, structural engineers, contractors and owners to best understand their requirements. Together we can develop a bespoke solution for a construction project, adding value and becoming more than just a materials supplier, but a solution provider.

Fosroc has an extensive network of offices and manufacturing locations across Europe, the Middle East, India, North and South Asia, and is further represented in other regions across the world by distributor and licensee partners. Selecting from the full portfolio of Fosroc products and services and integrating expert technical support, world class customer service and innovation, Fosroc goes beyond just product selling to ensure that we partner with our customers to deliver complete constructive solutions.

Fosroc Proofex TPO/FPA (Flexible Polypropylene Alloy) membranes are produced by extrusion of granules resulting from the incorporation of uncured ethylene propylene rubber into a propylene matrix.

The completely integrated rubber component gives the Proofex products a combination of mechanical toughness and high flexibility that is achieved without the use of plasticisers.

The result is a product that is ideal for demanding applications in the construction industry where long-term waterproofing performance is required. In areas like roofing and lining, Proofex membranes now offer considerable cost-performance benefits when compared to conventional and other synthetic materials.

Weldability
Fosroc Proofex TPO membranes offer an excellent margin of safety in this respect, since the temperature range over which reliable seams can be produced is broader than for most other synthetic materials.

Weathering
Due to the intrinsic cleanliness of its chemical structure which does not include plasticisers, Fosroc Proofex TPO membranes are much less affected by dust and airborne pollutants than traditional membranes and can be welded after a long period of outdoor exposure.

Technical data
Full technical datasheets/method statements and CAD details are available to ensure that you are guided to the correct selection of products for your specific project. For specific assistance please contact your local Fosroc office.
EQUIPMENT

Leister Twinny T (or similar)
Experience has shown that most outstanding results are achieved with this equipment. However, as both top and bottom membrane layers are pressed together while being heated, this type of equipment is suitable for loose-laid systems only.

The recommended minimum width of the seam is:
For single weld: 50mm
For double weld: 2x10mm

Double weld equipment is used for liners, when pressure control is required. A 10 mm or 15 mm wide channel is left between the rollers. Welding is executed in one step.

Leister Varimat (or similar)
This type of equipment is specially developed for mechanically attached systems but is also suitable for all other types of roofing and lining systems, provided the slope does not exceed 10%. The upper layer is applied on the bottom layer while being heated, then rolled.

The recommended minimum width of the seam is 50mm. This is executed in one operation.

Automatic equipment characteristics
Temperature range: 20°C to 650°C
Speed: up to 12m/min
Pressure: up to 20kg

Leister Triac hand welding tool (or similar)
The recommended minimum width of the seam is 50mm.

Hand held equipment temperature range is up to 700°C.

APPLICATION

The conditions on site should be those for normal roof waterproofing works. The deck surface must be dry, clean and free from sharp projections such as nail heads, concrete nibs, etc.

The installation should not be carried out during wet weather (e.g., rain, fog, snow) or when temperature is below 5°C unless suitable precautions are taken in accordance with your local Fosroc Technical Dept.

The sheets must remain unwrapped in their original packaging until the time of installation. Unroll and mechanically secure the quantity of material intended to be welded within the same day.

The weld area should be dry and clean.

Preliminary trials are required to obtain the most appropriate settings (temperature, speed and pressure) as required under the specific weather conditions.

After turning the equipment on, allow sufficient time for it to warm up to the required temperature. Return temperature to ambient prior to switching off.

Hand welding
Jointing should be carried out whenever possible by automatic equipment rather than by hand held hot-air gun. The welding area should be dry and clean. If the membrane in the welding area is oxidised due to a prolonged outdoor exposure it should be cleaned with a solvent wipe.

Correctly executed seams are obtained by maintaining optimum relationship between temperature, speed and pressure. This combination is most consistently achieved by the use of automatic welding equipment. It is recommended that manual welding is limited to detail work or to projects with specific conditions which prohibit the use of automatic equipment.

Experience has shown that in most cases the best seam performance is obtained using the following settings:

- Nozzle width: 40mm
- Temperature: 350°C
- Speed: 2m/min
- Weight: standard

Other equipment tools
HAND WELD APPLICATION STEPS

STEP 1
Spot weld to ensure proper alignment of the sheets

STEP 2
Pre-weld at the inside of the lap

STEP 3
Edge termination weld

It is important to apply pressure with the roller at the same time heat is applied and maintain a 45° angle for both tools, keeping the FTPE roller flat at all times.

Lapping at “T” crossing
Unroll each Fosroc Proofex TPO sheet without tension, with the adequate minimum overlap and stagger the laps. Weld the sheets together as described, steel plates can be used to obtain good alignment and avoid wrinkles.

When T crossing occurs, ensure the edge of the seam is recessed in the middle to avoid possible capillary channels. This can be achieved using the 8mm brass roller.

ANCILLARY PRODUCTS

Proofex Internal and External Corners
Clean with a solvent wipe prior to welding to the appropriate Fosroc Proofex TPO membrane.

The total surface area should be welded.

Proofex Pipe Hats
Clean with a solvent wipe prior to welding to the appropriate Fosroc Proofex TPO membrane.

The total flange surface area should be welded.

Proofex Metal Strip
Proofex Metal Strip gives the most adequate and aesthetic mechanical termination, by welding the appropriate Proofex TPO membrane directly to the profile.

The profile is mechanically fixed, leaving approx. 5mm for expansion between each piece. A bead of Fosroc Nitoseal MS60 sealant gives extra protection.

A strip of Fosroc Proofex OGP membrane is then welded to obtain a watertight connection between the profiles.

The appropriate Proofex TPO skirting membrane is then welded to the Fosroc Metal Strip.

It is recommended to apply more heat on the membrane, as the TPO/FPA film is thinner (0.6mm).

ON SITE QUALITY CONTROL

The welding area is to be constantly monitored. Correct settings will show top and bottom membranes smoothly pressed, with a slight glazing and material softening appearing at the seam edge. Material softening and wrinkling, indicates over heating; this will cause scorching and carbonisation of the membrane. Absence of glazing indicates under-heating; this will cause low seam performance.

All seams should be probed on a daily basis. Probing will not be carried out before the membrane has cooled down to ambient temperature. If a seam portion opens up when probed, it must be repaired immediately.
SKIRTING WITH METAL STRIP TERMINATION

Apply a bead of Nitoseal MS60 sealant to the Proofex Metal Strip non TPO coated face and mechanically secure the Proofex Metal Strip @ 250mm centres.

Mechanically secure the main horizontal membrane and spot fix the vertical turn-up with Proofex OGP Adhesive. Weld the vertical membrane to the main horizontal membrane with a minimum 50mm weld extra over the fixings horizontally, and spot weld to the vertical turnup.

Stretch the vertical membrane and weld to the TPO coated face of the Proofex Metal Strip.

Finish off the top by sealing using Nitoseal MS60.

EXTERNAL CORNER

Apply hot air to the corner zone to allow easier stretching of the membrane into the corner position and ensure a 20mm minimum weld overlap at the corner and weld the flange to the horizontal.

Take a 100mm x 100mm piece of the membrane, trim a 20mm radius at the corner, heat and bend up then press into corner.

Weld the corner piece of membrane to both horizontal and vertical membrane working from the inside out.

Apply finger pressure at overlaps and complete the welding of the membrane.

INTERNAL CORNER

1. Use the extra membrane left over from the vertical face and fold as shown.

2. Remove approximately 20mm from the 3rd layer.

3. Weld the vertical membrane to the horizontal membrane.

4. Weld flat the triangular 3rd layer.

5. Weld the flat piece to the horizontal membrane.

6. Weld the remaining membrane to the horizontal membrane.
REPAIRS

If mechanical damage occurs to the membrane or if a seam is found defective after probing, repair should be undertaken by welding a patch of new material over the fault. The patch should be larger than the repair area by at least 50mm in any direction. Round off the corners.

Remove all dirt and dust and clean the repair area. Grinding with steel wool or sand paper can help in difficult situations where the membrane is very dirty.
!nfo
Apply a light solvent wipe and then weld the patch to the existing membrane after the solvent has evaporated. Probe the seam.

FULLY BONDED MEMBRANE

Apply Fosroc Proofex OFB adhesive by scraper or roller at coverage rate to suit substrate, typically approximately 0.2kg/m². Leave for 5 to 10 minutes.

Lightly moisten the Fosroc Proofex OFB membrane on the fleece side to improve the initial bond strength, then roll the membrane into the adhesive before skin formation, and press firmly, press again after 30 minutes if required.

A selvedge is provided along both edges of the membrane. The membrane layers are overlapped at the selvedge to achieve a minimum weld of 50mm. At roll ends, the membrane is butted together and a 100mm wide strip of Fosroc Proofex OGP welded on top of the Fosroc Proofex OFB membrane.

FOSROC TPO/FPA MEMBRANE RANGE

- Environment friendly
- Inert – no volatile components
- No toxic fumes when welded
- No plasticisers that could leach out
- Recyclable
- No separation geotextile required at EPS insulation interface
- Compatible with bitumen for roofoverlays

The Fosroc TPO/FPA membrane range is comprehensive, suitable for every type of roof application and are quality assured with independent test certification, this coupled with Fosroc’s excellent technical and customer service makes them the ideal choice for above-ground waterproofing applications.

Proofex OGP
1.2mm, 1.5mm, 1.8mm and 2mm thick standard membrane
Proofex ORG
1.2mm and 1.5mm thick reinforced membrane
Proofex OBF
1.2mm and 1.5mm thick fleece-backed membrane

Ancillary products
Proofex Metal Strip, Proofex Internal and External corners, Proofex OGP Adhesive, Proofex OBF Adhesive, Proofex Pipe hats and Proofex LLM fixings/boths/washers

FIXINGS, PLATES & SLEEVES

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Number of fixings calculated:
- Wind velocity
- Location - city/mountains etc
- Building height
- Building size
- Substrate
- Openings

WWW.FOSROC.COM
Fosroc offers a full range of construction chemical solutions, helping to protect structures throughout the world. Please refer to our brochures, which include:

Details of your local Fosroc office can be found at www.fosroc.com

Important Note
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation or information given by it.