Monarflex Vapour Control Layers

Anderson Monarflex | ico pal

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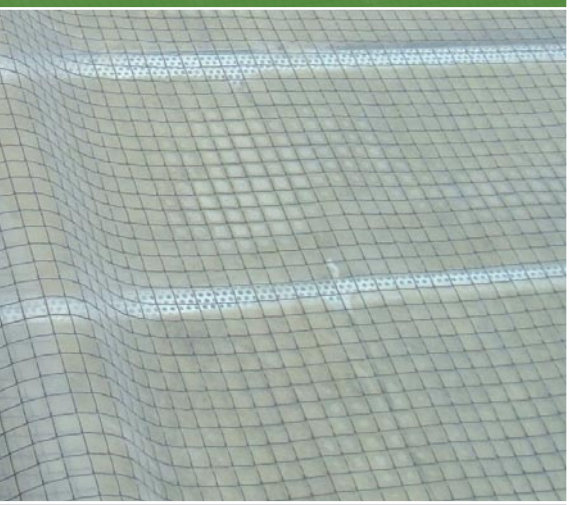
The simple and cost effective way to reduce air leakage, maximise thermal performance and prevent harmful condensation.



High performance VCL's designed for use within insulated metal sheeted and single ply membrane roofs.

Monarflex
Vapour Control Layers

A range of high performance vapour control layers specifically designed for use within insulated metal sheeted and single ply membrane roofs.

Why a Vapour Control Layer?

The problem

Many roofs are at risk of failure due to condensation forming within the roof structure.

Condensation occurs when the air temperature falls to the dewpoint and the air becomes saturated.

Sources of condensation include

- **Water enclosed in the building during construction**
- **Internal air**
- **External air entering between the roof cladding and the lining**

Whatever its source, condensation can lead to serious damage.

The Building Regulations require provision to prevent excessive condensation in roofs and roof voids (Regulation F, 1995).

Advice on meeting the Regulations is contained in the associated Approved Documents. Guidance is also contained in BS 5250:1989: 'Code of practice for the control of condensation in buildings' and in the BRE report 'Thermal insulation: avoiding risks'.

The risk of condensation can be reduced or avoided by

- **Removal or reduction of water vapour produced in the building**
- **Maintaining the construction above the dewpoint temperature**
- **Preventing water vapour reaching cold layers of the construction**

The solution

The most effective way to avoid condensation in roofs is to prevent as much of the water vapour as possible reaching the cold side of the thermal insulation.

This can be achieved by providing a Monarflex vapour control layer on the warm side of the thermal insulation while ensuring the vapour resistance of the construction reduces progressively from inside to outside. In some cases a breather membrane such as Monarflex SP400 may be required on the cold side of the insulation.

Why a Monarflex Vapour Control Layer?

Proven Performance

Icopal is one of Europe's leading manufacturers of reinforced polythene based membranes for the construction industry with over 30 years experience in the design, development and manufacture of

industry leading solutions that include products now universally accepted as the industry standard, proven over and over again in use.

Quality Assurance

All Monarflex products are manufactured under strict quality guidelines. As part of our commitment to the highest standard of quality and service, Icopal is registered to BS EN ISO.

Technical Support

To assist specifiers and contractors, Icopal offers FREE technical support and advice on all aspects of waterproofing and membrane specification and installation. Our service includes the provision of detailed CAD drawings, complete system specifications and a telephone advice line.

For further information call **0161 865 4444** or visit **www.icopal.co.uk**

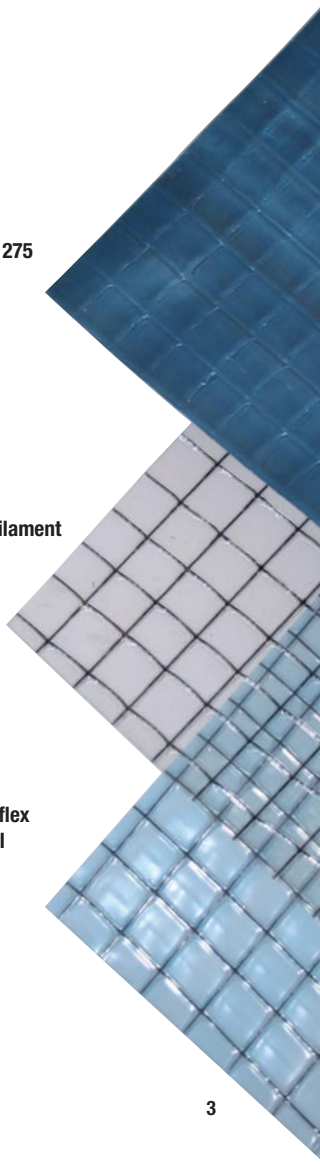
Features and Benefits of Monarflex VCL's

- **Monarflex multi-layer VCL's are manufactured from virgin polyethylene with built-in reinforcement grids of HDPE. Some also have a layer of aluminium foil for higher water vapour resistance performance.**
- **The reinforcement grids give great strength and tear resistance, producing membranes which are stable when laying and during the sheet or spacer fastening process.**
- **Monarflex VCL's are thermally stable from -40°C to +75°C. This ensures the membranes retain their integrity when being installed or used in extreme temperatures.**
- **Monarflex VCL's are suitable for most roof types and building uses from Monofilaments for buildings with low to medium humidity to Reflex 275 for buildings with high humidity such as textile plants, swimming pools, leisure centres and sports halls.**

Contents

Product Range

Design and Installation



Monarflex
Vapour Control Layers

Product Range

REFERENCES

Approved Document F to the Building Regulations 1995.

Approved Document C to the Building Regulations 1992.

BS 5250: 1989: 'Code of practice for control of condensation in buildings'.

BS 6229: 1982: 'Code of practice for flat roofs with continuously supported coverings'.

BS 6367: 1983: 'Code of practice for drainage of roofs and paved areas'.

BRE Report: 'Thermal insulation: avoiding risks'.

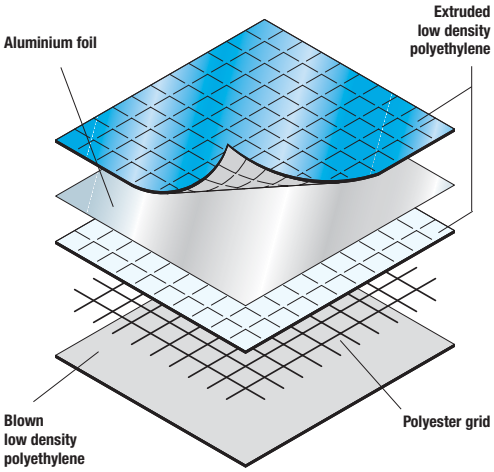
BS EN ISO 9002: 1994: 'Quality systems. Model for quality assurance in production, installation and servicing'.

Reflex 275

A five layer exceptionally high performance polyester reinforced polyethylene membrane with aluminium foil for use in buildings with high humidity including sports halls, swimming pools and leisure centres.

Product Data

Colour	Blue top surface, grey underside
Roll size / weight	2m x 25m / 17kg
Thickness	0.35mm
Tensile strength	8.0kN/m
Moisture vapour transmission	0.005gm^2-24hr
Water vapour resistance	43,000 MNsq^{-1}



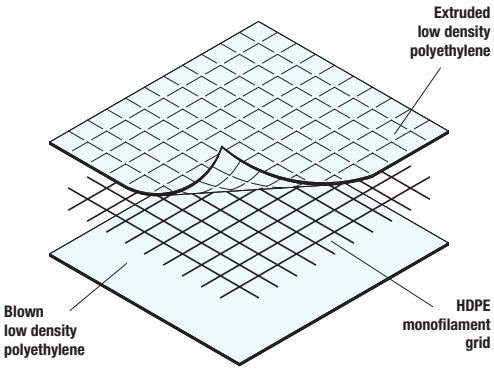
BBA BRITISH BOARD OF AGREMENT ASSESSMENT OF PRODUCTS FOR CONSTRUCTION CERTIFICATE No. 01/3810

Monofilament 250

A three layer high performance polyethylene reinforced membrane for use in buildings with low to medium humidity.

Product Data

Colour	Clear, black reinforcing grid
Roll size / weight	2m x 50m / 25.1kg 4m x 50m / 50.5kg
Thickness	0.25mm
Tensile strength	5.9kN/m
Moisture vapour transmission	0.4gm^2-24hr
Water vapour resistance	530 MNsq^{-1}

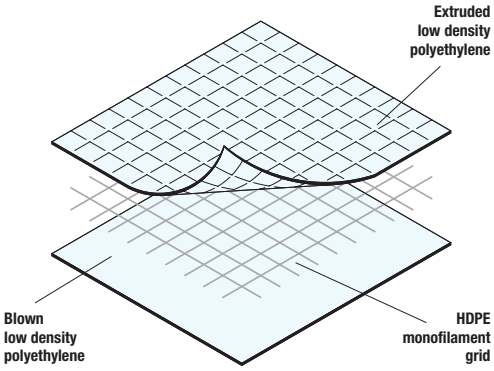


Monarflex Netofol

A three layer polyethylene reinforced membrane for use in buildings with low to medium humidity.

Product Data

Colour	Transparant blue, black reinforcing grid
Roll size / weight	2m x 50m / 20kg
Thickness	0.2mm
Tensile strength	3.5kN/m
Moisture vapour transmission	0.6gm^2-24hr
Water vapour resistance	350 MNsq^{-1}



Accessories

Monobond Tape

A high performance double sided tape for effective jointing of Vapour Control Layers.

Features and benefits

- Specially formulated for applications at temperatures down to -12ºC
- Makes impermeable waterproof seals at laps to ensure overall vapour resistance of the membrane
- Remains permanently flexible
- Quick and easy joining of side and end laps
- Adheres to most construction materials including concrete, steel and timber

Product Data

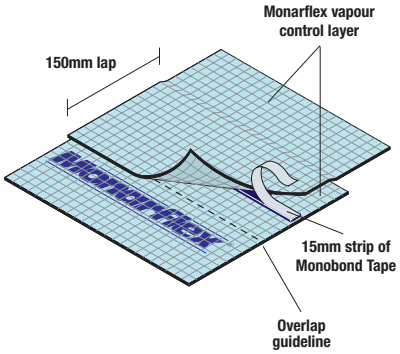
Colour	Blue
Thickness	2mm
Roll length/width	15mm x 24mm 30mm x 24mm 70mm x 15mm

Installation and Sealing

Monarflex vapour control layers must be laid with minimum 150mm laps and sealed with Monoband Tape. All penetrations, such as pipes and vents, must also be sealed with an appropriate sealant tape.

Refer to the separate Monobond Tape leaflet for preparation and installation details to other materials and structures.

All Monarflex vapour control layers have 150mm overlap guidelines printed on both edges throughout the rolls



Monarflex vapour control layers are resistant to tears and punctures. Any mechanical damage which does occur during installation should be repaired with a patch of the membrane fixed in place by a suitable sealing tape.

Once the roof is finished there is not usually any need for maintenance of the VCL's.

Site Work

Monarflex vapour control layers are delivered to site in individually shrink-wrapped packages, each clearly labelled with the company name, the product name and size of roll.

Packages should be stored on their sides on a clean, dry surface.

Monarflex vapour control layers contain no toxic additives, are non-hazardous to health and can be handled without protective clothing.

Coshh data sheets are available.

NBS SPECIFICATION CLAUSES

Reflex 275

H31 Metal Profiled/Flat Sheet Cladding/Covering

261A Vapour Control Membrane

- Manufacturer: Icopal Limited.
- Product reference: Monarflex Reflex 275. Vapour resistance (minimum): 43000 MNs/g.
- Continuity: No breaks, and with the minimum of joints.
  Penetrations and abutments: Seal to vapour control membrane with tape. Achieve full bond.
  Laps: Not less than 150 mm, seal with tape. Achieve full bond.
- Tape: Double sided sealant with vapour resistivity not less than the vapour control membrane.
  Size: 15mm x 2m Monobond LT double sided tape for all joints and penetrations.
- Repairs and punctures: Seal with lapped patch of vapour control membrane and continuous band of sealant tape along edges.

Monofilament 250

H31 Metal Profiled/ Flat Sheet Cladding/Covering

261A Vapour Control Membrane

- Manufacturer: Icopal Limited.
- Product reference: Monofilament 250. Vapour resistance (minimum): 530 MNs/g.
- Continuity: No breaks, and with the minimum of joints.
  Penetrations and abutments: Seal to vapour control membrane with tape. Achieve full bond.
  Laps: Not less than 150 mm, seal with tape. Achieve full bond.
- Tape: Double sided sealant with vapour resistivity not less than the vapour control membrane.
  Size: 15mm x 2m Monobond LT double sided tape for all joints and penetrations.
- Repairs and punctures: Seal with lapped patch of vapour control membrane and continuous band of sealant tape along edges.

Monarflex Netofol

H31 Metal Profiled/ Flat Sheet Cladding/Covering

261A Vapour Control Membrane

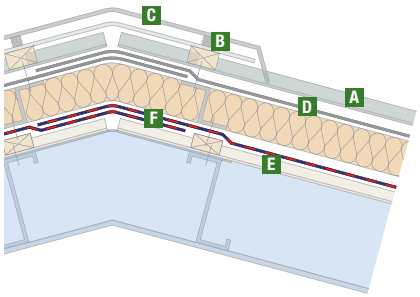
- Manufacturer: Icopal Limited.
- Product reference: Monarflex Netofol. Vapour resistance (minimum): 350 MNs/g.
- Continuity: No breaks, and with the minimum of joints.
  Penetrations and abutments: Seal to vapour control membrane with tape. Achieve full bond.
  Laps: Not less than 150 mm, seal with tape. Achieve full bond.
- Tape: Double sided sealant with vapour resistivity not less than the vapour control membrane.
  Size 15mm x 2m Monobond LT double sided tape for all joints and penetrations.
- Repairs and punctures: Seal with lapped patch of vapour control membrane and continuous band of sealant tape along edges.

Monarflex
Vapour Control Layers

Design and Installation

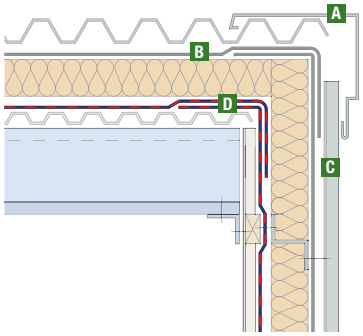
RIDGE

- **A** Metal profiled roof cladding
- **B** Mastic
- **C** Ridge flashing
- **D** Breather membrane
- **E** Liner tray
- **F** Carry vapour control layer over ridge, overlap by 150mm min. and seal with Monobond Tape



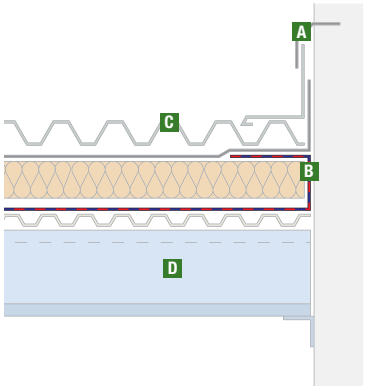
VERGE

- **A** Verge flashing
- **B** Breather membrane
- **C** Metal vertical cladding
- **D** Carry vapour control layer over ridge, overlap by 150mm min. and seal with Monobond Tape



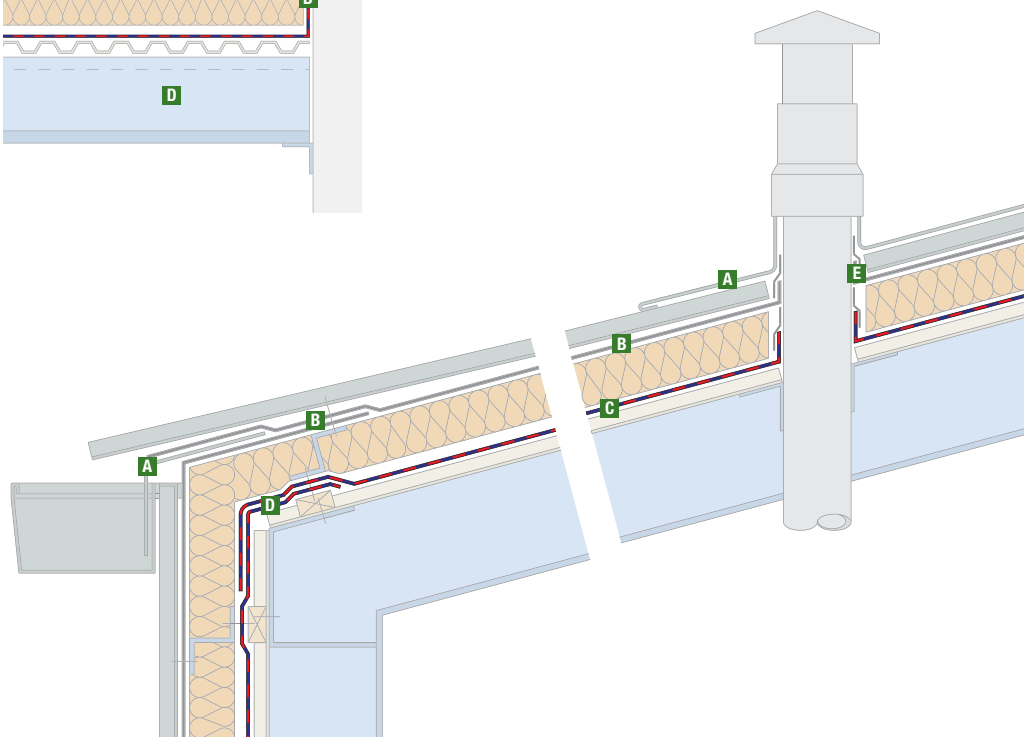
UPSTAND

- **A** Flashing
- **B** VCL sealed to upstand
- **C** Metal profiled roof cladding
- **D** Purlin



EAVES & PENETRATION

- **A** Metal flashing
- **B** Breather membrane
- **C** Vapour control layer
- **D** Carry vapour control layer over ridge, overlap by 150mm min. and seal with Monobond Tape
- **E** Seal breather membrane and VCL to penetration using Monobond Tape



Metal Roofing and Cladding

Monarflex vapour control layers should be fully supported by the metal lining on the warm side of the thermal insulation.

It is essential to form a vapour tight seal wherever the vapour control layer is penetrated, for example by pipes or ducts. This can be achieved by cutting a neat circular hole slightly smaller than the penetration, stretching the material over to produce a tight fit and sealing around the penetration with a suitable sealing tape.

All joints in the vapour control layer must be lapped (minimum 150 mm) and sealed with Monobond Tape. A tight seal can be achieved by compressing the lap with a wallpaper roller. All Monarflex vapour control layers have 150mm overlap guidelines printed on both edges throughout the rolls

At perimeters, the vapour control layer should be dressed up abutments, parapets, upstands, etc. and, ideally, be sealed to the vertical structure with an appropriate sealant tape such as Monobond Tape.

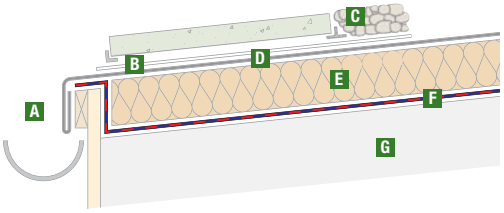
Single Ply Membrane Roofs

Monarflex vapour control layers should be fully supported by the deck on the warm side of the thermal insulation.

It is essential to form a vapour tight seal wherever the vapour control layer is penetrated, for example by pipes or ducts.

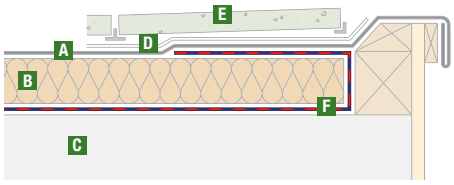
All joints in the vapour control layer must be lapped and sealed with Monobond Tape.

At perimeters, abutments, parapets and upstands the vapour control layer should ideally be sealed to the vertical structure and turned back onto the upper surface of the insulation board, where it will be lapped by the water proofing membrane.



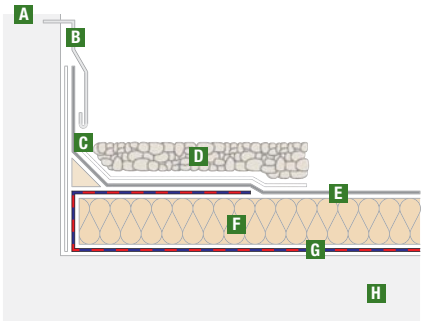
EAVES

- **A** Welted drip
- **B** Separation layer
- **C** Protection (optional)
- **D** Waterproofing layer
- **E** Insulation
- **F** Vapour control layer
- **G** Deck



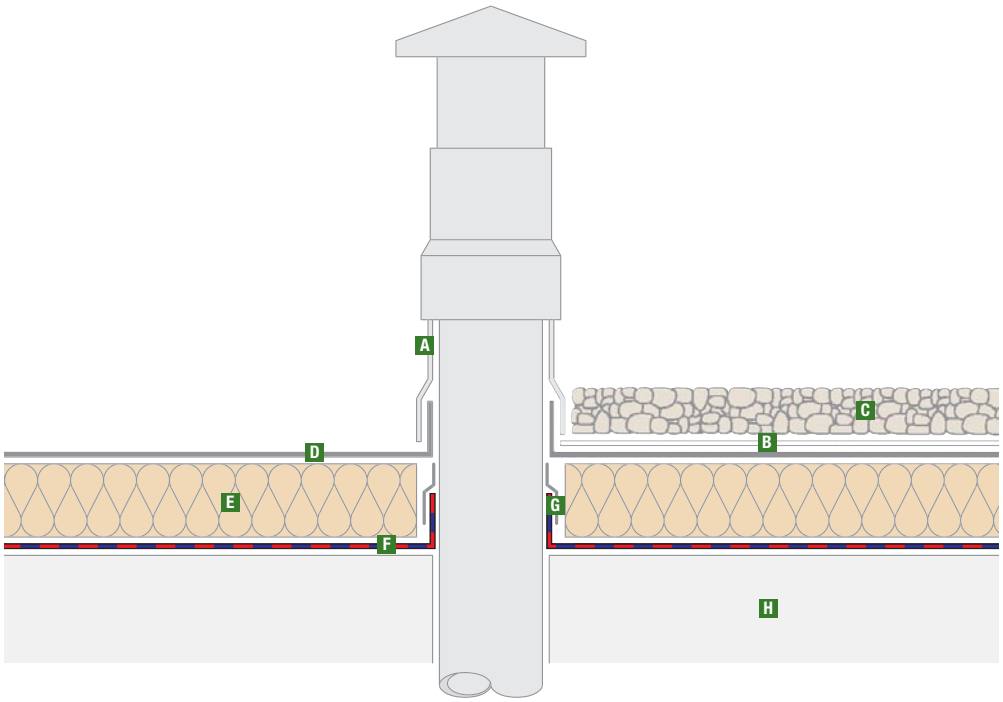
VERGE

- **A** Waterproofing layer
- **B** Insulation
- **C** Deck
- **D** Separation layer
- **E** Protection (optional)
- **F** Vapour control layer – turned back over insulation



UPSTAND

- **A** Upstand
- **B** Metal flashing
- **C** Separation layer
- **D** Protection (optional)
- **E** Waterproofing layer
- **F** Insulation
- **G** Vapour control layer
- **H** Deck



PENETRATION

- **A** Metal flashing
- **B** Separation layer
- **C** Protection (optional)
- **D** Waterproofing layer
- **E** Insulation
- **F** Vapour control layer
- **G** Seal breather membrane and VCL to penetration using Monobond Tape
- **H** Deck

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