

# POWERLON®

# VCL 170

## AIR AND VAPOUR CONTROL LAYER



Industrial Textiles & Plastics Ltd.  
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VCL 170 VMNL 2050T  
Air and Vapour Control Layer

Colour	Clear
Weight	210gsm
Tensile Strength	MD 465 N/50mm XD 415 N/50mm
Nail Tear Resistance	MD 310 N/50mm XD 415 N/50mm
Water Vapour Resistance	336 MNs/g
Water Vapour Transmission	Sd 47m

### DIMENSIONS

Roll size: 2.0 x 50m

Roll weight: 21.5kg approx.



**TECHNICAL HELPLINE**  
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### APPLICATION

For all roof and wall internal installations to prevent moisture within the building's warm air from reaching the insulation layer and forming interstitial condensation. Powerlon AVCL membranes contribute to both BS 9250 for the airtightness in 'a well-sealed ceiling' and BS 5250 aiding the control of condensation within a roof space.

Due to their inert chemical composition, Powerlon vapour control membranes are compatible with insulation and roofing materials.

Powerlon Vapour Control Layers are also suitable as a damp proof membrane. Because they are chemically inert, they are unaffected by mild acids and alkalis found in soils, do not rot or support mildew or other organic growth.

### DESIGN DETAILS

#### 1. CONTINUITY

Powerlon VCL Membranes should be continuous over the whole plan area of the structure. All laps should be sealed with the appropriate Powerbond sealing tape and the number of joints should be kept to a minimum by using the full width of the membrane

#### 2. ROOF TYPES

a. *Cold Roofs* Cold roofs with the VCL membrane draped between purlins with the insulation above are harder to seal at the laps. Consideration should be given to supporting the laps. In high-risk areas a rigid lining sheet is recommended throughout to support the VCL membrane.

b. *Warm Roofs* Sealing the Vapour Control Membrane in warm roofs is much easier as it is supported by the structural deck directly beneath. Sealing tape allows for any slight expansion or contraction movement in the decking.

c. *High Risk Roofs* The 'NFRS Profiled Sheet Metal Roofing & Cladding - A Guide to Good Practice' suggests that the water vapour resistance of a VCL membrane within high-risk roofs should be at least 500 MNs/g.

#### 3. SERVICE PENETRATIONS

Service penetrations should be kept to a minimum. Airtight seals are required around each point of entry. Particular attention is required to sealing all penetrations such as soil pipes, vent pipes and roof lights as well as the roof perimeter.

#### 4. TIMBER FRAME DESIGNS

Timber frame fixings should not puncture the barrier.

### INSTALLATION

Installation should be performed in conjunction with the recommendations in Design Details above.

#### 1. WORKING WITH THE MEMBRANE

- Always work with clean hands or wear gloves and use clean tools.
- The VCL membrane should be laid loose, flat and without wrinkles; ensure that the membrane is not creased or folded.

#### c) Weather Conditions

- Cold makes the VCL becomes less supple and installations should be avoided whenever site temperatures fall below 5° C.
- Installation in windy conditions is not recommended since the VCL becomes difficult to handle and is liable to flap in the wind.

d) The material can be cut using a sharp knife. Always overlap the cut edge.

e) All overlaps should ideally be 150mm, horizontally or vertically

#### 2. JOINING OF ROLLS AND PANELS

a) The number of joints should be kept to a minimum by using the full width of the membrane.

b) Joints should only be made where the membrane is supported (i.e. not where the join bridges unsupported areas).

c) The surfaces should be clean and dry, free of any dirt, condensation, grease, etc.

d) Rolls or panels may be joined by taping as follows:

- A continuous double row of Powerbond Butyl Tape spaced 75mm apart is recommended for overlap sealing (Fig. 1)
- Sealing the overlap with Powerbond Acrylic Tape (Fig. 2)
- For optimal water resistance and airtightness, using both methods is recommended.
- All joints should be firmly pressed together using a hand-held pressure roller to ensure that the tape has adhered properly to the membrane.
- Only apply tapes at an ambient temperature of 5° C.

Fig. 1  
Powerbond Butyl Tape Overlap Join Detail

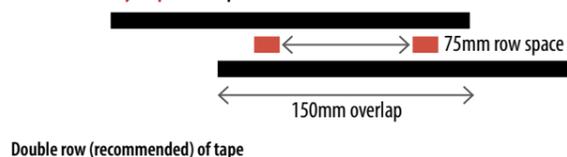


Fig. 2  
Powerbond Acrylic Tape Overlap Join Detail



#### 3. SEALING

- To maintain the integrity of the system, sealing should be performed as follows:
  - Service penetrations - Where services and pipework need to penetrate the membrane, use Powerbond Butyl or Acrylic Tape to create airtight seals around each point of entry.
  - Corners - To avoid cutting the membrane, it is important that

the membrane is folded into the corner and then reinforced by an additional protective layer of membrane.

- Absorbant surfaces (e.g. concrete, wood) - Absorbant surfaces must be primed with quick drying bituthene primer before sealing with Powerbond Sealing Tapes.

#### 4. ELONGATION

a) Whilst elongation of any vapour control layer should be avoided, Powerlon VCLs incorporate a reinforced grid to reduce the risk of elongation. VCLs should be laid loosely on the site in order to allow for any movement. They should not be pulled taught.

b) When covering the membrane, care should be taken to ensure that the membrane is not displaced, damaged or stretched.

#### 5. INSPECTION

Prior to covering, the VCL barrier should be thoroughly inspected to verify the integrity of the joining and sealing and ensure that no damage has occurred to the membrane during installation. Any damage should be repaired to ensure an airtight seal. A competent installation contractor should carry out inspection and repair of the VCL membrane.

#### 6. REPAIRS

Damaged areas must be repaired using patches of Powerlon VCL. The area must be clean, dry and free of dust and grease. The patch must not extend beyond 150mm of the damaged area. Fix the patch by using a continuous double row of Powerbond Butyl Tape, spaced 75mm apart.

#### 7. FURTHER INFORMATION

These installation instructions are based upon currently available good practice and information and only offered as a general guide.

Final determination of the suitability of any information or material for the use contemplated and the manner of use is the sole responsibility of the user and the user must assume all risk and liability in connection therewith.

Check the suitability and safety of the products for the use envisaged with all current and applicable national standards.

### STORAGE & HANDLING

Always store membrane rolls horizontally in cool, dry conditions, away from direct sunlight.

Handle the material with care and ensure that the membrane is not punctured or damaged.

NOTE: The shelf life of self-adhesive products is limited, usually between 6 months and 1 year (protected from direct sunlight and ambient temperatures above 30°C). Sealing tapes should be kept free of moisture and heat. Store away from sunlight in dry conditions at room temperature.

#### IMPORTANT

Protect Powerlon VCLs from UV exposure. Cover and finish the construction of the VCL installation within a maximum of 3 months (for Western Europe).

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