

# COMBI-SEAL

## Gas-Resistant Waterproof Membrane

### DESCRIPTION

COMBI-SEAL comprises of PREMCRETE MAXIPRUFE PLUS and PREMCRETE HYDROPRUFE 9000 cross laminated to produce a lightweight pre-applied membrane which will resist ground gases and water. The membrane utilises PREMCRETE APAN™ technology to produce an active membrane which will self-heal and effectively resist water pressure in the event of minor punctures or defects. The polyethylene component is reinforced with an aluminium core to restrict gas vapour transmission to less than 40ml/day/M<sup>2</sup> in accordance with BS 8485:2015. The active nature of the membrane secures the integrity of the membrane whilst the textured profile of the membrane ensures an integral bond to the structure to which it is applied. COMBI-SEAL fully complies with BS 8485:2015 for the protection against ground gases including carbon dioxide, radon and methane. It also complies with BS 8102:2009 for the protection of substructures against ground water.

### USES

COMBI-SEAL is used as a pre-applied gas-resistant waterproofing membrane for basement construction, lift pits, concrete retaining walls and other structures which extend below ground where resistance to both ground gas and water is required. COMBI-SEAL may also be used to protect ground floor slabs particularly where a good mechanical bond is required to the underside of the concrete slab or where a clay heave-board has been installed. COMBI-SEAL achieves 2 points when correctly installed in accordance with Table 7 of BS 8485:2015.

### ADVANTAGES

- Lightweight but robust membrane.
- High tear resistance.
- Self-healing APAN™ technology.
- Forms strong adhesive bond to freshly placed concrete.

Property	Test Method	Value
Weight	EN 1849-2	780 g/M <sup>2</sup>
Thickness (20 kPa)	EN 1849-2	3mm
Maximum Tensile MD	EN ISO 12311-1	805 N/5cm
Maximum Tensile CD	EN ISO 12311-2	1308 N/5cm
Elongation at break MD	EN ISO 12311-2	88%
Elongation at break CD	EN ISO 12311-2	80%
Tear Resistance MD (nail shank)	EN 12310-1	710 N
Tear Resistance CD (nail shank)	EN 12310-1	745 N
Water Tightness	EN 1928 B	PASS
Resistance to Impact	EN 12691-A	>350mm
Moisture/Vapour Transmission Rate	ISO 15106	<0.01g/M <sup>2</sup> /24Hr
Methane Permeability	ISO 15105-1	<15ml/Day/M <sup>2</sup>
Shear Resistance at Joint	EN 12317-1	325 N
Static Load Resistance	EN 12730-B	20 Kg

## COMPLIANCE

- The components of COMBI-SEAL are Agrément certified
- Complies with BS 8485:2015



1

## PROCEDURE

**Surface Preparation:** The substrate should be well compacted hardcore or blinded with lean-mix concrete with surface free from excessive undulation or sharp projections which may puncture the membrane. Irregularities in the surface should be repaired with a suitable PREMCRETE repair mortar. If the membrane is to be installed to concrete foundation piles, then the piles should be prepared removing all loose soil and ensuring that the concrete is relatively flat.

The surface should be prepared so that there are no voids which the membrane would have to span as this would render the active element of the membrane ineffective. The membrane must be fully encapsulated against a consistent surface for maximum performance.

**Application to Vertical Surfaces:** COMBI-SEAL should be pre-applied to the inside face of the shuttering to be subsequently filled with concrete. The sheets should be installed with the white active fleece in contact with the freshly placed concrete and aligned vertically ensuring that all lap joints face down away from the concrete pour. Lap joints should be sealed using the COMBI-SEAL TAPE or the selvedge strip should be used by folding back the white fleece before removing the release paper from the tape before positioning the adjacent sheet of membrane. The lap joint should be rolled with a seam roller before folding the fleece back into place, this will provide two-fold protection at the lap joint.

Should mechanical fixings be used to secure the membrane in place prior to pouring concrete then twin seal washer fixing should be fixed through the membrane selvedge prior to placing the adjacent sheet. This will ensure the integrity of the gas barrier remains intact. Once the concrete has been placed the shutter may be removed, and the COMBI-SEAL will remain adhered to the concrete. The membrane should be protected using PREMCRETE PROTECTION BOARD 600 prior to backfill to ensure the membrane remains un-punctured. COMBI-SEAL should not be installed above the final ground level.

**Application to Horizontal Surfaces:** COMBI-SEAL should be laid with the white fleece facing the installer and in direct contact with the concrete. Adjoining laps should be a minimum of 150mm and tapped using COMBI-SEAL TAPE or by making use of the selvedge (refer to above methodology) it is recommended to stagger the lap joints by 300mm to avoid 4 sheets lapping at one location.

The membrane may be fixed mechanically through the selvedge using PREMCRETE METAL WASHER FIXINGS. Typically, reinforcement spacer blocks should be placed along the length of the lap joint to ensure that the membrane is effectively loaded to prevent concrete displacement.

Surface penetrations and pipes should be sealed using HYDROPRUFE TOPHAT which is tapped to the underside of the COMBI-SEAL using HCR BUTYL TAPE, additionally a fillet of TWINSEAL COMPOUND should be applied around the circumference of the penetration to ensure the integrity of the joint. TWINSEAL COMPOUND may also be used to assist with the detailing of difficult junctions.

## ANCILLARY PRODUCTS

COMBI-SEAL TAPE 150mm x 30 M Roll

METAL WASHER FIXINGS box of 100.

HCR BUTYL TAPE 30mm x 30 M Roll

HYDROPRUFE DETAIL STRIP 150mm x 15 M

## PACKAGING

Pack Size: 2 x 25 M Roll

Roll Weight: 50 Kg.

Pallet Quantity: 12 Rolls.

## STORAGE

Store in cool, dry, frost free conditions. The membrane should be protected against UV.

## HEALTH & SAFETY

Please refer to separate material safety datasheet.

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