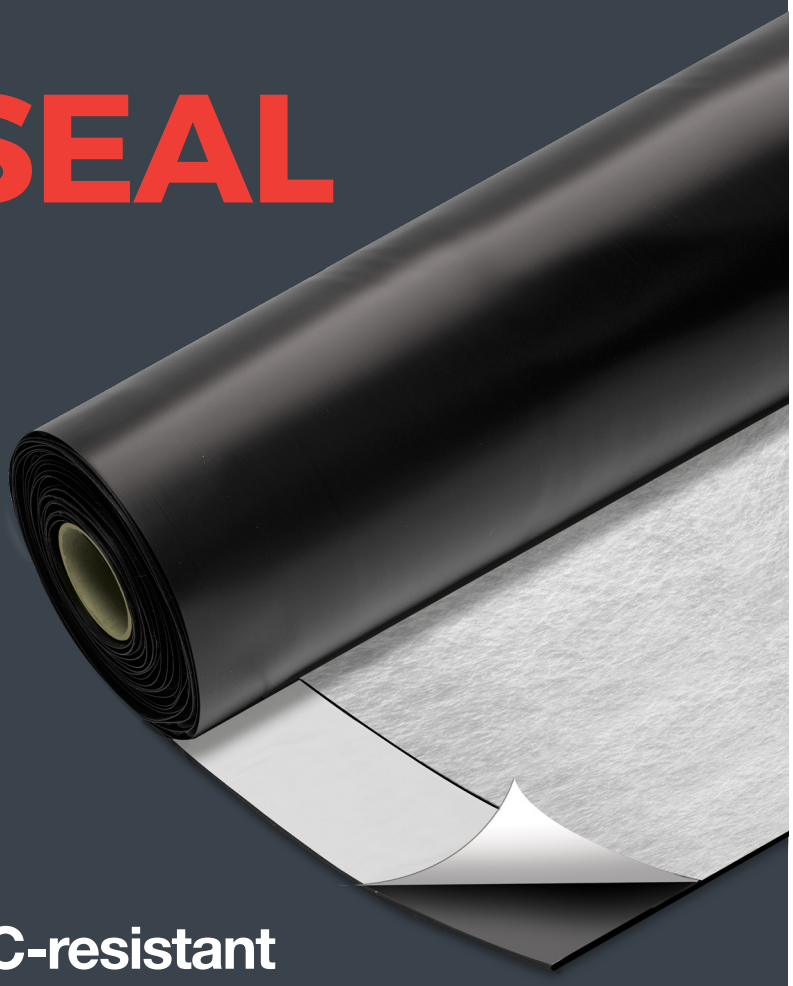
TECHNICAL DATA SHEET

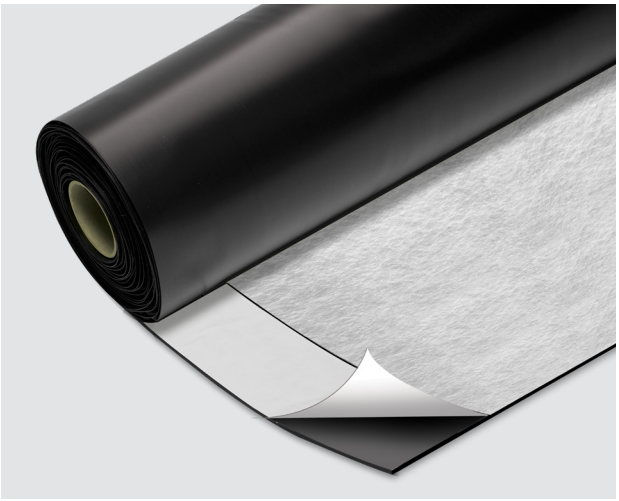
COMBISEAL PLUS



Self healing gas & VOC-resistant waterproof membrane

PREMCRETE

COMBISEAL PLUS





TYPE A
PRE APPLIED

WATER RESISTANT

GAS RESISTANT

RADON RESISTANT

VOC RESISTANT

BDA CERTIFIED

UK CONFORMITY

25 YEARS
PRODUCT WARRANTY

DESCRIPTION

COMBISEAL PLUS comprises of a high-density polyethylene membrane (HDPE) and an MS Polymer impregnated, non-woven geotextile, cross laminated to produce a durable, pre-applied membrane which will resist water, ground gases, Radon and hydrocarbons (VOCs).
The membrane utilises PREMCRETE APAN™ technology to effectively resist water pressure, gases and VOCs from within the ground. The composite membrane will restrict gas vapour transmission, including methane, to less than 40ml/day/m^2 in accordance with BS8485:2015+A1:2019.
COMBISEAL PLUS is a highly chemical resistant membrane which ensures that the integrity of the membrane is secure even in the presence of aggressive chemicals. The non-woven geotextile of the membrane ensures an integral bond to the cast concrete structure.

USES

COMBISEAL PLUS is designed for vertical application in basement construction and below ground areas. It is particularly suited to application onto piled walls where it can be mechanically fixed into the contours of the piles due to its self healing capability. Whilst COMBISEAL PLUS can be used for horizontal application, COMBISEAL HD is a more appropriate membrane for such use, and should be a primary consideration.
COMBISEAL PLUS achieves two gas protection score points when correctly installed, in accordance with Table 7 of BS8485:2015+A1:2019.

ADVANTAGES

- Robust membrane, yet lightweight and flexible, which provides ease of handling on site.
- Unique APAN™ technology forms a fully bonded and strong adhesion to concrete.
- Self-healing technology enabling the membrane to be applied and fixed into the contours of a piled wall, therefore eliminating the need to face up the piles.

COMBISEAL PLUS

TECHNICAL & PERFORMANCE PROPERTIES

Property	Test Method	Value
Mass	EN 1849-1	0.95 Kg/m^2
Thickness (20 kPa)	EN 1849-1	3mm (0.5mm HDPE, 2.5mm Geotextile)
Straightness	EN 1848-2	Pass
Maximum Tensile MD	EN ISO 12311-1	930 N/50mm
Maximum Tensile CD	EN ISO 12311-1	1456 N/50mm
Elongation at break MD	EN ISO 12311-2	83%
Elongation at break CD	EN ISO 12311-2	79%
Tear Resistance MD (nail shank)	EN 12310-1	1010 N
Tear Resistance CD (nail shank)	EN 12310-1	1030 N
Shear Resistance at Joint	EN 12317-2	402 N
Resistance to Impact	EN 12691 Method B	450mm - no leakage at 450mm drop height
Static Loading	EN 12730 Method B	20kg
Water Tightness	EN 1928 Method A	Pass
Moisture/Vapour Transmission Rate	ISO 15106-3	0.134g/m^2 / 24Hr
Visible Defects	EN 1850-2	No Visible Defects
Methane Permeability	ISO 15105-1	23ml/m^2 / 24Hr
Carbon Dioxide Permeability	ISO 15105-1	25ml/m^2 / 24Hr
VOC Permeability	ISO 15105-2	Pass
Radon Permeability	ISO /TS11665-13 Method A	70.6Ms/m

Further independent test certificates are available upon request relating to VOC permeability.

COMBISEAL PLUS

INSTALLATION PROCEDURE

Surface Preparation

When installing the membrane to a vertical piled wall substrate, the piles should be suitably prepared, removing all loose soil and ensuring that the face of the piles is free from any sharp protrusions or other deleterious material. Significant voids in the surface of the concrete should be filled to provide an even support for the membrane.
The membrane should be installed against a continuous, compacted and consistent surface to ensure it is fully supported and effectively sandwiched between the piled wall and the concrete poured in front of it. Given that piled walls are typically contoured, undulations are acceptable provided they are regular and an overall consistent vertical plane is maintained as far as practicable.
Although horizontal application is more suited to PREMCRETE COMBISEAL HD membrane, if COMBISEAL PLUS is selected, blinded with lean-mix concrete or prepared with well compacted hardcore and must be free from excessive undulation or sharp projections which may puncture the membrane.
Irregularities within concrete substrates should be repaired with a suitable PREMCRETE repair mortar.

Application to vertical surfaces

COMBISEAL PLUS should be installed to the inside face of the shuttering and/or against the piled wall, prior to pouring the concrete wall. The membrane should be installed with the white fleece in contact with the freshly placed concrete. Installation should ideally proceed from the top downwards with the short side of the membrane roll level with the top of the piled wall. The roll can then be lowered to the base and then cut to the height of the piled wall. The membrane should be mechanically fixed across the top of the piled wall at 500mm centres through the PREMCRETE TERMINATION STRIP and overcoated with TWINSEAL COMPOUND GR. Further fixings should then be applied to secure the membrane into the extremities of the piled wall surface ensuring no voids are present behind the membrane. All fixings should be at 500mm centres within the inner cusps of the piles. Lap joints (typically vertical) should be sealed using the COMBISEAL TAPE or the selvedge tape on the membrane.
Lap joints should be sealed using the COMBISEAL TAPE or the selvedge tape and should be rolled with a suitable seam roller. The membrane should be fixed mechanically through the pre-applied tape or other taped zones using PREMCRETE METAL WASHER FIXINGS at 500mm centres. Additional fixings outside of the taped zone are permitted, however over-sealing with TWINSEAL COMPOUND GR is required to ensure the integrity of the gas barrier remains intact. Shot-fired metal fixings are suitable for application to secant, contiguous or sheet steel piled walls. If fixing the membrane into a high density void former, use PREMCRETE RING SHANK FIXINGS.
Once the concrete has been placed and the shuttering removed, the COMBISEAL PLUS will remain adhered to the concrete. In scenarios where the membrane is being back filled, ie: against a double-sided retaining wall, the membrane should be protected using PREMCRETE PROTECTION BOARD 600 or HYDROFLOW HM8 prior to backfill to provide adequate protection. COMBISEAL PLUS should not be installed above the finished ground level.

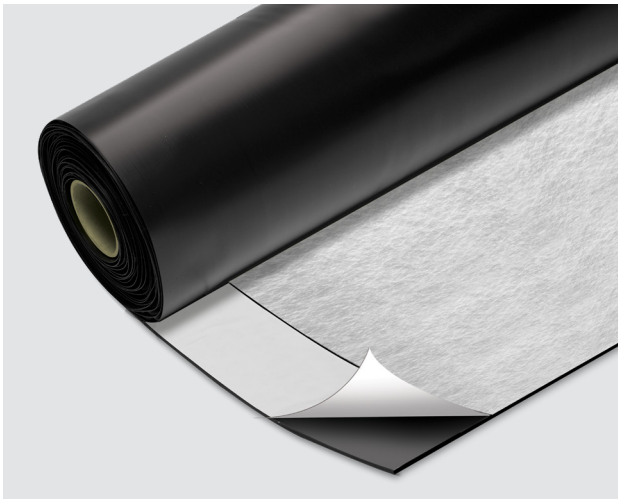
Application to horizontal surfaces

Please note, COMBISEAL HD is recommended for horizontal application, however if COMBISEAL PLUS is selected, this should be laid with the white fleece facing upwards to ensure direct contact with the concrete slab when poured. Adjoining sheets should be lapped by a minimum of 150mm and sealed using COMBISEAL TAPE or by making use of the selvedge tape (refer to above methodology). It is recommended to stagger the lap joints by 300mm to avoid 4 sheets lapping at one location. The membrane should be fixed mechanically through the pre-applied tape or other taped zones using PREMCRETE METAL WASHER FIXINGS at 500mm centres.
Typically, reinforcement spacer blocks should be placed along the length of the lap joint to ensure that the membrane is effectively loaded to prevent displacement during placement of the concrete and the potential for movement due to weather conditions. Service penetrations and pipes should either be sealed using a HYDROPRUFE TOPHAT which is sealed to the underside of the COMBISEAL HD using HCR BUTYL TAPE or with TWINSEAL COMPOUND GR applied around the circumference of the penetration, with the COMBISEAL HD tightly cut to the anulus of the penetration. TWINSEAL COMPOUND GR may also be used to assist with the detailing of difficult junctions.
TWINSEAL COMPOUND GR should be applied around the circumference of the penetration to ensure the integrity of the joint. TWINSEAL COMPOUND GR may also be used to assist with the detailing of difficult junctions.

COMBISEAL PLUS

PACKAGING & COVERAGE

Roll size
1.9m x 26.4m
Weight
30kg.
Pallet Quantity
20 rolls



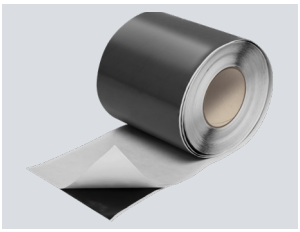
STORAGE & SHELF LIFE

Store in cool, dry and frost-free conditions.

HEALTH & SAFETY

See separate Material Safety Data Sheet.

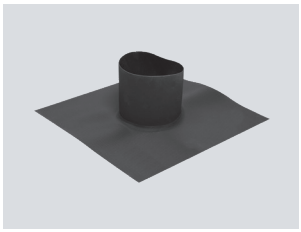
ANCILLARY PRODUCTS



COMBISEAL TAPE
150mm x 45m



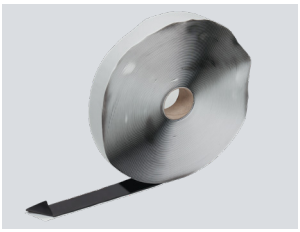
METAL WASHER FIXINGS
box of 100



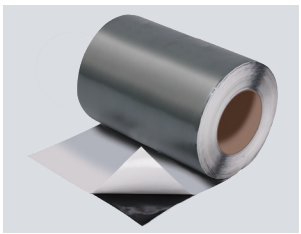
TOP HAT



PROTECTION BOARD
2400x1200mm



HCR BUTYL TAPE
30mm x 30m



HYDROPRUFE DETAIL STRIP
200mm x 15m



TWINSEAL COMPOUND GR
2-part gas resistant waterproof sealing compound



HYDROPRUFE LG
should not be applied at temperatures of 5ºc or less.

BDA Agrément
BAB-20-144-P-A-UK

44 Macadam Way | West Portway | Andover | Hampshire | SP10 3XW
www.premcrete.com | 02380 276166 | sales@premcrete.com

PREMCRETE