PRODUCT DATA SHEET

Pro Titan VOC

GROUND GAS PROTECTION



Description

Pro Titan VOC gas and hydrocarbon barrier is a multi-layer, polyethylene membrane.

Pro Titan VOC is a loose laid multi-layer polyethylene membrane designed specifically as a Hydrocarbon, methane, carbon dioxide, radon, ground gas, VOC, air and moisture protection system.

PRO Titan VOC complies with the latest codes of practice as published by BRE, CIRIA (748) and BS 8485:2015+A1:2019. Pro Titan VOC is suitable for use as ground gas/hydrocarbon protection for NHBC Green, Amber 1, Amber 2 and Red Site Characterisations.

Pro Titan VOC is used as a loose laid membrane for the gas/VOC protection of ground level structures.

Features

- Exceptional chemical resistance
- Tough, durable design
- Conforms with latest codes of practice as published by BRE, CIRIA and BSI
- High resistance to ground gases
- Can be a fully welded system
- Suitable for new build and refurbishment projects

Specification

- BS 8485:2015+A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings
- NBS Specification J40 Flexible waterproofing/damp proofing membrane including gas/hydrocarbon protection
- NBS Specification J40/145 Loose laid weldable polyethylene gas retardant damp proofing

Product Details

DMS 403

Storage

- Rolls of Pro Titan VOC should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.
- Always store and transport in a secure position.

Packaging/Handling

- Roll weights can be more than 20kg and appropriate care and equipment is required for unloading and handling.

Associated Products

- Pro Titan External Tape
- Detailing Strip

Technical Drawings

www.deltamembranes.com/technical-categories/technical-drawings

Technical Data

Physical Properties

Characteristics	Test Method	Pro Titan VOC
Thickness	EN 1849-2	0.5mm
Width	EN 1849-2	2m
Length	EN 1849-2	50m
Weight	EN 1849-2	500g/m²

Hydraulic Press

Characteristics	Test Method	Pro Titan VOC
Water Vapour Transmission Rate	EN 1931	0.11-0.18 g/m²/day
Water Tightness (60 kPa)	EN 1928	PASS
Water Tightness (196 kPa - 20 m Water Head (Basement Application)	EN 1928	PASS

Mechanical Properties

Characteristics	Test Method	Pro Titan VOC
Resistance to Static Load	EN 12730-B	>20kg
Puncture Resistance	EN 12236	>2.0kN
Tensile Strength (MD)	EN 12311-1	>550N/50mm
Tensile Strength (CMD)	EN 12311-1	>400N/50mm
Tensile Elongation (MD/(CMD)	EN 12310-1	>550%
Tear Resistance (MD/CMD)	EN 12310-1	>300N
Resistance to Impact	EN 12691-B	650mm
Reaction to Fire	EN 13501-1	E Class
Resistance to Artificial Ageing	EN 1296/EN 1928	PASS
Resistance to Chemicals	EN 1296/EN 1928	PASS

Compliance and Certification

Characteristics
CE Mark - EN 13967:2012
NHBC Standards Compliant
BS 8485:2015+A1:2019 Compliant
CIRIA C748 Compliant

Vapour Permeability 100% Concentration

Characteristics	Test Method	Pro Titan VOC
Transmission Rate of Benzene	EN ISO 15105-2	<3.6mg/m²/day
Transmission Rate of Toluene	EN ISO 15105-2	<13.8mg/m²/day
Transmission Rate of Ethyl Benzene	EN ISO 15105-2	<2.7mg/m²/day
Transmission Rate of Xylenes (M,P,O)	EN ISO 15105-2	<7.7mg/m²/day
Transmission Rate of Hexane	EN ISO 15105-2	<0.6mg/m²/day
Transmission Rate of Vinyl Chloride	EN ISO 15105-2	<0.05mg/m²/day
Transmission Rate of Trichloroethene (TCE)	EN ISO 15105-2	<54.7mg/m²/day
Transmission Rate of Tetrachloroethene (PCE)	EN ISO 15105-2	<26.2mg/m²/day
Transmission Rate of Naphthalene	EN ISO 15105-2	<0.0006mg/m²/day
Transmission Rate of CIS-1,2-Dichloroethylene	EN ISO 15105-2	<1.1mg/m²/day

Gas Permeability

Characteristics	Test Method	Pro Titan VOC
Methane Permeability	EN ISO 15105-1	0.13ml/m²/day/atm
Methane Permeability (Jointed)	EN ISO 15105-1	1.00ml/m²/day/atm
Carbon Dioxide Permeability	EN ISO 15105-1	3.01ml/m²/day/atm
Vinyl Chloride Gas Permeability	EN ISO 15105-1	0.04ml/m²/day/atm
Radon Permeability	K124/02/195	1.0x10¹² m²/S

Durability and Chemical Resistance		
Characteristics	Test Method	Pro Titan VOC
Chemical Resistance - Sulphuric ACID (10% Solution of Sulphuric Acid (H_2SO_4)) 50° For 56 Days	EN 14414-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Chemical Resistance - BASIC (Calcium Hydroxide Saturated Suspension) 50° For 56 Days	EN 14414-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Chemical Resistance - SOLVENTS (35% Diesel, 35% Paraffin, 30% Oil Hd30 (Vol)) 50° For 56 Days	EN 14414-C	TENSILE STRENGTH RETAINED >80% RESULT - PASS
Chemical Resistance - SYNTHETIC LEACHATE (Mixture of 14 Acids, Chlorides, Sulphates & Phosphates) 50° For 56 Days	EN 14414-D	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Resistance to Leaching - HOT WATER (Deionised Water) 50° For 56 Days	EN 14415-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Resistance to Leaching - AQUEOUS ALKALINE (Saturated Calcium Hydroxide) 50° For 56 Days	EN 14415-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Resistance to Leaching - ORGANIC ALCOHOL (30% Methanol, 30% Isopropanol, 40% Glycol) 50° For 56 Days	EN 14415-C	TENSILE STRENGTH RETAINED 100% RESULT - PASS
Chemical Resistance - BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 95% (MD), 102% (CMD) RESULT - PASS
Chemical Resistance - TOLUENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 94% (MD), 91% (CMD) RESULT - PASS
Chemical Resistance - ETHYL BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 97% (CMD) RESULT - PASS
Chemical Resistance - XYLENES - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 91% (MD), 106% (CMD) RESULT - PASS
Chemical Resistance - TCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 93% (CMD) RESULT - PASS
Chemical Resistance - PCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 93% (MD), 93% (CMD) RESULT - PASS
Chemical Resistance - NAPTHALENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 101% (MD), 93% (CMD) RESULT - PASS
Chemical Resistance - HEXANE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 104% (CMD) RESULT - PASS

Installation

It is essential that ground gas protection systems are installed correctly, meeting all applicable building standards and regulations. Installation of ground gas protection systems should be carried out by technicians who hold a valid NVQ Qualification in ground gas installation. All ground gas protection systems should be verified by an independent verification company and not the membrane manufacturer, installer or client. All joints should be heat welded where practical and possible.

Other Information

All data and information contained in these Product/Technical Data Sheets is up-to-date and correct as at the date of issue. The information given is suggested as guidance and should only be used for evaluating your specific application. Delta Membrane Systems Limited cannot control or anticipate the conditions under which this product may be used, each user should review the information in specific context of the planned use. The information contained in these Product/Technical Data Sheets should not be considered a warranty, expressed, or implied, including but not limited to a warranty of merchantability or fitness for a particular purpose. In no event shall Delta Membrane Systems Limited be liable for any incidental or consequential damages resulting from the use, misuse, or inability to use the product. This exclusion applies regardless of whether such damages are sought based on breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory. When in doubt, contact Delta's Technical Team on 01992 523 523.