

## KEYTEC TITAN BOND

Keytec GP-TITAN-BOND- Gas and Hydrocarbon Barrier is a multi-layer, polyethylene membrane with an bonded textile for pre-applied applications; specifically designed and manufactured to perform as a **Methane, Carbon Dioxide, Radon, Ground Gas, VOC, Air & Moisture, and Hydrocarbon** protection system.

## Product: GP TITAN-BOND

Keytec GP-TITAN-BOND complies with the latest codes of practice as published by BRE, CIRIA (C748) and BSI (BS 8485:2015 and BS8102:2009). Suitable for use as Ground Gas/Hydrocarbon protection for NHBC GREEN, AMBER 1, AMBER 2 and RED site.

KEYTEC GP-TITAN-BOND – GROUND GAS and HYDROCARBON BARRIER			
Characteristic	Test Method	Unit	Keytec GP-TITAN-BOND
<b>Physical Properties</b>			
Thickness	EN 1849-2	mm	1.5
Width	EN 1849-2	M	1.9
Length	EN 1849-2	M	25
Weight	EN 1849-2	g/m <sup>2</sup>	750
<b>Hydraulic Properties</b>			
Water Vapour Transmission Rate	EN 1931	g/m <sup>2</sup> /day	0.14
Water tightness (60kPa)	EN 1928	-	PASS
Water tightness	EN 1928	-	PASS
<b>Mechanical Properties</b>			
Resistance to Static Load	EN 12730	Kg	>20
Tensile Strength (MD)	EN 12311 - 1	N/50mm	>550
Tensile Strength (CMD)	EN 12311 - 1	N/50mm	>400
Tear Resistance (MD)	EN 12310 - 1	N	>300
Tear Resistance (CMD)	EN 12310 - 1	N	>300
Resistance to Impact	EN 12691 - B	mm	1650
Reaction to Fire	EN ISO 11925-2	Class	E
Concrete Peel Adhesion	ASTM D903 (mod)	kN/m	>3.0
Resistance to Artificial Ageing	EN 1296	-	PASS
Resistance to Chemicals	EN 1847	-	PASS
<b>Vapour Permeability – 100% concentration</b>			
Transmission rate of Benzene	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	2250
Transmission rate of Toluene	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	2370
Transmission rate of Ethyl Benzene	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	400
Transmission rate of Xylene (m,p,o)	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	690
Transmission of Hexane	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	95.25
Transmission of Vinyl Chloride	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	36.44
Transmission rate of Trichloroethene (TCE)	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	1.44
Transmission rate of Tetrachloroethene (PCE)	EN ISO 15105 - 2	mg/m <sup>2</sup> /day	1.59
<b>Gas Permeability</b>			
Methane Permeability	EN ISO 15105 - 1	ml/m <sup>2</sup> /day/atm	0.13
Methane Permeability (Welded Joint)	EN ISO 15105 - 1	ml/m <sup>2</sup> /day/atm	1.00
Carbon Dioxide Permeability	EN ISO 15105 - 1	ml/m <sup>2</sup> /day/atm	3.01
Transmission rate of Vinyl Chloride Gas	EN ISO 15105 - 1	ml/m <sup>2</sup> /day/atm	0.04
Radon Permeability	SP Method 3873	m <sup>2</sup> /s	3.0 x 10 <sup>-12</sup>
<b>Compliance and Certification</b>			
C E Mark – EN139679			
NHBC Standards Compliant			
BS 8485:2015 Compliant [METHANE AND CARBON DIOXIDE Barrier] and CIRIA C748 Compliant [VOC BARRIER]			
BS 8102:2009 Compliant [TYPE A Waterproofing Barrier]			

Durability and Chemical Resistance			
Chemical Resistance – SULFURIC ACID (10% solution of Sulfuric Acid (H2SO4)) 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% Parafin, 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 and phosphate) 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

\*Values are Typical, with the exception of Thickness, which is Nominal. Typical indicates the mean value derived from the samples taken for any one test as defined in the BS EN ISO standard – usually the mean of five samples. Nominal is a guide value.

(OTHER ROLL SIZES ARE AVAILABLE ON REQUEST)

### **DESCRIPTION**

Keytec **GP-TITAN-BOND** is a pre-applied waterproofing membrane comprised of GP-TITAN and a specialist bonded geotextile to provide a bonding layer for poured concrete specifically for waterproofing applications (TYPE A BARRIER). The product is available in roll format, 1.0 x 20m and as detailing strip at 0.3m x 20m (other dimensions available on request) in black and white colour.

Keytec **GP-TITAN-BOND** Hydrocarbon Barrier offers a safe solution for the protection of buildings and occupiers against all levels of hydrocarbons, methane, carbon dioxide and radon ingress. Typically these are sites previously used as petrol stations, coalfields, landfill sites, contaminated industrial sites, Fracking sites and heavily contaminated sites. The membrane also acts as a damp-proof membrane. **GP-TITAN-BOND** is designed to withstand the most aggressive environments. Testing has been completed in accordance with BS8485:2015 and C748 to determine the permeation rates for Methane, Carbon Dioxide and a range of VOC's. Immersion testing has also been completed too for Chemical Resistance to EN 14414 and EN 14415.

### **HANDLING**

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling. This product is non-toxic nor flammable.