POWERBASE®

Vapour and Gas Barrier Solutions
Green, Amber 1 & 2 and Red Gas Protection Measures

CE

Product Information

www.powerbase.com

HIGH PERFORMANCE BARRIER MEMBRANES

Effective protection against CO_2, radon, methane, hydrocarbons and VOCs

Powerbase® is a range of geosynthetic barrier membranes for protection against naturally occurring hazardous gases and soils contaminated with hydrocarbons or toxic industrial pollutants. They are also used for groundwater and environmental protection installations.

Gas barriers are necessary wherever there is a risk of naturally occurring radon or methane gas. Radon is commonly found over granite formations, whereas methane and CO_2 is produced as a result of the decomposition of organic matter such as made ground or natural deposits of coal, peat or silt.

Developments on brownfield sites require effective gas barriers to prevent harmful gases, hydrocarbons and volatile organic compounds (VOCs) from permeating into buildings.

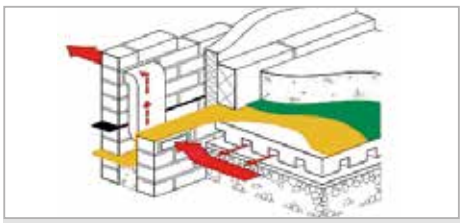
Typically, an impermeable barrier is designed in the foundations of the building over a ventilation layer. Hazardous gases and VOCs migrate up through the soil and collect under the membrane in a sump from where they are vented and safely dispersed into the atmosphere. The principal function of the gas barrier membrane is to prevent harmful gases from entering the building through cracks, construction joints and service openings in the floor slab. The membrane should cover the whole plan area of the structure to all external faces in order to seal both the ground slab as well as any cavity walls and voids in hollow concrete block work.

Special consideration should be given to sites contaminated by Hydrocarbons or VOCs. These are very mobile compounds and will migrate relatively easily through unsuitable membrane materials. Aluminium laminates are superb gas barriers but these materials will delaminate when exposed to hydrocarbon vapour/VOCs; further the aluminium layer is susceptible to oxidation due to moisture penetrating into exposed edges.

A comprehensive range of task-specific engineered barriers and accompanying accessories provide consultants and design engineers effective barrier solutions and for the contractor a rapid, simple and cost-effective installation.

Comprehensive CAD drawings, product data sheets, technical briefing documents, case studies and MSDS/COSHH safety information are available on our website (for registered users) or by contacting our Technical Department.

Powerbase® MultiGas 300



Typical sub-slab design for preventing the ingress of harmful gases and vapours

Powerbase® VOC

PRODUCT SELECTOR

YOUR SOLUTION	DPM	RADON	METHANE	CO_2	HYDRO-CARBONS	VOCs
POWERBASE VOC	NHBC Green	NHBC Amber 1	NHBC Amber 2	NHBC Amber 2	NHBC Red	NHBC Red
MULTIGAS 300	NHBC Green	NHBC Amber 1	NHBC Amber 2	NHBC Amber 2		
LOW PERM	NHBC Green	NHBC Amber 1	NHBC Amber 2	NHBC Amber 2		
RADON	NHBC Green	NHBC Amber 1				

NOTE:

Aluminium laminate gas barrier membranes are unsuitable in soils contaminated by hydrocarbons or VOCs due to a risk of delamination.

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HIGH PERFORMANCE BARRIER MEMBRANES

POWERBASE® VOC

Powerbase® VOC is a specially engineered multilayer composite barrier membrane with exceptional resistance to hydrocarbons and VOCs. The membrane is supported by a smartphone app that provides performance data for a wide range of harmful chemicals.

NHBC Gas Protection Measures

NHBC Green | NHBC Amber 1 | NHBC Amber 2 | NHBC Red

Size:	3.0 x 50m
Thickness:	500 microns
Colour:	Blue/Green

Permeation Performance data:

Benzene	4000 mg/m^2/day
Toluene	4000 mg/m^2/day
Ethyl Benzene	500 mg/m^2/day
Xylene	800 mg/m^2/day
Methane	0.14 ml/m^2/day
Radon	1 x 10^{-14}/m^2/s

POWERBASE® MULTIGAS

An aluminium laminate incorporating a foil between two layers of LDPE and a reinforcing scrim.
A self-adhesive tanking version is also available.

NHBC Gas Protection Measures

NHBC Green | NHBC Amber 1 | NHBC Amber 2

Size:	1.6 x 50m
Weight:	270 gsm
Colour:	Green/Silver

Permeation Performance data:

Methane	0.07 ml/m^2/day

POWERBASE® LOW PERM

BBA certified membrane for radon protection and for low levels of methane and CO_2 where basic protection measures are required.

NHBC Gas Protection Measures

NHBC Green | NHBC Amber 1 | NHBC Amber 2

Size:	4 x 12.5m
Thickness:	500 microns
Colour:	Yellow

Permeation Performance data:

Methane	216 ml/m^2/day
CO_2	952 ml/m^2/day
Radon	7.2 x 10^{-12}/m^2/s

POWERBASE® RADON

BBA certified membrane for radon protection and for low levels of gases where basic protection measures are required.

NHBC Gas Protection Measures

NHBC Green | NHBC Amber 1

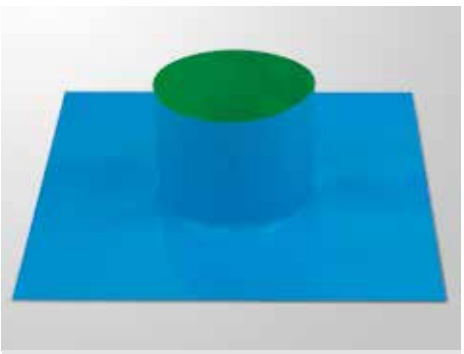
Size:	4.0 x 25m
Thickness:	300 microns
Colour:	Red

Permeation Performance data:

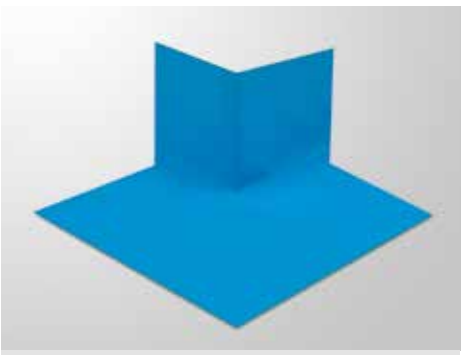
Radon	7.2 x 10^{-12}/m^2/s

ACCESSORIES

Pre-fabricated corner pieces and top hats can be supplied to suit service penetrations and unusual shapes. Self-adhesive joint tapes include Butyl and MultiGas types.



Pre-fabricated Top Hats



Pre-fabricated Corners

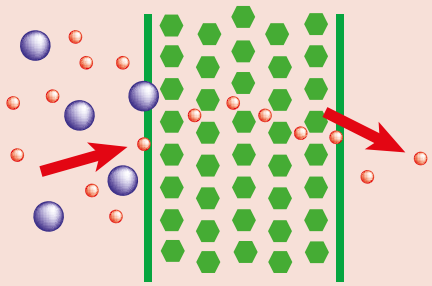
PERFORMANCE DATA

Fitness for Purpose

Hydrocarbon Resistant and VOC Barrier Membranes must be Fit-for-Purpose evidenced by permeation test data from accredited test laboratories.

True barriers will have permeation rates of < 5,000 mg/m2/day tested to DIN 15105-2 for each challenge chemical.

Permeation is the proper measure of performance; it measures the rate at which a chemical moves through a membrane at molecular level.



There is a common misconception that HDPE and PVC membranes are hydrocarbon resistant. Resilient they may be to some hydrocarbons, but hydrocarbons and VOCs permeate readily through homogeneous membranes, since their narrow spectrum of chemical resistance is defined by their polymer structure.

Only by evaluating permeation data the most appropriate material can be selected for the installation.

The Powerbase® VOC app is a unique software application providing site specific permeation information, available to download for all smartphones.

OTHER PRODUCTS

- Powerlon® UV Façade Membranes
- Powerlon® UltraPerm Roof Underlays
- Powerlon® Timber Frame Membranes
- Powerlon® Vapour Control Layers (VCLs)
- Powerlon® Thermo-Reflective Membranes
- Powerclad® Scaffold Sheeting

FURTHER INFORMATION

Further information is available on our website **www.powerbase.com**.

Please register to download Installation Instructions and Product Data Sheets.

Technical documentation is also available by contacting us by email or telephone.

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