



WATERPROOFING SYSTEMS

# DIMPLED FACED VAPOUR BARRIER MEMBRANE

*Waterproofing vapour barrier membrane with special heat activated embossed dimples for the application of thermal insulation*



**DESCRIPTION**

Pre-fabricated waterproofing membrane with the specific function of an absolute vapour barrier. The compound is made of distilled bitumen and elasto-Plastomers (APP type), reinforced with a rot-proof fiberglass mat and aluminium metal sheet that allows to obtain a barrier against the passage of vapour. The DIMPLED FACED VAPOUR BARRIER MEMBRANE on the exposed side features a series of embossed dimples (more than 1000 per m<sup>2</sup>), formed by a special heat activated compound which ensures a strong and durable adhesion to the insulating panels. The advantages of the DIMPLED FACED VAPOUR BARRIER MEMBRANES are basically those aimed at avoiding the use of oxidized bitumen and cold bonding substances (mastic, polyurethane glues) for the application and adhesion of insulating panels. The hot oxidised bitumen, in addition to being extremely dangerous (burns, fumes, etc.), loses in little time its adhesive capacity, exposing the covering to the known dangers due to the strength of persisting wind action and the deformations of the roof covering. In addition, the embossed dimples allow to smooth out any unevenness of the support (more compound on the side where the insulating is applied) ensuring perfect adhesion on the entire surface of the insulating panel. The DIMPLED FACED VAPOUR BARRIER MEMBRANE is equipped with two lateral selvages which ensure, in the overlapping areas, the same thickness of the embossed dimples, thus avoiding a thicker area that would prevent a perfect adhesion of the insulating panel. The DIMPLED FACED VAPOUR BARRIER MEMBRANE can be used successfully even on slopes without affecting the final result. Due to their characteristics, the membranes of the DIMPLED FACED VAPOUR BARRIER MEMBRANE SERIES can be used with success in carrying out the waterproofing of all works, both civil and industrial where required, as the system provides a thermal insulation barrier extremely effective against the passage of water vapour. About the stratigraphy of the covering, the DIMPLED FACED VAPOUR BARRIER MEMBRANE must be inserted under the insulating panel, in order to preserve and protect the latter from condensation of water vapour, which certainly occurs, when the thermal operational features of the roof covering change.

**METHODS OF APPLICATION**

For the application of the membrane the use of heat is generally used by means of a gas torch or specific hot air machine. Use protective devices required by law. The application by heat is not suggested when on heat sensitive materials (polystyrene insulation).

- Coordinate the operations in a way to not cause damage to the construction elements and underground structure. Avoid to leave the structure for the night or for periods of prolonged work interruptions without having been properly sealed.
- **The application surface must not have any depressions to avoid the risk of ponding water, the slope must be at least 1.5% on concrete decks and 3% for steel or wooden ones, this to guarantee a proper run off of rainwater.**
- The water drainage spouts should be sufficiently big enough to allow for rain water to be eliminated in an efficient way.
- Prepare cementitious substrates, including verticals and details, with a bituminous primer either by brush or airless, approx. 300/400 g/m<sup>2</sup>.
- Allow this preparation layer to dry before proceeding with any other operation.
- With prefabricated constructions, apply a suitable reinforcing strip along all joints. In the presence of construction joints, prefabricated panels or metal decks, suitable expansion joints are to be considered.
- The membranes must be applied to the substrate fully bonded.
- All details, perimeters, verticals, change of slope as well as projecting area must be fully bonded.

Technical Characteristics	Measure units	Reference norm	V	Tolerance
Type of compound			APP	
Type of reinforcement			Fiberglass + Aluminium	
Upper face finish			PE film	
Lower face finish			PE film	
Length	m	EN 1848-1	7,5 -1%	
Width	m	EN 1848-1	1,05 -1%	
Mass	kg/m <sup>2</sup>	EN 1849-1	4,8	±10%
Cold flexibility	°C	EN 1109	-15 *	
Shear resistance L/T	N/5 cm	EN 12317-1	350/250	-20%
Tensile strength L/T	N/5 cm	EN 12311-1	450/350	-20%
Elongation at break L/T	%	EN 12311-1	2/2	-2
Nail tear strength L/T	N	EN 12310-1	100/100	-30%
Static puncture resistance	kg	EN 12730	5	
Dynamic puncture resistance	mm	EN 12691	500	
Water vapour permeability	μ	EN 1931	1500000	
Water vapour permeability after artificial ageing	μ	EN 1296	NPD	
Fire resistance		EN 13501-5	F ROOF	
Fire reaction		EN 13501-1	F	
Watertightness	kPa	EN 1928	60	

\* Cold flexibility of membrane before dimples.

NPD = No Performance Declared in accordance with the EU Construction Products Directive.

# TECHNICAL DATA SHEET



## APPLICATION OF THE INSULATION

When choosing the method of fixing the insulation of the roof system, applied on top of the vapour barrier, the following factors must be considered:

- type of insulation (characteristics of stability, compression, etc.),
- compatibility between the fixing, the insulation and the waterproofing membrane,
- the factor of possible wind uplift,
- the type of substrate.

Where application with mechanical fixing is required of the panels, these must be applied side by side making sure that they are also staggered and properly fixed to the DIMPLED FACED VAPOUR BARRIER MEMBRANE with suitable fixings to the type of substrate and of the correct length based on the thickness, these should be at least 10 cm from the edges and along the diagonals. The total resistance of the fixing elements of the panel, to wind uplift (Wh), should in any case be superior to  $\geq 400$  N per fixing. For the application of the insulation it is suggested to follow the indications of the manufacturer and eventual indications in the specification.

## APPLICATION


- On cementitious surfaces and similar apply, by roller or airless, bituminous primer, approx. consumption 300 g/m<sup>2</sup>.
- Apply by torch application a 25 cm strip of membrane reinforced with polyester along all vertical up stands.
- To have all overlaps with the slope, position the membrane always starting from the lowest point.
- Position the membrane sheets staggered, avoiding to create any overlaps against the slope and the drains.
- Cut the corners of membrane sheet which will be laid under the next sheet at a 45° angle (10 x 10 cm).
- The side joints must be overlapped by 10 cm.
- On the short side of the membrane the joints must be laid and welded on a strip of membrane 4 mm thick, 30 cm wide and previously welded to the substrate.
- The bituminous membrane will be applied with a propane gas torch to the substrate. It is necessary to heat the entire surface, except for the side & head laps, making sure that the compound forms a liquid mass in front of the roll to assure that it saturates any superficial porosity.
- The side laps will be heat welded with an appropriate torch; during this stage the overlaps should be pressed by using a roller (15 kg) from which a bead of compound should flow and therefore avoiding to have to iron the overlaps.
- The height of the verticals must be equivalent to the thickness of the insulation panel plus 5 cm.

## RECOMMENDATIONS

To best use the technical characteristics of bituminous membranes and guarantee the maximum performance and durability of the jobs where they are used, some simple but fundamental rules must be respected.

- The rolls are to be stored in an upright position, indoors in a dry and ventilated area, away from heat sources. Absolutely avoid the stacking of rolls and pallets for storage or transport to avoid possible deformations which may compromise a perfect installation. It is recommended to store the product at temperatures above 0°C.
- The rolls shall be kept in a warm or heated storage area during application, should the workability of the material deteriorate or become stiff and difficult to install during application, these should be returned to the heated storage area and substituted with new rolls. The rolls that are temporarily stored on the roof before application, shall be kept elevated by being left on their own pallets and shall be covered and protected from the weather.
- The application surface must be smooth dry & clean.
- The application surface must be previously treated with a suitable bituminous primer to eliminate dust and enhance the adhesion of the membrane.
- The application surface must not have any depressions to avoid the risk of ponding water, the slope must be at least 1.5% on concrete decks and 3% for steel or wooden ones, this to guarantee a proper run off of rainwater.
- In situations of application on vertical surfaces superior to 2 meters or on very sloped substrates, apply suitable mechanical fixings to the head laps, after which they will be sealed when torching the head laps.
- The application must be done at temperature higher than +5°C.
- The application must be interrupted in adverse weather conditions (high humidity, rain, etc.).
- The pallets on which the rolls are packaged are intended for normal warehouse use.
- The materials on stock should be rotated following a first in first out rotation.
- For information concerning storage and application of Geco membranes, please refer to the "Installation manual".

## FIELDS OF USE EN13970 VAPOUR BARRIER

CERTIFICATION 	N. LAYERS			METHOD OF APPLICATION						TYPE OF APPLICATION			TYPE			
	SINGLE LAYER	DOUBLE LAYER	MULTILAYER	TORCH	HOT AIR	MIXED (TORCH/AIR)	COLD BOND GLUE	MECHANICAL FIXING	THERMOADHESIVE / SELF-ADHESIVE	FULLY BONDED	PARTIALLY BONDED	LOOSE LAID	COMPLEMENTARY LAYER	TOP LAYER	HEAVY PROTECTION	ANTI-ROOT
<b>DIMPLED FACED VAPOUR BARRIER MEMBRANE V 4.8 KG/M<sup>2</sup></b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						<b>X</b>			<b>X</b>			