Technical data sheet

# GRID BIT P+V VIADUCTS

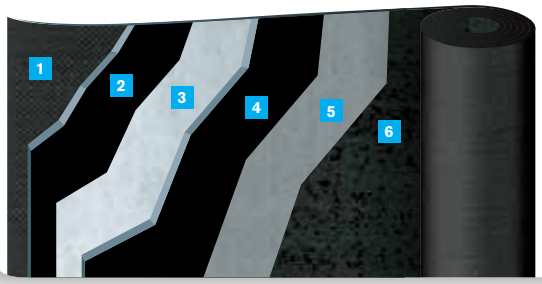
## APP distilled bitumen waterproofing membrane with dual reinforcement

## Description

Prefabricated modified polymer bitumen membrane composed of polyolefin thermoplastic stereospecific polymers with high molecular weight and special distilled bitumens, with excellent characteristics of resistance to ageing and phase inversion (type APP). These built in elements, integrating themselves, enhance the excellent qualities of flexibility, lightness, adhesion, resistance to ageing and to UV rays of the GRID BIT P+V VIADUCT membrane.
GRID BIT P+V VIADUCT is specifically designed to be used for bridges, viaducts, parking decks, roof gardens and for all those applications where very high mechanical resistance and excellent adhesion to the substrate are required.
Dual reinforcement with a heavy weight woven non woven single strand polyester and rot proof fiber glass mat, which confer to the product high mechanical characteristics and excellent dimensional stability and static & dynamic puncture resistance.
The GRID BIT P+V VIADUCT membrane is finished on the upper face with a special talc.
On the application face, the membrane is finished with a woven non woven polypropylene mat.

## Stratigraphy

1. Polypropylene mat
2. Waterproofing mass
3. Single strand composite polyester fabric of heavy grammage
4. Waterproofing mass
5. Fiberglass reinforcement
6. Talc finish




## Uses

Due to their characteristics, the membranes of the GRID BIT P+V VIADUCTS series can be used with success in a wide range of waterproofing applications in civil and industrial works, particularly those applications which require high resistance to mechanical stress and static and/or dynamic puncture resistance such as: bridges, viaducts, parking decks, etc.
The particular formulation of the membranes of the GRID BIT P+V VIADUCTS series makes them compatible with all PLUVITEC membranes, be they either APP or SBS based.
GRID BIT P+V VIADUCTS can be used, based on the type of construction and project, either single layer or in multilayer systems and especially in those applications where an exceptionally high dimensional stability is required.
GRID BIT P+V VIADUCTS has been specifically developed to be successfully used in systems with Mastic Asphalt (GUSSASPHALT).
In the bridge deck waterproofing, waterproofing membrane must be torch apply and completely adhere to the substrate.
Hot paving asphalt will be applied directly on the membrane, without the use of any separation layer.
The thickness of the binder course must be minimum 6 cm with a granulometry of 0-15 mm, while for the surface course the thickness must be minimum 4 cm and granulometry of 0-12 mm.

If used on a new laying surface with a residual humidity of more than 5% or in case of refurbishing an existing driveway cover, the product must be applied on original support (all existing waterproofing layers must be removed).
On the clean application surface it must applied PRIMER EPOX, as indicated in the product technical data sheet.
When applying on compacted earth dams, the sheets must be properly anchored to the embankment and on the slope to assure the stability of the waterproofing itself.

## Advantages

- Proven waterproofing membrane with excellent mechanical performance, dimensional stability and very high puncture resistance.
- Improvement of the walkability and resistance to external strain thanks to the particular architecture of the membrane.
- An excellent resistance to aging thanks to the particular reinforcement also without protection.
- Resistant to salts used on the roads. The coefficient of adhesion to the lower substrate is equal or superior to that of the road asphalt used.
- Sufficient resistance to support the load exerted during the compaction of the road asphalt and site traffic.

## Fields of use

CE

**EN14695 *Viaducts* (Certificate n° 0958-CPR-2045/1)**

| | 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 | Thermo Ad / Self Adhesive | Fully Bonded | Partially Bonded | Loose Laid | Complimentary Layer | Top Layer | Heavy Protection | Anti-root | Other Uses |
| **GRID BIT P+V 5 MM VIADUCTS** | ▪ | ▪ | ▪ | ▪ | | ▪ | ▪ | ▪ | | ▪ | ▪ | | | ▪ | ▪ | | |

The waterproofing membrane based on distilled bitumen and polymers, as shown in this data sheet does not require the issue of a MSDS, because it does not contain dangerous substances. The information data sheet for the proper use of products is available.

# GRID BIT P+V VIADUCTS

technical data sheet

## How to apply





## Application

- On cementitious surfaces and similar apply primer by roller or airless.
- 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 nest sheet at a 45° angle (10 x 10 cm).
- The joints, both side and head, must be respectively overlapped by 10 & 15 cm.
- 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. (Draw. N.1)
- The side laps (10 cm) and head laps (15 cm) 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. (Draw. N.2)
- Apply the vertical membrane sheet having the same characteristics of the waterproofing membrane and dimensions equal to the width of the roll, making sure that it overlaps the horizontal one by at least 10 cm, heating it with a gas torch and squeezing it with a trowel until a bead of compound appears from underneath. (Draw. N.3)
- The height of the verticals must be equivalent or superior to the finished surface by at least 15 cm.
- Apply the hot asphalt directly over the GRID BIT P+V VIADUCTS using a paving-machine. The bituminous emulsion is required only on the perimeter area. The thickness of the structural course has to be minimum of 6 cm (size 0-15 mm) while the thickness of the friction course has to be 4 cm at least (size 0-12 mm). (Draw. N.4)

## 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 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.**
- 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.

## Technical data

| Technical Characteristics | Measure Units | Reference Norm | P+V | Tolerance |
|---|---|---|---|---|
| **Type of reinforcement** | | | Single strand polyester+Fiberglass | |
| **Upper face finish** | | | Talc | |
| **Lower face finish** | | | Polypropylene mat | |
| **Length** | m | EN 1848-1 | 7,27 -1% | |
| **Width** | m | EN 1848-1 | 1,1 -1% | |
| **Thickness** | mm | EN 1849-1 | 5 | ±5% |
| **Artificial U.V. ageing** | | EN 1297 | Pass | |
| **Cold flexibility** | °C | EN 1109 | -20 | |
| **Cold flexibility after ageing** | °C | EN 1296 - EN 1109 | -15 | +15°C |
| **Flow resistance** | °C | EN 1110 | 140 | |
| **Flow resistance after ageing** | °C | EN 1296 - EN 1110 | 140 | -10°C |
| **Shear resistance L / T** | N / 5 cm | EN 12317-1 | 1100/900 | ±20% |
| **Peel resistance of joints L / T** | N / 5 cm | EN 12316-1 | 50/50 | ±20N |
| **Tensile strength L / T** | N / 5 cm | EN 12311-1 | 1200/1000 | ±20% |
| **Elongation at break L / T** | % | EN 12311-1 | 50/50 | ±15 |
| **Tearing resistance L / T** | N | EN 12310-1 | 250/250 | ±30% |
| **Static puncture resistance** | kg | EN 12730 | 25 | |
| **Dynamic puncture resistance** | mm | EN 12691 | 1500 | |
| **Dimensional stability** | % | EN 1107-1 | -0,2 | |
| **Fire resistance** | | EN 13501-5 | F ROOF | |
| **Fire reaction** | | EN 13501-1 | F | |
| **Watertightness** | kPa | EN 1928 | 60 | |
| **Watertightness after ageing** | kPa | EN 1296 - EN 1928-B | 60 | |
| **Vapour transmission** | μ | EN 1931 | 20000 | |
| **Bond strenght** | N/mm² | EN 13596 | 0,42 | ≥ |
| **Shear strenght** | N/mm² | EN 13653 | 0,24 | ≥ |
| **Compatibility by heat conditioning** | % | EN 14691 | 165 | ≥ |
| **Crack Bridging Ability** | °C | EN 14224 | -20 | ≥ |
| **Resistance to dynamic water pressure** | | EN 14694 | pass | |
| **Resistance to compaction of an asphalt layer** | | EN 14692 | pass | |
| **Behaviour of bitumen sheets during application of mastic asphalt** | %, mm, % | EN 14693 | 0 / -0,79 / 0 | |

## Sizes & packing

| | P+V 5 mm |
|---|---|
| **Rolls size [m]** | 7,27 x 1,1 |
| **Rolls per pallet** | 24 |
| **Square meters per pallet [m²]** | 192 |

Sizes & packing may vary depending on the type of transportation. The technical data given is based on average values obtained during production. We reserve the rights to change or modify the nominal values without prior notice or advice. The information contained in this data sheet are based on our experience. We cannot take any responsibility for a possible incorrect use of the products. The customer has to choose under their own responsibility a product fit for the intended use.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Company with certified system

09/07/2019 - This version supersedes all previous ones.