BASF

The Chemical Company

MASTERPREN® 2004M

Bituminous, UV resistant, torch-on waterproofing membrane

DESCRIPTION

MASTERPREN 2004M is a composite waterproofing membrane, consisting of a thermoplastic, modified bituminous compound, reinforced in the middle with a polyester based, non-woven fabric for optimum mechanical strength and incorporating a layer of coloured mineral granules on the exposed surface.

The modified bituminous compound is formulated using selected grades of bitumen and atactic polypropylene (APP) to achieve superior ageing properties and resistance to low temperatures. The layer of mineral granules allows the surface to be exposed to sunlight.

RECOMMENDED FOR

MASTERPREN 2004M is especially suitable for waterproofing exposed surfaces.

The main areas of application are flat and sloped roofs which will not receive any further surface finish.

FEATURES AND BENEFITS

- **Impermeable-** Protects substrate from the ingress of water and water borne salts.
- **Flexible-** Bridges active cracks without rupturing
- **Coated with coloured mineral granules-** Suitable for exposed conditions. Eliminates expensive protective coverings. Aesthetically attractive.
- **Wide service temperature range-** Performs even in extreme ambient conditions.
- **Chemical resistant-** Allows usage in areas exposed to certain common chemicals.
- **Bituminous compound modified with APP-** Improved resistance to ageing and low temperature durability.
- **High resistance to polluted atmosphere-** Service life unaffected in industrial and polluted regions

PERFORMANCE DATA

Test Method	Unit	Tolerance	Value
Flexibility at low temperature (pliability) EN1109:1999	**ºC**	**</=**	**-5**
Heat flow resistance EN1110:1999	**ºC**	**</=**	**120**
Water vapour transmission properties EN1931:2000	**µ**	**-**	**20**
Tensile Strength EN12311-1:1999	**N/50 mm**	**-20%**	**Long:500 Trans:350**
Elongation at break EN12311-1-:1999	**%**	**-15**	**Long :40 Trans:40**
Resistance to tearing (nail shank)	**N**	**-30%**	**Long: 100 Trans:100**
Dimensional stability EN:1107-1:1999	**%**	**</=**	**Long:±0.3 Trans:±0.3**
Flow resistance at elevated temperature EN1296:2000/ EN1110- B:1999	**ºC**	**-10**	**110**
Watertightness after artificial ageing EN1296:2000/ EN1928-B:2000	**kPa**	**>/=60**	**Passed**
Determination of adhesion of granules (Loss) – EN12039:1999	**%**	**<30**	**Passed**

The performance data is typical and based upon controlled laboratory conditions. Actual performance on the job site may vary from these values based on actual site conditions.

PROPERTIES

Supply form	:	Rolled sheet
Colour	:	Black
Thickness	:	4 mm
Dimension of roll (W x L x T) m	:	1 x 10 x 0.004
Service temperature	:	-5°C to 80°C
Mass per unit area	:	4.5 kg/m^2

ESTIMATING DATA

One roll of **MASTERPREN 2004M,** after deducting for the overlaps, covers an area of approximately 9.4 m^2 per roll. However, slightly higher consumption is possible while treating odd shaped areas, or where many joints are required.

APPLICATION

Surface Preparation

Correct substrate preparation is critical for optimum performance. Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, or any other contaminant.

Fill surface irregularities such as blowholes, honeycombs etc., with an EMACO repair mortar to achieve a smooth and level surface. Repair cracks either by resin injection or by caulking, depending on the nature of cracks. Where needed provide expansion joints and seal them with SONOLASTIC NP1 or MASTERFLEX 700 (see separate data sheets).

Detailing: The detailing at external and internal corners, joints and penetrations of pipes, air-con ducts, openings such as drains, etc., must be carefully carried out before commencing application of the horizontal membrane area. Contact BASF Construction Chemicals for advice.

External and internal corners: Round off the corners between the vertical and horizontal by providing covings in the inward corners and by re-profiling the outward ones, using an EMACO repair mortar.

Expansion Joints: Seal the joints with MASTERFLEX 700 polysulphide sealant (see separate data sheet), before laying the membrane.

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Lay the membrane only up to the joint edge without taking it across the joint. Contact BASF Construction Chemicals for further advice.

Air vent: Installation of air vents is recommended to vent out trapped air and water vapour from the substrate and/or the insulation board (if laid). Contact BASF Construction Chemicals for advice.

Placing

Check for any damage to the membrane by unrolling it once at site and roll it back ready for laying. Ensure that the torchable side is down. On a horizontal surface the laying should start from the lowest level and on vertical or very steep surfaces, from the bottom.

In applications involving multiple layer installation, use **MASTERPREN 2004M** only for the final layer.

Torching : Use a propane gas (or a mix of 95% propane and 5% butane) torch at a working pressure of 3.5 to 4 bars, with bell diameter of 50 mm for small areas and 70 mm for large areas.

Pass the flame briefly over the torchable side of the membrane without overheating it, then direct the flame towards the area of the substrate about to receive the membrane. Take care to see that the flame does not touch the surface.

It is essential to be aware of the depth of reinforcement fabric in the membrane to prevent damage to it while torching. Choose one of the two bonding methods to suit a given situation - Semi bonding and Full bonding.

Semi bonding: For horizontal substrates having slopes of maximum 40% if laying on concrete and 20% if laying on thermal insulation covering.

Torch-bond the membrane along the perimeter, at overlaps and at staggered spots or strips limiting the total bonded area to 50% of the total. Stagger the torching spots / strips so as to obtain a continuous air pocket between the substrate and the membrane.

Full bonding: For surfaces with slopes steeper than 40%, vertical surfaces and while installing subsequent layers over the existing one where multi-layers are being installed.

Use battens or fasteners to hold the top edge of the membrane in position on steeply sloping and vertical surfaces immediately after torch-bonding the edge. Continue to torch-bond the entire area of the membrane from top downwards.

In the case of multiple layer installations, while torch-bonding the upper layer to the lower, ensure that the lower layer is not damaged due to over torching.

General guidelines

Torching the membrane, heating the substrate and bonding the torched part of the membrane onto the heated area, should be carried out in quick succession.

Press the bonded area firmly with a rubber roller and smooth the membrane from the centre outwards to the edges for optimum adhesion and to expel any entrapped air.

Unroll in a straight line, without creasing. After a roll has been installed and smoothed, install the next roll with a minimum overlap of 50mm along the sides and 100mm at the ends.

If the membrane has ballooned at a few spots after laying due to entrapped air or water, puncture the bubbles with a sharp needle. The pinholes will heal by themselves during the smoothing process.

It is recommended that the horizontal membrane is laid first followed by the vertical. Ensure that the vertical membrane laps over the horizontal one by at least 100 mm.

For information about application, please obtain a copy of the BASF “Application Guide for Masterpren 2004M” from your local representative.

PACKAGING

MASTERPREN 2004M is supplied in rolls 1m wide and 10m long.

SHELF LIFE

Always store **MASTERPREN 2004M** rolls in a well enclosed place sheltered from the sun and rain, stacked vertically and at temperatures between 5°C and 30°C. **MASTERPREN 2004M** can be kept for 12 months from the date of manufacture, if stored in unopened original packaging and as recommended above.

PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the BASF Construction Chemicals **Material Safety Data Sheet (MSDS**) from our office or our website.

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BASF Construction Chemicals offices in ASEAN — Website: www.ap.cc.basf.com

Singapore	Malaysia	Indonesia	Thailand	Vietnam	Philippines
Tel: +65-6861-6766	Tel: +60-3-5628-3888	Tel: +62-21-526-2481	Tel: +66-2-664-9222	Tel: +84-650-374-3100	Tel: +63-2-889-4321
Fax: +65-6861-3186	Fax: +60-3-5628-3776	Fax: +62-21-526-2541	Fax: +66-2-664-9267	Fax: +84-650-374-3200	Fax: +63-2-889-4361