TORODIN

Asphaltic waterproofing membrane

DESCRIPTION

Asphaltic membrane produced by the physical modification of asphalt with polymers, structured with continuous non-textile filaments of pre-stabilized polyester

TECHNICAL CHARACTERISTICS OF THE PRODUCT

Characteristics	Unit	Type III
Thickness	mm	3, 4 & 5
Resistance to longitudinal & transversal traction (minimum)	N	400
Longitudinal and transversal elongation (minimum)	%	30
Water absorption (maximum)	%	1,5
Flexibility at low temperatures	°C	Classe A= -10 / Class B = -5
Resistance to impact	J-Joule	4.90
Drooping from heat (minimum)	°C	95
Dimensional stability (minimum)	%	1
Flexibility after aging	°C	Classe A = 0 / Class B = 5
Watertightness (minimum)	w.c.m	15
Tear resistance (minimum)	N	120

REFERENCE NORMS

- NBR 9952 – Asphaltic Membranes for Waterproofing (Applies to Type III – Class A & B)
- NBR 9575:2010 – Waterproofing – Systems and Projects;
- NBR 9574:2008 – Execution of Waterproofing.

UTILIZATION

Torodin 3mm: verandas, terraces and concrete slabs of small dimensions, under-roof slabs, troughs, raised reflection pools of small dimensions and manifolds.
Torodin 4mm: floor concrete slabs, roofing concrete slabs, playgrounds, parking lot/garage concrete slabs, trough beams, raised concrete reservoirs, raised swimming pools, raised reflecting pools, ramps, waterproofing curtains in contact with floor (external surface).
Torodin 5mm: pre-fabricated concrete slabs, parking lot/garage concrete slabs, ramps, helipads/heliports, raised swimming pools and waterproofing curtains (external surface).

For other uses consult the Technical Department (sac@viapol.com.br).

USAGE INSTRUCTIONS

Preparation of the Surface

The surface must be previously washed, free of dust, sand, residues of oil, grease, release agent, stains of any type of material that may hinder adhesion of the product.

On the moist horizontal surface, execute the regularization with a minimum trim of 1% in the direction of the water run-off points. The regularization mortar should be prepared with cement and sand mortar, ratio 1:3, using kneading water composed of 1 volume of **Viafix** adhesive emulsion and 2 volumes of water for better adhesion to the substrate. This mortar must be given an even finish, with a minimum thickness of 2cm.
In the region of the drainpipes create a recess 1cm deep, measuring 40x40cm, with beveled edges, so that the entire waterproofing will be level after laying the reinforcements to be made at this location.
All corners and edges must be rounded off with a radius of approximately 5cm to 8cm.
In vertical masonry areas, start a roughcast of cement and medium sand, ratio 1:3, followed by application of evened mortar of cement and medium sand, ratio 1:4, using kneading water composed of 1 volume of **Viafix** adhesive emulsion and 2 volumes of water.
In the entrance spans of buildings (doorways, frames, etc.), the regularization should advance at least 60cm into the interior, under doorjambs and casings, respecting the trim to external areas, except in the case of internal areas with wood floors or subject to degrading from the action of moisture. It is recommended that external areas have an elevation at least 6cm less that internal elevations, both in the level of waterproofing as well as in the level of the finished flooring.
Drainpipes and other outcrop pieces should be adequately fixed to allow execution of finishing.
In reservoirs and swimming pools, conduct the full load test for a minimum of 72 hours prior to the preparation of the surface.

Application of the Product

On the dry regularized surface apply one coat of **Viabit, Adeflex or Ecoprimer** primer with a roller or wide brush and allow to dry for a minimum of 6 hours.

Application with blowtorch flame:
Align the **Torodin** asphaltic membrane according to the realignment of the area, then start the adhesion from the drainpipes towards the more elevated levels.
With the aid of a LPG gas blowtorch flame, proceed with the total adhesion of the **Torodin** membrane The seams between lengths of membrane should have an overlap of 10cm and should be beveled to provide perfect sealing.
Apply the membranes in the horizontal position, going up 10 cm in the vertical.
Align and adhere the membrane in the vertical position, then descend and lay a 10cm overlap on the membrane laid in the horizontal position.
In the vertical position the membrane should be adhered 30cm higher than the finished floor.

Application with hot asphalt:
Align the **Torodin** asphaltic membrane according to the realignment of the area, then start the adhesion from the drainpipes towards the more elevated areas.
Apply one coat of **NBR II or NBR III asphalt** with a thickness of approximately 2mm. Simultaneously unroll the **Torodin** asphaltic membrane over the coat of asphalt, always taking care to leave an excess of asphalt just ahead of the spool as the membrane unwinds.
Apply strong pressure on the membrane just laid, from the middle towards the sides, in order to remove any bubbles/pockets of air that may have been trapped between the asphalt coated surface and the membrane.
All the lengths of membrane must be applied with a 10cm overlap, keeping in mind that an excess of asphalt must also be applied on the overlaps to guarantee perfect fusion between strips of membrane, resulting in a raised asphalt welt along the seams.
Apply the membranes in the horizontal position, going up 10cm in the vertical. Align and adhere the membrane in the vertical position, then descend and lay a 10cm overlap on the membrane laid in the horizontal. In the vertical the membrane should be adhered 30cm higher than the finished floor.
Apply asphalt copiously over all seams as a reinforcing procedure and to correct possible flaws in the adhesion of the membranes.
Approximate total asphalt consumption for adhesion of the membrane: 3kg/m2.
After the asphaltic membrane has been applied, conduct the watertightness test, filling the waterproofed areas with water and maintaining the level for a minimum of 72 hours.

Separation Layer

This layer prevents the dilatation and contraction forces of the mechanical protection mortar from acting directly on the waterproofing.

Use plastic sheeting with a thickness of 24 micra as a separation layer.
As a buffer layer for parking lots/garages use geotextile with a minimum weight of 400grs/m2, and over this apply a separation layer of plastic sheeting (24 micra thickness).

MECHANICAL PROTECTION MORTAR

Horizontal:
Execute the mechanical protection mortar of cement and sand, ratio 1:4, evened out to a minimum thickness of 3cm. This mortar should have perimeter seals 2cm in width, filled with bituminous mortar of cement, sand and **Vitkote** asphaltic emulsion, ratio 1:8:3. If the mechanical protection is to be the final flooring, execute seams forming squares measuring a maximum of 2,00 m x 2,00 m, filled with bituminous mortar as described.
For parking lots/garages and ramps, execute the planned flooring, which should conform to project specifications and the specific needs of the location.

Vertical:
Over the waterproofing apply roughcast of cement and medium sand, ratio 1:3, followed by execution of evenly spread mortar of cement and medium sand, ratio 1:4, using kneading water composed of 1 volume of **Viafix** adhesive emulsion and 2 volumes of water. The mortar should be structured with plastic netting and should extend 10cm above the asphaltic membrane.

CONSUMPTION

Torodin Asphaltic Membrane: area of 1.15 m², considering overlaps and losses from cutouts of edges.
Primer: 0.40 l/m²
NBR II or NBR III Asphalt– 3kg/m²,

FINISH OF MEMBRANE

AA – Sand on both faces for adhesion with hot asphalt.
PP – Polyethylene on both faces for adhesion with blowtorch.
Other types of finish: by consultation.
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PACKAGING / STACKING

Spools 1m in width, containing 10m of membrane:
Pallet with 30 spools of 3mm membrane - 300 m²;
Pallet with 25 spools of 4mm membrane - 250 m²;
Pallet with 20 spools of 5mm membrane - 200 m².
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Pallets should be stacked as recommended to avoid collapse of the stack and damage to the products.
The products must be stacked vertically on pallets, avoiding contact of the products with the floor.
Do not stack the products against walls or partitions.
Stack up to 2 pallets, with the second pallet resting on Madeirit for better distribution of the weight

VALIDITY / STORAGE

5 years from date of manufacture.

Store the product in the vertical position, in the original intact packaging, in a covered, dry ventilated location, far from sources of heat.

SAFETY RECOMMENDATIONS

Prior to starting work consult the SISCP (Safety Information Sheet for Chemical Products) of the products.

Due to high temperature application, use adequate clothing and PPE (respirator, split leather gloves, boots, over-sleeves, leggings, apron and safety eyewear), keeping the area ventilated until the product has dried completely.

In closed/indoor areas it is imperative to use forced ventilation and a semi-facial mask equipped with a filter adequate for organic vapors.

When a blowtorch is used for applying the waterproofing system in a closed/indoor area, we recommend that the gas cylinder be kept away from the work area for greater safety.

ENVIRONMENTAL PRECAUTIONS

Dispose of materials in an appropriate location in accordance with regulations based on local environmental legislation in force.

FIRST AID

Consult the SISCP of the products.

In case of contact of hot product with the skin, cool the area immediately with cold water until the product cools and hardens, then cover the burnt region and seek medical assistance.

In case of intoxication by inhalation, move the victim to a well ventilated location and immediately seek medical assistance.

In case of contact with the eyes, wash copiously with potable water and seek medical assistance.
In the eventuality of irritation of the eyes or skin, or ingestion of the product, consult a doctor, stating the type of product involved.

For further details, consult the catalogues of the following products: **Viafix**, **Adeflex**, **Viabit**, **Ecoprimer, Vitkote, NBR II and NBR III**