

RECOMMENDED SOLUTIONS FOR ROOF WATERPROOFING

From



Waterproofingwale (Karma Yoga Vedanta Pvt Ltd)

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RECOMMENDED SOLUTIONS FOR ROOF WATERPROOFING

Introduction

3.0 Scope of work.

3.1 Work shall include design, supply, install and test approved EPDM membrane based waterproofing systems to underground structure, terrace, toilet sunk slabs, UG and Overhead water tanks etc. This shall be guaranteed for minimum 10 years on Rs. 100/- stamp in a proforma, in approved format.

- a) Waterproofing of basement including sealing of services junctions, drain points, sumps shall be as per approved system using EPDM based waterproofing treatment as per manufacturer's recommendations and suitable for intended use.
- b) Waterproofing of terrace inclusive of grouting, sealing rainwater down takes outlets, other services outlets, junctions of walls, slab, beam, columns, parapet wall etc. where required expansion joints all as per approved terrace proprietary treatment as per manufacturer's recommendations and suitable for intended use.

3.2 Waterproofing of toilet sunk portions and water tanks inclusive of grouting, sealing, outlet pipes of services, junctions of slab, beams, walls and covering with protective cement sand plaster coat / screed.

3.3 Work shall included design, supply, install and test EPDM Membrane based waterproofing system for basement and terrace system for sloped / flat roofs. This shall be guaranteed for minimum 10 years on Rs. 100/- stamp in a proforma, in approved format. Work shall conform to minimum standards specified. Systems detailed hereunder are to clarify type of waterproofing system expected. Contractor is at liberty to suggest and submit equivalent system with products meeting / exceeding standards.

3.4 The contractor shall submit the following for record....

1. Statement giving detailed brief of work he proposes to carry out.

- a. Name of agency employed by it with certificate of having similar and the quantum of work carried out.
- b. Technical specifications.
- c. Product data sheets of material to be used.
- d. Shop drawing detailing.
 - Sections co-coordinated with typical installations details
 - Vertical termination and sealing
 - Laps needed if any
 - Typical expansion, construction and control jointing details with minimum requirements.
 - Horizontal fixing and laying details.
 - Typical finishing arrangement.
 - Flashings if required.
- e. Protective measures to be taken
- f. Installation guidance
- g. Samples of each product in duplicate fixed over plywood boards or similar to enable proper cross sections.
- h. Manufacturer's certificate that product and material to be used is correct and shall give intended results when applied through authorized agency.

4. Workmanship

4.1 Surface preparation of Surfaces per manufacturer's recommendations including:

- a) The surfaces to receive the treatment shall be thoroughly cleaned of
 - Laitances, scale, loose material on surface.
 - Grease, oil or other contaminants by etching with 10-15% of solution of muriatic acid using commercial grade alkaline cleaner, flushing with clean water drying and vacuuming.
- b) Surfaces shall be examined and well-defined cracks grouted by making "V" groove / notches with cement slurry, shall be cured and dried well before treatment.
- c) Any honeycombs shall be carefully cut and plugged, and cured well before treatment.
- d) Examination of surfaces shall account for the fact that,
 - Surfaces are cured for 14 days and no condensation has taken place.
 - Horizontal and vertical surfaces have smooth finish, free from defects.
 - Surfaces are dry, clean, free of grease, oil, dirt, rust, corrosion, other coatings and contaminants which could affect bond of waterproofing system.

1.0. Method and Concerned Areas

The roof water proofing is done to stop the penetration of water from the roof slab to the floor below , All the water collected or accumulated from the rain fall is directed towards the drain points formed in the roof slab at the edges through proper slope to the screed applied on the roof slab

1.1. Waterproofingwale- Recommended Systems

- EPDM Membrane - A highly elastomeric (300% elongation)waterproofing membrane **2.0. Method statement for waterproofing of the roof slab**

2.1. Surface Preparation

- Substrate should be sound, dry and free of sharp edges, loose materials, oil, and grease
- Roof slab should be checked for cracks or undulations. Cracks and undulations, if any, must be filled with cement sand mortar admixed with Waterproofingwale Polymer at a ratio 20% by weight of cement.
- For any traces of oil and grease, these must be given a wash with tri-chloro ethylene and washed off with a jet of water and then dried / mopped off.
- Loose particles must be vacuum sucked.
- The substrate must be dry with moisture content below 4%.
- The rain water drain pipe openings should be checked for proper levels and slope.
- The concrete around pipe openings should be cleared and filled with Waterproofingwale grout .

2.2. Step by Step Approach using EPDM Membrane

2.2.1. Treatment at Joints

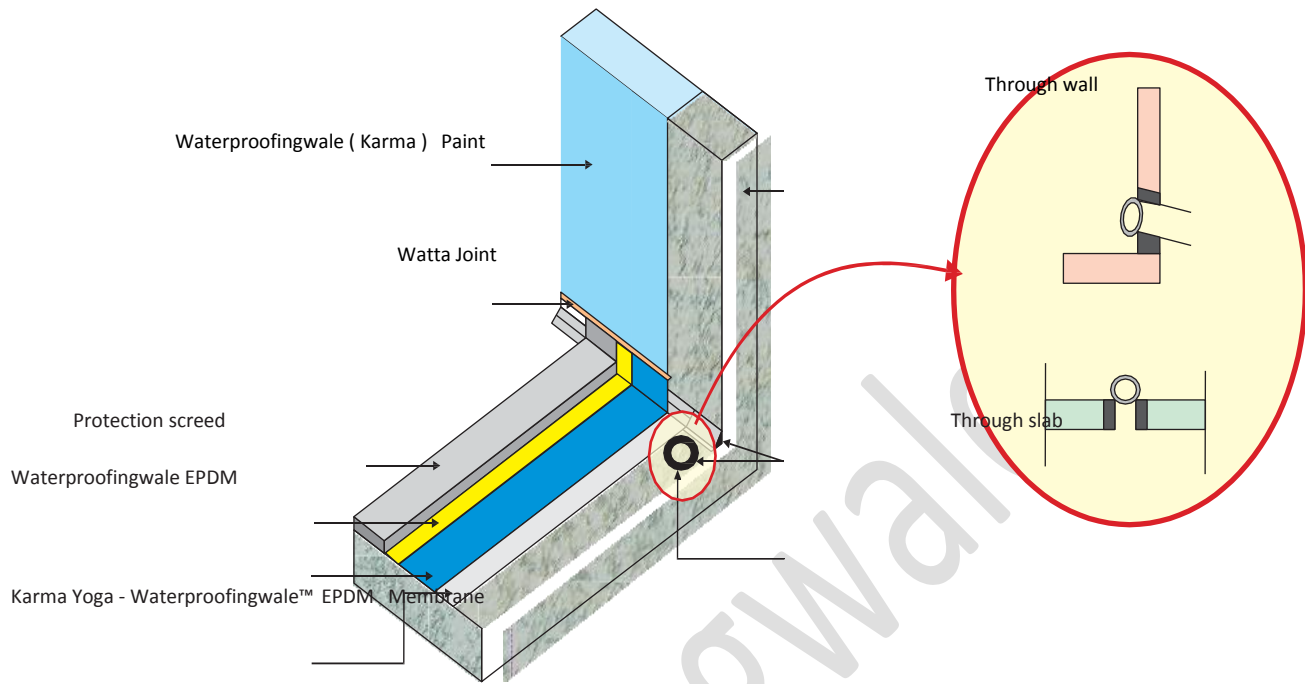
- Sand: cement mortar cants (angle fillets) of 50mm should be formed at all floor and wall joints and around the column extensions and water tank bases if any.

- For waterproofing of mother slab (If to be protected with screed or tiles) use 160 GSM Geo textile and loosely lay EPDM membrane; use adhesive or Tape for splicing the factory buffed membrane joints.
- For waterproofing of mother slab (If to be exposed and without foot traffic) use full bonding method of waterproofingwale ; use adhesive or Tape for splicing the factory buffed membrane joints.

2.4. Protection of Waterproofing Membrane and Treatment to parapet Walls

- Apply separation layer of 160 gsm geo textile layer over the membrane as separation layer.
- Apply 3:1 sand-cement screed with 1 in 100 slopes to ensure proper drainage of the water to the drain points. Minimum thickness of the screed should be 40 mm.
- Prepare groove in the screed at every 3 square meter and fill the groove with PU sealant.
- The same sealant application should be done at the tuck level groove of the membrane in the parapet walls.
- The remaining portion of the parapet walls should be treated with two coats of Waterproofingwale elastomeric acrylic waterproofing paint to minimize chances of rain soaking in the walls and penetrating to the base slab levels.

Before application of the membrane on the base slab, the drains, upstands / protrusions, corner fillets etc. must be covered using membrane for easy & durable installation .



- First arrange to lay the membrane according to datum line from one side of the roof, and fold back to half its Length.
- Use a chalk line mark or a masking tape on the area to be overlapped (Splicing Area) and the ends of the membrane (for 50-70mm) that has to remain clean.
- Unfold back the first half of the EPDM membrane carefully to ensure that there are no wrinkles during the sticking process. The sticking process can be done with a roller.
- An overlap of 50 - 70mm along the length or as specified is a must. A masking tape must be first stuck to the laid membrane. -----Use tape to adhere the overlapped membrane portions.
- Now, from the underside, remove the masking tape. Complete the buffing process for sealing the lap joints like in good old days people used to repair cycle tube . Apply adhesive upto 50mm portion . Please note that the overlapping in case of EPDM application is done by tucking it below the earlier membrane, it means towards the slope side 1st upper membrane then water flows directly on the below membrane. Lap joints to be doubly protected with 100mm strip of EPDM. Technical person of waterproofingwale will inspect this operation and will certify.
- Thoroughly roll on the overlapped area with a 50-70 mm wide metallic roller.

- If any damages occur due to unavoidable circumstances, apply a patch cut to the required shape with EPDM membrane itself, and stick with Adhesive . The patch must be 2" more on all sides of the damaged area.

Waterproofingwale -Application methodology for TERRACE

Mechanically clean the RCC slab and wall with wire brush / coir brush to free from all loose materials like dust, dirt etc. Make wattah / coving of 50x50 mm at all horizontal & vertical joints to avoid right angle turning. Seal all honeycombs, pin holes, joints, pipe outlets with Polymer Modified Mortar. Providing and laying waterproofingwale adhesive in presence of waterproofingwale technical person over the PCC/ Mother slab /bare surface and then unroll UV resistance EPDM membrane (Product warranty 25 years) 1.4 mm Thick and width Starting from 1.2 Mtr to 6 Mtr depending on the ease of execution (More the width less are joints) and length 30 mtr Make Waterproofingwale (Karma Yoga Vedanta) , Dr Fixit , Carlyle / BASF / SIKA/) with elongation of 300% , Cold flexibility Minus -50 degree - Conditions after exposure to 100 ppm ozone in air for 168 hours @(40 degree C) at 50%). Lap joints to be sealed with 50mm overlap through the special adhesive or tape system as per the recommendation of the manufacturer and termination to be done after taking EPDM upto the parapet wall and down 300mm on the other side and tuck it into the chase cut groove and seal it with aluminium flashings , Screw with EPDM washers and gasket , Coating the EPDM by another layer of elastomeric acrylic waterproofing paint on top of membrane with proper application method, Slope to be maintained at 1" per 10' length. Dressing of Outlets and drainage pipes to be done with EPDM only. Carry out pond test by ponding water on the EPDM for a minimum 7 days.

Installation Handbook is given to our authorized Applicator/ contractor.

Suggested Tools Required For Installing Waterproofingwale (Karma Yoga Vedanta) EPDM Membrane

Sr No	Particulars	Quantity
1	Broom	1
2	Empty Tin	4
3	Good Quality Brush (4" Size)	2
4	Good Quality Brush (2" Size)	2
5	Line Dori/Thread For Marking	100 meter
6	White Powder/Chalk	1

7	Measuring Tape (3 Meter)	2
8	Measuring Tape 15-30 Meter	1
9	Big Scissors	2
10	Hack Saw Blade Knife	4
11	SS Roller (2" Ø)	2
12	Wheel (2" Ø. See Picture Below.	2
13	Sharp Wheel (1" Ø) See Picture Below.	2
14	Clean Pieces Of Cloth For Cleaning The Membrane	2
15	Cotton Liner Fabric Length: 40 meters Width 1.5 meter	1
16	Rubber Wiper (Minimum 12"/24" Width) See Picture Below	2
17	Semi-Skilled Labour	3
18	Helper	2
19	Supervisor	2
20	Toluene For Cleaning The Membrane	10 liters
21	Sander Machine. See Photo Of The Machine Below	1
22	36 Grit And 60 Grit Sand Paper For Buffing The Membrane	4 each
23	Vacuum Cleaner (Industrial Type)	1
24	Hand Held Blower	1

Rubber
Wiper
Sander
Machine
Roller
Wheel