1. APP / SBS MODIFIED BITUMEN BASED MEMBRANES FOR TERRACE WATERPROOFING

DESCRIPTION

Polymer-modified bitumen waterproofing membranes are manufactured from rich bitumen & select polymers blended together. It is used for waterproofing of building roofs of all types, basements, foundations, swimming pools & water retaining structures because it has excellent heat resistance & cold temperature flexibility. The polymer-modified bitumen is then coated on to a dimensionally stable nonwoven polyester/ fiberglass carrier to obtain high tensile strength, tear & puncture resistance.

FEATURES & BENEFITS

- ❖ Uniformity – Torch shield is self-finished membrane provides joint less monolithic surface & provides excellent watertight solution.
- ❖ Strength – High tensile strength, tear & puncture resistance properties makes it highly durable.
- ❖ Vapour barrier – It is an impermeable membrane with less water absorption properties protects, the structure from weathering.
- ❖ Performance stability – Withstands thermal & structural stresses effectively without any fatigue, improves performance.
- ❖ Ease of application - Easy melting & fixing thus saving on usage of expensive gases. Can be laid quickly & easily.
- ❖ Eco-friendly - Safe & environment friendly.
- ❖ Durability - Does not undergo early ageing thus provides long life durable membrane.

METHOD OF APPLICATION

This application procedure is a standard guideline for using the 3 & 4 mm membranes only, which may slightly vary upon the site conditions & different application areas. For application method for 1.5 & 2.0 mm.

A. SURFACE PREPARATION:

Clean & remove dust, dirt, loose particles and unsound substrate. Make surface smooth, even & free from local depressions with polymer-modified mortar.

B. PRIMING:

Apply one coat of solvent based bitumen primer on cleaned & leveled surface @ 3-5 sq. mtr /ltr per coat.

C. APPLICATION:

- ✓ Unroll the APP Membrane Roll after application of primer.
- ✓ Align the APP Membrane Roll correctly & re-roll it in alignment before torching.
- ✓ Use gas burner to heat substrate & underside to softening points. When the embossing disappears, roll forward & press firmly against substrate to bond from the lower end towards the higher end.
- ✓ Keep overlap margin for minimum 100 mm.
- ✓ Heat both the overlaps & use round tipped trowel to seal overlap. Excess compound should be smoothened & Pressed into seam using hot trowel.

✓ All angles & abutments up stands should be sealed with extra care to ensure perfect bondage. Seal the edges well into grooves & protect with a Polysulphide sealant.

✓ APP Membrane applied all over the terrace and finished with aluminum paint for non-foot traffic area. For foot traffic area, overlay with concrete screed mortar.

D. PRECAUTIONS & LIMITATIONS:

- Any naked flame should be kept well away from gas cylinders.
- When ignited the APP Membrane should be watched at all times.
- The torch should not be rested on finished roofing.
- Extreme care should be taken when working near combustible materials or items which might be scorched by the gas flame.
- Not to be applied in extreme cold climatic conditions (below 5OC).
- Not to be applied on damp/wet areas & areas subject to moisture restoration.
- Do not overheat the APP membrane i.e. avoid heating when it starts smoking.
- The bleeding should be at least 10 to 15 mm on the edges and should be finished with hot trowel.
- The moisture content on the surface should not exceed 6% to overlay the membrane.
- Use of a Solvent Bitumen based primer is a must. For better result, use Primer.

MODULE - C (STRUCTURAL REPAIRS ITEMS)

1. EXTERNAL STRUCTURAL REPAIRS TO BEAMS & COLUMNS BY POLYMER BUILT UP TECHNIQUE

a. Break open the structural member to expose reinforcement steel & dispose off the debris arising from the same.

b. Clean the exposed reinforcement steel thoroughly by removing rust / scaling by chiseling / tapping / wire brushing.

c. Provide & apply rust converter to the exposed steel & allow drying for 24 hours.

d. Provide & apply protective coat of slurry of Polymer Emulsion: cement (1: 1½) to the reinforcement steel.

e. Build up damaged RCC member to its original shape in layers of 3/4" each by polymer modified cementitious mortar in the following proportion.

Approved Polymer	10 Kg
Cement	50 Kg
Quartz Sand	150 Kg
Graded Metal	50 Kg
Water	**As directed**

f. Before every layer a bond coat of slurry of Polymer Emulsion : cement (1:1 ½) to be applied to the entire section.

NOTE :- Polymer consumption will be strictly reconciled at 0.200 kg per sq.ft. of the work carried out. Basic rate of Polymer to be taken as Rs.200/- per kg.

NOTE :- The measurement of this item shall be made in M^2, which is inclusive of layers upto 40mm thickness & shall include cost of all operations viz. a - f. An additional layer of polymer to be applied to sections over and above 40mm thickness.

2. APPLICATION OF RUST PASSIVATOR: The entire surface of the exposed reinforced concrete element should be thoroughly cleaned. The reinforcement rods must be thoroughly cleaned using a chisel, scrapper, and wire brush and emery paper. The rust passivator is to be applied carefully on the

exposed dry surfaces of the reinforcement rods with a brush or cloth. The passivator must be applied as per the manufacturer specifications .Allow air drying for 24 hours before ant further treatment is done on this after cleaning. Measurement shall be taken of the entire chiseled area where reinforcement rods are exposed and rust passivator applied.

3. NON STRUCTURAL R.C.C. REPAIR USING NON POLYMER MORTAR (KHADI EMBEDDING)

4. APPLICATION OF MORTAR/CONCRETE

Preparation of surface:

A good base or foundation shall be prepared for successful application of mortar/concrete.
All unsound/weak concrete material shall first be removed by the contractor up to the required depth as directed by engineer. Chipping shall continue until there are no offsets in the cavity that will cause an abrupt change in the thickness of repaired surface. No square shoulders shall be at the perimeter of the cavity all edges shall be tapered. The final cube surface shall be critically examined to make sure that it is sound and properly shaped.

a.) After it has been ensured that the surface which mortar/concrete is to be bonded is sound, it shall be cleaned off all loose and foreign material by means of sand blasting or stiff wire brushing as instructed by engineer. All dust and loose particles resulting from such pre-treatments shall be removed oil free air blast.

b.) Bonding slurry and application:
The contractor shall wet down the surfaces ensuring that they are saturated but free of surface water. Bonding slurry shall be prepared by mixing thoroughly 2 parts of cement to 1 part of water to a lump-free consistency.

c.) Application of cement mortar/concrete:
Cement shall be carried out in efficient concrete mixer. However, the engineer may allow hand mixing in case total weight of mix per batch is less than 50 Kgs. In case of hand mixing, the contractor shall mix 10% additional cement.

The mixer shall be charged with the required 4 quantity of coarse aggregate (where used); fine aggregates, cement and premixing shall be carried out for approximately half a minute. Required quantity of water shall then be added and further mixing shall be carried out for 1 to 1-1/2 minutes to obtain working consistency. Care shall be taken to avoid excessive water.

Rendering Cement mortar/concrete shall be done after applying bonding slurry to the prepared surface while the bonding coat is still tacky. After application of mortar/concrete the surface shall be closed using a wooden float and steel trowel giving it a smooth finish.

5. CURING:

New concrete shall be maintained damp for a period of 2 weeks minimum. . New plaster shall be cured at least 3 times a day for a period for a not less than 10 days. The 1st coat of plaster shall be cured for a period not less than 3days. If required the surface shall be maintained damp using a wet hessian cloth.

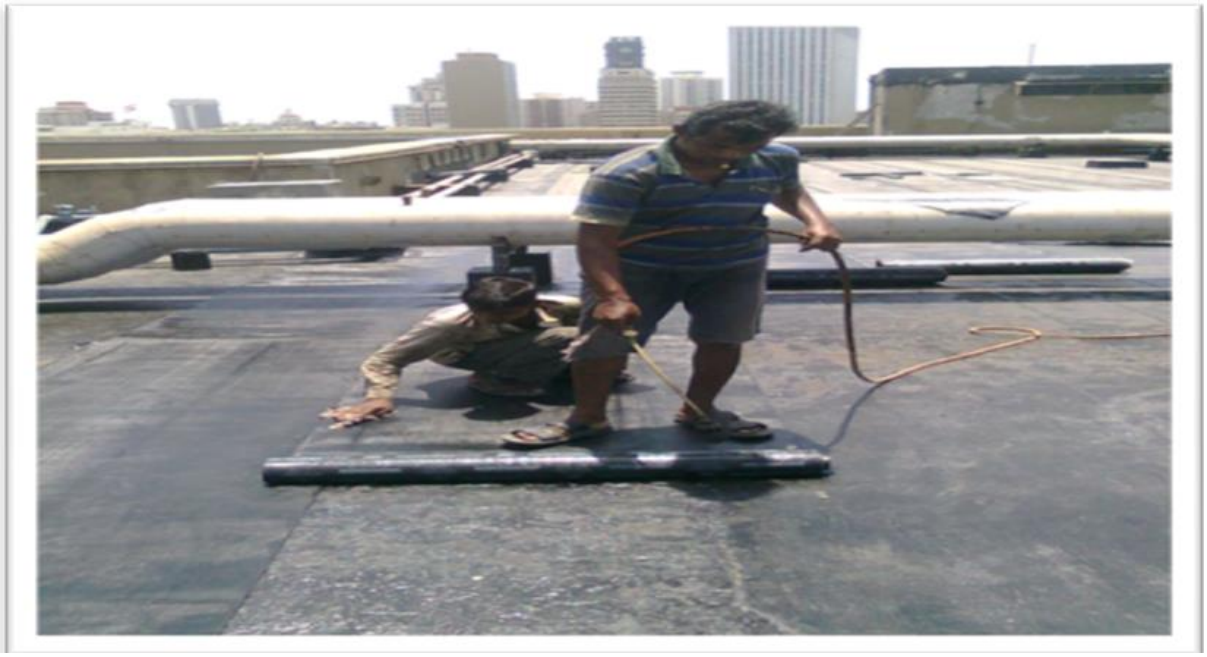
6. CONCRETE REPAIRS USING SBR / POLYMER LATEX

Surface preparation of the area to be treated is very important. Mildly wet the concrete surface so that the concrete is saturated but the surface is free of water. Apply a bond coat of cement and SBR as per the manufacturer specifications. While the bond coat is still wet, carefully apply and compact the desired SBR modified cementitious repair mortar as per the manufacture instructions in layer so as to reinstate the concrete element. The sand used in the mortar shall be washed clean and of the required fineness.
On vertical surface coats shall be applied up to 25mm thickness provided slumping does not occur. On larger flat surface coats should not exceed 6mm in thickness though several coats may be applied in

quick succession – each coat setting of before the next is applied. When slumping occurs scratch the firm surface and allow to dry overnight and then repeat the process finish off the final coats. Mildly moisture cures for 24 hours and then allow to air dry.

Measurement shall be taken for actual area covered by the repair mortar. In case the thickness is more than that specified in the Bill of Quantities, additional such measurement will be taken if the additional thickness is applied with a gap of 24 hours.

No measurement for additional bond coats shall be taken when required for layers to achieve the thickness specified in the Bill OF Quantities



Dr. Fixit New coat

Method of Application

1 SURFACE PREPARATION

}} Prepare the surface thoroughly by cleaning, washing and removing dust, dirt, oil, grease and loose particles.

}} Ensure that the roof slope is a minimum of 1 in 100.

}} In existing old terraces such as brick-bat-coba or screeds, the substrate must be checked for its soundness.

Damaged or hollow portions, sharp edges, etc. must be cut and repaired with a polymer-modified screed.

Surface cracks must be filled with Dr. Fixit Crack-X or Dr. Fixit Unifiller or polymer-modified mortar in case of

Wider cracks.

}} Bitumen based waterproofing treatments must be completely removed by mechanical scarification or by any other effective mechanical means.

2 APPLICATION

}} Apply one coat of Dr. Fixit Prime seal (diluted with water in the ratio 2:1) at the rate of 10-12 m2 per litre. Allow it to dry for 2-3 hours.

}} Apply the first coat of Dr. Fixit New coat at the rate of 2 m2 per litre and allow it to dry before taking up the second and third coats, the rate of application being the same.

}} The sequence of Colours viz-a-viz pink, green and grey can be decided depending on the desired `top coat colour.

}} In case only two colours are being used, ensure that the colour of the first and the third coat are the same.

This would ensure correct consumption of material that will deliver a total DFT of 1 mm.

Drying time between coats will be 6 to 8 hours.

}} Ensure that the primer and the 3 coats of Dr. Fixit New coat totally achieve a minimum thickness of 1 mm DFT.

}} Allow the system to air cure for 7 days minimum.

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Applying Polymer Modified Treatment

Application of Rust Passivator

After Applying Polymer Modified Treatment