

21379/Spec Ph-III/P&S/101/MAP

29 Jan 2013

(All PMs)

SPECIFICATIONS FOR WATER PROOFING IN RCC ROOFS

1. Ref this Headquarters letter No 21378/Vendor Ph-III/P&S/03/MAP dt 29 Jun 2012.
2. Given in the succeeding sub paragraphs are the specifications for water proofing for RCC Roofs for the future projects of MAP Phase-II and Phase-III:
 - (a) **FOR STATIONS WITH NORMAL RAINFALL:** Water proofing treatment to exposed flat roof/terrace and roof of staircase hall, machine room and mumty shall be done as under:
 - (i) Clean the RCC slab surfaces including side's upto 300 mm high by wire brush, raking and cleaning of construction joints, if any.
 - (ii) Apply a coat of neat cement slurry admixed with approved integral liquid water proofing compound conforming to IS: 2645 as per manufacturer's recommendations over the RCC slab and sides upto 300 mm high.
 - (i) Lay 20 mm thick layer of cement mortar of mix 1:4 (1 cement: 4 coarse sand) admixed with approved liquid water proofing compound conforming to IS: 2645 and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.
 - (ii) Lay a layer of broken bricks/ brick bats (coba) 25 mm to 80 mm size with 50% cement mortar 1:4 (1 Cement: 4 coarse sand) admixed with approved integral liquid water proofing compound conforming to IS: 2645 to required slope.
 - (iii) Coving of radius 80 mm in cement concrete 1:2:4 admixed with integral liquid water proofing compound and finished with cement mortar 1:4 (1 cement: 4 coarse sand) admixed with approved integral liquid water proofing compound conforming to IS: 2645 is to be provided at the junction of horizontal surface & side walls.
 - (iv) After two days of curing apply second coat of cement slurry admixed with approved integral water proofing compound conforming to IS: 2645.
 - (v) Finish the surface with 20 mm thick jointless cement plaster 1:4 (1 cement: 4 coarse sand) admixed with approved integral liquid water proofing compound conforming to IS: 2645 including over the coving upto 300 mm height on sides walls and finishing the surface with trowel with neat cement and making with 300x 300 mm false square.
 - (vi) Average thickness of the above treatment shall be 125 mm and minimum thickness at Khurras shall be 65 mm.

(vii) **Khurra.** Khurras shall be provided to all inlet points of rain water pipes 450 x 450 mm with a minimum thickness of 65 mm in brick bat coba as described herein before in Para (a) (i) to (vii) including rounding the edges and making finishing the outlet complete.

(viii) The proportion of approved integral liquid water proofing compound conforming to IS: 2645 to be used in respect of cement shall be as laid down by the manufacturer of the particular water proofing compound.

(ix) The whole treated portion shall be flooded with water for two weeks for curing and testing. In case any leakage/seepage is noticed then the affected area shall be rectified and retested to the satisfaction of the Project Manager and DEPMC.

(b) **FOR STATIONS WITH HEAVY RAINFALL:**

(i) 3mm Thick with Non-Woven Polyester Matt. It is prefabricated five layered black finish water proofing membrane comprising of centre core of 50 to 60 gsm fibre matt/170 gsm non- woven polyster matt sandwiched on both side by APP polymer modified bitumen which is protected on both sides by 20 micron thermofusible polyesthylene sheet. Composite thickness of the membrane including all five layers shall be 2/3mm with glass fibre matt and 3 mm with non- woven polyester matt manufactured by reputed manufacturer and as specified. It is available in 1m width and variable length.

(ii) Important physical and chemical parameters of the membrane shall be as given in the table:-

SI No	No of Layers	Thicknes s	Elongation 23° C in longitudina l direction	Joint Strength in longitudina l and Transverse direction	TEAR STRENGTH IN LONGITUDIN AL AND TRANSVERS E DIRECTION	Softening Point	Cold Flexibility
1	2	3	4	5	6	7	8
1.	FIVE LAYERED REINFORCED WITH FIBRE GLASS	2mm	3 N/5 cm	350/300 N/5 cm	60/80 N	150°	-2°
2.	FIVE LAYERED REINFORCED WITH FIBRE GLASS	3mm	3.3 N/5 cm	350/300 N/5 cm	60/80 N	150°	-3°
3.	FIVE LAYERED REINFORCED WITH NON-WOVEN POLYESTER MATT	3mm	3mm	40/50 N/ 5cm	650 N/ 450 N/5c	150°	-2°

(iii) When tested in accordance with astm, D-5147 where proprietary brand Atactic polypropylene modified black finished is proposed to be used by the contractor they shall conform to all respects to the specification in the preceding paras. However, contractor should get the work done through authorized applicator. The material lying of app shall be done all as per SSR para 11.44.1 to 11.44.5 of SSR Part – (i) 2009.

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