METHOD STATEMENT

iPLUS 4E

SBS MODIFIED TORCH APPLIED BITUMEN MEMBRANE

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SECTION I: GENERAL INSTRUCTIONS

a) Store the materials in a dry and shaded place. The rolls should not be stacked but kept in an upright position.
b) Ensure that the surface temperature where the membrane will be applied is kept within the temperature range of +10° C to +45° C.

The following Equipments are required during application:

a) Protective clothing: Gloves, face mask, overalls, and goggles.
b) Flame torch and LPG cylinder.
c) Cutting knife.
d) Brush /roller.
e) Steel scrapper.
f) Cotton waste.
g) Solvent cleaner.
h) Measuring tape.

SECTION II: APPLICATION INSTRUCTIONS-FOUNDATIONS

Application of membranes should be avoided in case of extreme weather conditions like sand, storm or rain. The ambient temperature during application should be between 4° C and 45° C.

Surface Preparation:

- The substrate must be free of all dirt, oil grease and loosely adhering particles and made absolutely dry. Any dew settled or concrete dampness should be thoroughly cleaned using a dry cloth. Honeycomb and spalled concrete is to be repaired and all nail heads and protrusions that are likely to puncture the membranes must be removed.
- Internal corners should have a 45 degree fillet. Place a 200 mm wide strip of the membrane centered along the corner as a reinforcing strip. External corners should have a 20mm chamfer. Place a 200 mm wide strip of the membrane centered along the edge as a reinforcing strip.

Priming:

- All concrete surfaces will then be primed with **iKote SB41** (solvent based bitumen primer) as per ASTM D 41 / BS 3416 @ 4-6 m²/lt. The primer has to be touch-dry prior to the application of the waterproof membrane.

Application- Horizontal Areas:

- Unroll the full roll of **iPlus 4E** and align it for torching.
- Once the roll is properly aligned, roll back the membrane and start torching the underside of the roll and as soon as the bitumen starts melting, press the membrane from the top so that it sticks to the concrete surface. The process of torching and unrolling is to be done simultaneously.
- Provide a lap of 100 mm overlap on the sides of adjoining sheets. Overlap should be heated from the top and resealed with trowel to ensure seam integrity.
- All installed areas of **iPlus 4E** should be protected as soon as the membrane has been laid. A 50mm thick protective screed is to be laid on top of the applied membrane which will be extended up to the end of the blinding. Wherever vertical walls are joining with the horizontal surface, a 200 gauge Polythene sheet shall be laid before the screed is laid. The polythene sheet and the screed should be removed prior to the commencement of the vertical waterproofing and a cement/sand mortar angle fillet is to be provided.

Application-Vertical Area:

- Provide a 200 mm wide reinforcing strip of **iPlus 4E** over the fillet.
- Apply a 1 m wide **iPlus 4E** membrane longitudinally over the vertical areas starting from the bottom of the raft.
- Install the membrane in vertical direction preferably till the top of the ground level, so that unnecessary joints are avoided which tend to be the weak spots for water leakage.
- The membrane will be finished on the top by tucking into a groove cut in the concrete and sealed with bitumen mastic.

Membrane around Pipes

A cement sand fillet (50mm x 50mm) is to be provided all around the pipe. A 400 mm wide reinforcing strip will be laid after applying the primer. The joint of the membrane with the pipe will be sealed with Bitumen rubber mastic.

PROTECTION OF MEMBRANES

iShield (Asphaltic protection boards) 3.2mm/3.5mm/4mm/6mm (as per project specification) is to be used to protect the membrane from any puncture due to ongoing site activities or at the time of backfilling. **iShield** can be fixed in place by using a twin side self adhesive strip, contact adhesive or by torching.

Fixing by Twin strip:
Cut out small patches of 5inch x 5inch. Peel off the release film from one side of the twin strip and spot bond it to the protection board at various places. For heavier boards cut out larger patch sizes for better adhesion. Fix the board on the membrane and press firmly. Supports/props can be used to keep the boards in place till the adhesive is strong enough to hold the board.

Fixing by Contact Adhesive:
Apply the adhesive on the entire surface of the board. Press the board immediately onto the substrate. Supports/props can be used to keep the boards in place till the adhesive is strong enough to hold the board.

Fixing by Torch:
Torch the bottom of the protection board until the asphalt starts melting softly. Press the board immediately onto the substrate. Supports/props can be used to keep the boards in place till the bond is strong enough to hold the board in place.

SECTION III: APPLICATION INSTRUCTIONS-ROOFS

Application of membranes should be avoided in case of extreme weather conditions like sand, storm or rain. The ambient temperature during application should be between 4° C and 45° C.

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Surface Preparation:

- The substrate must be free of all dirt, oil grease and loosely adhering particles and made absolutely dry. Any dew settled or concrete dampness should be thoroughly cleaned using a dry cloth. Honeycomb and spalled concrete is to be repaired and all

  nail heads and protrusions that are likely to puncture the membranes must be removed.
- Internal corners should have a 45 degree fillet. Place a 200 mm wide strip of the membrane centered along the corner as a reinforcing strip.

Priming:

- All concrete surfaces will then be primed with **iPlus SB41** (solvent based bitumen primer) as per ASTM D 41 / BS 3416 @ 4-6 m^2/lt. The primer has to be touch-dry prior to the application of the waterproof membrane.

Application- Horizontal Areas:

- Unroll the full roll of **iPlus 4E** and align it for torching.
- Once the roll is properly aligned, roll back the membrane and start torching the underside of the roll and as soon as the bitumen starts melting, press the membrane from the top so that it sticks to the concrete surface. The process of torching and unrolling is to be done simultaneously. Provide a lap of 100 mm overlap on the sides of adjoining sheets. Overlap should be heated from the top and resealed with a trowel to ensure seam integrity.

Application-Vertical Area:

- Provide a 200 mm wide reinforcing strip of **iPlus 4E** over the fillet.
- Apply the membrane on the up stand on the parapet up to the specified height and tucked into the groove cut and terminated.
- Aluminium flashing sheet membrane/metal flashing is to be fixed up to the required height on top of the waterproof membrane, tucked into the groove and then sealed with bitumen mastic followed by fixing of wooden batten.
- Water flood test is to be carried out for a minimum of 48 hours.
- The applied waterproofing membrane is then protected with a separation layer (Geo-textile membrane) followed by the insulation boards (Extruded/expanded polystyrene). The top surface is either finished with cement sand tiles or gravels.

MEMBRANE REPAIR

There is every chance of the membrane getting punctured due to the ongoing site activities. The damaged area should be patched with a piece of the same membrane which extends at least 2 inches from all the sides of the puncture. The area to be repaired should be primed with the bitumen primer and allowed to dry before carrying out the patching works.

HANDLING

iPlus 4E membrane comes in rolls of 1m width and 10 m in length. The weight of the roll varies from 30 -50 kg depending on the thickness. They are placed in up right condition on pallets. These can be unloaded either by forklift or other convenient means. Do not place the membranes near any sharp protruding edges or objects to avoid puncture or damage to the membranes.

STORAGE

The membranes have to be stored in shaded areas in upright condition with an ambient temperature lesser than 35° C or on wooden pallets neatly covered properly by any thick fabric like tarpaulin to avoid exposure to sunlight. Do not stack the membranes.

HEALTH & SAFETY

The membranes contains a very tacky bitumen compound which while handling can adhere to human skin. Such stains can be removed by using a cloth dipped in very light solvents. Refer product Material Safety Data Sheets for further details.

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