

UB11
METHOD STATEMENT
UNDER-GROUND TANKING SYSTEM
REVERSED TANKING

(1) PRE-INSTALLATION CONFERENCE

Prior to installation, a meeting shall be held at the job site to review the material selections, installation procedures, and co-ordination of waterproofing work with other trades.

Meeting shall include the general contractor, the roofing contractor, and other subcontractors whose work requires co-ordination with the waterproofing work.

(2) PREPARATION

Areas scheduled to receive the waterproofing system shall be inspected to ensure that work of preceding trades is completed satisfactorily.

Horizontal or Vertical surfaces shall be clean and free from water, oil, grease, debris, fungi, curing compounds and other harmful chemicals. They shall be brushed thoroughly to ensure that they are free from dust and sticking substances.

(3) INSTALLATION

(A) PRIMER (OPTIONAL)

Surfaces to receive primer shall be dry, swept clean and free from debris. Surfaces shall be coated uniformly with primer at the rate recommended by the manufacturer, primer shall be left to dry completely before applying the waterproofing membrane.

(B) WATERPROOFING MEMBRANE

Horizontal waterproofing layers shall be applied on blinding concrete, cured, fully dried, smooth and clean. Membrane must extend 200 mm min. beyond perimeter wall edges, with special double protection (PE sheet) for the extension areas, to ease the removal of protection screed upon execution of vertical surfaces and achieve continuity of tanking system

Horizontal membrane shall be **protected** by a screed layer, 30mm- 50mm thickness, laid onto 150 microns polyethylene sheet, with 150 mm overlaps

After RC raft is finished, **Vertical membrane** shall be applied loose laid/ semi bonded to a permanent non-structural brick wall, at the basement perimeter, and shall be secured at top edges to the structural walls at minimum 150mm from zero level.

Note: Due to project conditions, the permanent wall may be a brick wall, a diaphragm wall, or as specified by consultant.

Side laps of vertical membrane shall be staggered with those of horizontal membrane.

It is advised to apply the first layer of the vertical application prior to the second layer of the horizontal membrane system, in order to create the "overlap interlocking" and provide more efficiency for the joints.

Vertical membrane shall be protected by bituminous protection boards staggered and spot bonded to membrane. Protection boards are preferably taped to prevent fines from entering and puncturing the membrane.

If vertical membrane is applied in two stages, first stage top edges must be temporarily secured to wall with wood battens & nails, when proceeding work, a 150 mm min. lap shall be made in addition to staggering side laps of two stages.

- Membrane shall be installed according to manufacturer's recommendations.

- Side-laps shall be 8 - 12 cm, and end- laps shall be 12 - 15 cm.

- Second waterproofing layer shall be applied fully-bonded onto the first layer, at the same direction of rolls length, with shifting the side laps 0.50 meter in order to secure the membrane waterproofing system with maximum overlaps.

- Details such as expansion joints, penetrations, corners...etc., shall comply with manufacturer standard construction details, non-standard details shall be approved by the membrane manufacturer

(C) PILECAPS TREATMENT

1. Protrusions shall be demolished from pile heads, to a level 3- 5 cm above blinding concrete level.
2. A Non shrink Grout, 3-4 cm thick, shall be used to level pile cap heads.
3. Apply 2 coats of cementitious waterproofing on top and sides of pile head.
4. Apply a second layer of 3- 5cm grout on top of the pile cap, to secure the waterproofing membrane.
5. A Volclay rod shall be applied around the pile cap perimeter, to seal the joint between pile caps and blinding concrete layer.
(Volclay rods has to be applied in completely dry conditions, otherwise it shall not be used.)
6. Triangular cants, with suitable cement additive to mortar, shall be applied around pile cap perimeter to facilitate membrane application.
7. The waterproofing base membrane shall be fully bonded to the blinding concrete, and shall extend to touch the external surface of pile reinforcement. The second waterproofing layer shall be fully bonded onto the first.

(4) QUALITY CONTROL

The contractor shall always ensure the compliance of waterproofing system with contract requirements.

The contractor representative shall be a qualified engineer registered at the *Egyptian Syndicate of Engineers* and having experience in this field, and shall be responsible for the execution of work specified in this section.

Any work that does not comply with contract specifications, shall be removed and corrected at once.