

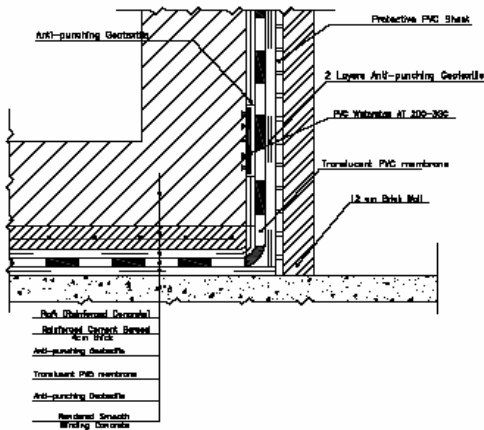


Cairo Metro Line 3 (Raft Level) - Egypt

Project Name: Cairo Metro Line 3 Phase 1&2
Scope: Unndergrounds Watertightness Works
City: Cairo
Country: Egypt
Main Contractor: Egyptian French Joint Venture For Civil Works
Applicator: Sodeco Specialties S.A.E
Construction Period: 2008 -2014
Owner: National Authority For Tunnels Egypt



Construction site - Cairo Metro Line 3



Technical Information

Products Used: PVC membrane 2.00mm thick
Geotextile

Areas Treated: 65,000m²

❖ Geotextile Material

- Non woven polypropylene geotextile layer. It is a protection felt used to protect the PVC geomembrane from damage during metal work & backfilling.

❖ PVC membrane Renolit Alkorplan 35036

- for horizontal & vertical concrete surface
- Homogeneous, translucent, flexible, polyvinyl chloride (PVC) geomembrane.
- Applications: waterproofing for tunnels, basement structure & tanking works.

❖ PVC membrane Renolit Alkorplan 35020

- Is Homogeneous, flexible, Polyvinyl Chloride (PVC) protective sheet.
- It is a protective sheet used in vertical walls to protect the PVC geomembrane.

The main purpose of watertightness is to keep the raft & the retaining wall dry & away from any moisture.

Raft :

1. The bedding concrete layer to be executed on the horizontal surface should be smooth and leveled to receive the P.V.C layer.
2. Install a layer of non-woven Geotextile with a weight of 350gm/m² on the horizontal surface.
3. The P.V.C membrane (Alkorplan Type 35036) for the foundation - 2mm thick - shall be installed on top of the non-woven geotextile.
4. The P.V.C membrane is installed using a wedge welding allowing 80mm overlap & tested with 2bars pressure.
5. Leister hot air welds allows for 50mm overlap at corners & edges.
Spark tests & vacuum tests are used to ensure the quality of welds.
6. Fixing the P.V.C waterstop for Construction Joints & Expansion Joints.
7. An upper protection layer of non-woven polypropylene Geotextile with a weight of 350gm/m² shall be applied on top of P.V.C. membrane.
8. Pour a screed – 4cm thick –and reinforced with wire mesh 5 Ø 6 mm/m².

Retaining walls

1. The concrete layer to be executed on the vertical surface should be smooth and leveled to receive the P.V.C layer.
2. Fixing the vertical P.V.C waterstop for Construction Joints & Expansion Joints on the wood work before pouring the concrete for the vertical walls.
3. Install a layer of non-woven Geotextile with a weight of 350gm/m² on the vertical surface.
4. The P.V.C membrane (Alkorplan Type 35036) for the vertical wall - 2mm thick - shall be installed on top of the non-woven geotextile.
5. The P.V.C membrane is installed using a wedge welding allowing 80mm overlap & tested with 2bars pressure.
6. Leister hot air welds allows for 50mm overlap at corners & edges.
Spark tests & vacuum tests are used to ensure the quality of welds.
7. Two protection layers of non-woven polypropylene Geotextile, each with a weight of 350gm/m² shall be applied on top of P.V.C. membrane as protection.
8. Install the protective P.V.C sheet (Alkorplan Type 35020) for the vertical wall – 1.5mm thick - on top of the non-woven geotextile.
9. Install the brick wall – 12cm thick – as a vertical protective layer.

