

METHOD STATEMENT

1 SCOPE

This document covers the application of **MasterSeal 705DW** PVC waterproofing membrane system as an internal lining for potable water tanks. All materials and method involved in the execution of the waterproofing work is described.

2 RESOURCES

2.1 Materials

| Item | Description of Material |
|-------------------------|---|
| MasterSeal 705DW | PVC membrane, intended to hold liquids for human consumption. |
| MasterSeal 910 | Hydrophilic water bar |
| Geotextile | Polypropylene non-woven geotextile, minimum 350 g/m ² |
| Metal strip | Metal strips with pre-punched holes for screws (Width 30mm; Thickness min. 1.2mm) |

2.2 Tools and Equipment

| Item | Equipment Description |
|------|---|
| 1 | Triac hot air manual gun |
| 2 | 40 and 20 wide hot air gun nozzles |
| 3 | Rubber pressure roller 40mm wide |
| 4 | Membrane chamfering tool |
| 5 | Wire brush |
| 6 | Concrete drill machine (with screw + anchors) |
| 7 | Hammer and Screwdriver |
| 8 | Measuring and cutting tools |
| 9 | Mixing drill with suitable mixing paddle for grouts |
| 10 | Cleaning solvent and rugs |

3 PROJECT EXECUTION STRATEGY / SEQUENCE OF WORKS

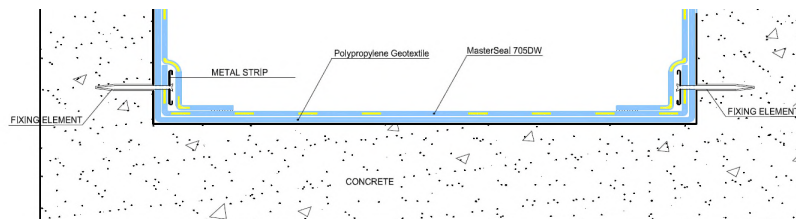
3.1 MasterSeal 705DW PVC Waterproofing Membrane – General Application

3.1.1 Substrate Preparation

- Substrates must be regular and smooth, free of loose aggregate and sharp protrusions.
- All sharp edges to be rounded.
- Surface should be sufficiently dry, standing water must be removed.
- Substrates do not require priming prior to installation of the system.

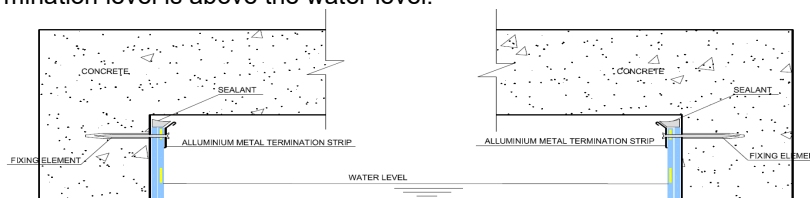
3.1.2 Horizontal Application

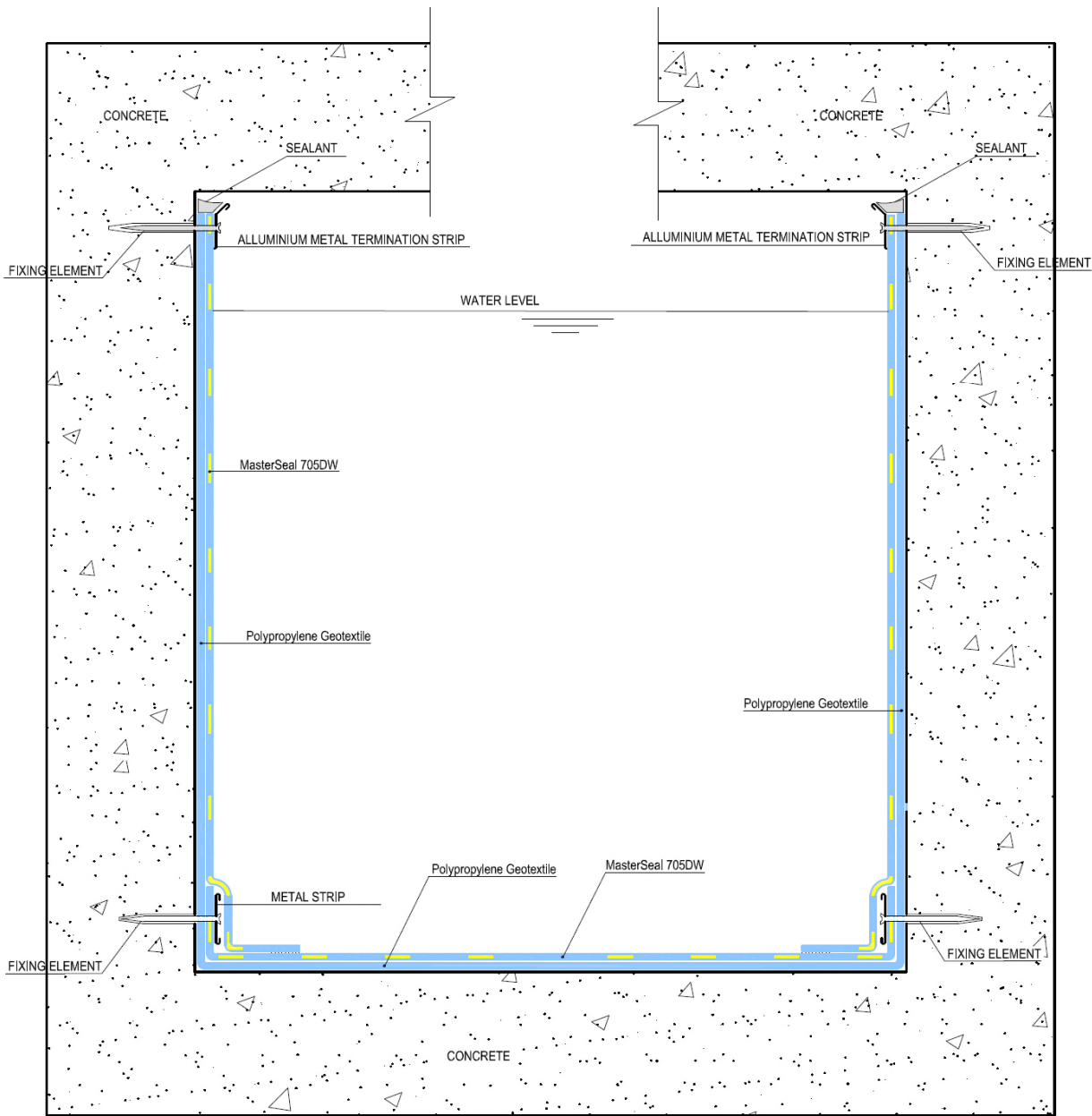
- Lay a cushion of minimum 350 g/m² non-woven geotextile with 50-100mm overlap and spot welded by hot air gun to keep the overlap in place.
- Prepare the PVC membrane, **MasterSeal 705DW** as per required size to cover each working zone.
- Start installing membrane from the floor, terminating the PVC membrane on the vertical skirting at 100mm using mechanically fixed metal strips.
- Weld the PVC membrane overlaps using a manual seam welder. The overlap is between 80-100mm. Clean the overlap using dry or damp cloth. If contaminants do not go off, clean the PVC membrane with cleaning solvents.
- Corners should be folded and formed from membrane by manual welding, applied with nominal hand pressure to ensure a close fit to the substrate profile and avoid air pockets under the membrane.
- Chamfer and patch all overlap intersections by welding, using a piece of membrane with minimum size of 100mm by 100mm.



3.1.3 Vertical Application

- Install geotextile with 50-100mm overlap and spot welded by hot air gun to keep the overlap in place.
- Install the PVC membrane on the wall, secured from the top using metal strips.
- Extend the vertical PVC membrane down the horizontally installed membrane, welded at 80-100mm width using a manual seam welder.
- Side overlaps of vertical membrane sheets shall be mechanically fixed onto the substrate using metal strips. Subsequent sheets shall go over the previous sheet to cover the metal strip. Weld the overlap beyond the metal strip at 80-100mm width using a manual seam welder.
- The vertical PVC membrane shall be terminated on the highest possible point of the wall using aluminum flashing. The tip of flashing shall be bent and sealed with **MasterSeal NP 473U**. Ensure that the termination level is above the water level.

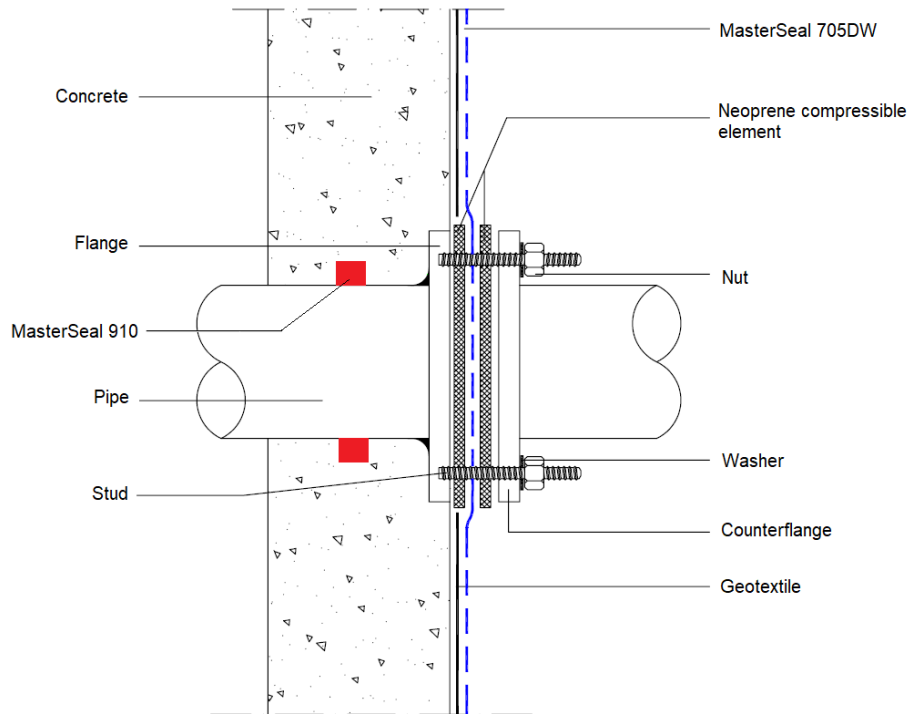




General Section Detail

3.2 Pipe Penetrations

- For pipes passing through the concrete, a flange connected with the pipe should be provided with a counter flange on the internal surface of the tank to allow mechanical clamping of the PVC membrane.
- **MasterSeal 910** hydro swelling waterbar should be placed around the pipe at the middle section of the concrete.
- During installation of PVC membrane, cut an opening on the sheet and let the pipe go through.



3.2.1 Recommended Machines and Tools

Manual welding machine

- Hand held welding gun type Leister Triac S, or type Leister Triac PID, 120/230V, (adjustable temperature).
- Hot air nozzles 40mm and 20mm all purpose-nozzle.
- Hand held pressure (Silicone) roller with ball bearing width 20mm and 40mm
- Reserve heating element



4 INSPECTION AND TEST PLAN

4.1 Substrate Inspection (Prior to Geotextile Installation)

- Substrates must be regular and smooth, free of loose aggregate and sharp protrusions.
- All sharp edges must be rounded.
- Surface should be sufficiently dry, standing water must be removed.

4.2 Geotextile Inspection (Prior to PVC membrane installation)

- Geotextile should be laid tight to substrate.
- Geotextile overlaps should be joined by hot air gun to keep it in place.
- No loose materials / debris or any unnecessary items over the geotextile.

4.3 PVC Membrane Visual Inspection (Membrane surface and manual welding)

- Visually check the PVC membrane from damages.
- Internal and external corners details should be properly placed and welded.
- Use probe tester or screwdriver to check integrity of manual welds, focusing on burn marks and gaps in welding. Repair if weak points are found.

4.4 PVC Membrane Damage Repair

- Damaged area should be patch welded with a piece of PVC membrane extending at least 100mm around the damage.
- Clean the PVC membrane with damp cloth prior to repair. If contaminants do not go off, clean the PVC membrane with cleaning solvent.

5 STORING AND PROTECTION OF MATERIAL

Materials to be stored in a controlled A/C container:

- Hydrophilic water bar **MasterSeal 910**

Materials to be stored in a shaded area, raised from the ground using pallets or similar.

- PVC membrane **MasterSeal 705DW**
- Geotextile Non woven geotextile

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