

Viking Below Ground Tanking Methodology V1.2

PURPOSE

The purpose of this document is to provide the main contractor with a good understanding of how to prepare the correct site conditions for waterproofing below ground from foundation to wall. As getting it wrong can prove costly to repair at a later stage.

Often main contractors haven't considered well enough how to plan a below ground waterproofing project creating uncertain detailing for waterproofing.

Weather and site conditions will play a big part in the success of any project. Yet these conditions are manageable. It is also important to know that all products will only work if applied in the correct conditions. Use the below guidance to manage site conditions.

Viking CHECKLIST: Below Ground Tanking Site and Substrate by BUILDER will also provide practical guidance for site and substrate preparation.

Achieving the right result requires good planning, communication with all affected trades, an understanding of how the Tanking system works and how to apply it.

SAFETY

Working between solid walls and unstable ground can be deadly. It is a Work Safe requirement to shore-up all banks, batter or benched groundwork. Securing covers over the sloping groundworks will provide safer working conditions and minimise delays which may be caused by collapsing groundworks behind the wall.

Working behind walls can also be considered as confined space work; with requirements that must be met to comply. Viking do provide water-based substrate primers if required.

SITE WATER

Ground water will need to be removed. The use of a sump-pump, channel drains and some holes to sit the pump in, will help control and remove excess water.

No contractor can do their best work in mud. A layer of drainage metal over muddy areas provides a good working surface while allowing ground water to travel below to the sump-pump. This is especially important to the outside of form work where many trades may need access behind the walls after the footings are poured.

SUBSTRATE - UNDER-SLAB

Ensure the tidy slab of site concrete for the Under-slab tanking is a minimum of 45mm thick for any site with springs or below the water table. For sites with no springs or above the water table compacted 25mm sand or fines such as gap 7 is acceptable. Refer to site specific specifications.

This ensures no protruding objects will pierce the membrane and keeps mud and water from contaminating sheet laps during installation.

BOXING / FORMWORK

Footings require boxing/formwork installed on both sides providing the membrane correct form for secure sheet joins.

Allow 4 days minimum before removing formwork. Never removing the boxing/formwork until the Tanking membrane has been secured onto the top of the poured footing. If the concrete is too green to stick onto ramset some strips of timber or ply through the membrane to secure to the footing. Leave this in place until the tanking installer is joining the wall membrane to the footing.

Failure to do this critical section correctly will likely lead to failure. Often if the boxing/formwork is removed without securing the tanking to the top of the footing it drops into the mud or water and stones get caught between footing and membrane. Making the process to later install to the footing a very difficult process.

ANGLE FILLET

If the wall is set back from the footing edge a minimum 20mm angle fillet is required at the wall to footing junction. Use either a mortar fillet or ideally a bituminous fillet (IMT603 Bituminous Angle Fillet 25mm x 25mm) as this offers additional waterproofing at a critical junction.

CLEANING

New Footings will often have a layer of laitance or dirt which must be removed. The best way to do this is with a wire brush. Then sweep with a soft brush to remove the dust. Do this on the walls as well.

BLOCK

Blockwork must all be Flush Pointed with no voids or sharp protrusions.

PRIMING

Once the walls go up and have been cleaned, they will require priming. Ensure you have the correct primer for the Tanking system being installed as these may differ. It is also safer for the installer if there is good air flow behind the walls.

TERMINATION POINTS

If the Tanking membrane is not properly terminated immediately water will run between the wall and the membrane which would appear as bubbles in the membrane or a leak inside the building. If the wall is block and erected in stages fold the membrane onto the top block by 30mm then the next course can be laid on top of the membrane. This creates a chase detail that is overlaid with the next layer of membrane.

The advantage of this method is if the membrane is not terminated correctly at the top the wet areas will only appear part way up the wall on the inside.

DRAIN COIL

Install drain coil with filter-sock below the footing contained within drainage metal. The drain coil will fall away from the wall at a slope of at least 0.5° (1:100). Refer to project specification for site requirements.

PROTECTION & DRAINAGE

Once the membrane is installed it will need to be protected before backfilling.

We recommend Viking Drainage Protection Board which allows a constant drainage cavity against the tanking membrane.

Once this is correctly installed the back filling process is easier.

FOUNDATION WATERPROOFING MEMBRANE

UNDER-SLAB CONNECTION

Viking Under-slab membrane is loose laid onto site concrete or sand-blinding. This allows for movement in the concrete once poured.

Under-slab tanking only requires the laps to be welded with gussets at internal corners. The sheet welds (laps) should have a generous bitumen bleed showing. This doesn't need to look pretty as it will never be seen once the concrete has been poured but it needs to be waterproof.

The odd tack seal to the boxing/formwork upstand may be required to hold the membrane in place or use of nails through the membrane to the top of the boxing is acceptable. When the boxing is removed after concrete pour these nail holes will be inside the lap joint to the wall membrane.

The weak points are the corners. Apply 140mm gussets to all corners and patch over any cuts made in the membrane. *Once poured you will never get the chance to get back to these areas later.*

INSPECT

Inspect Under-slab membrane carefully and ask following contractors to mark any hole locations they may make in the membrane during steel reinforcing installation. These MUST be brought to the attention of the main contractor and Tanking installer BEFORE concrete pour. Repair can be simple, but not repairing can lead to water ingress.