// METHOD STATEMENT · BELOW GRADE

Double-Layer SBS Basement Waterproofing

Positive-side PetroGrip SBS two-ply system on raft and external walls, with PVC waterstops

DOCUMENT	REVISION	ISSUE DATE	SYSTEM
PS-MS-02	Rev 01	04 Nov 2026	PetroGrip SBS ×2

1. Purpose & scope

This method statement covers positive-side (external) basement waterproofing using two plies of PetroGrip SBS torch-applied membrane. The membrane goes under the raft (on blinding) and on the external faces of retaining walls, continuous through the raft-to-wall junction. PVC waterstops are installed at construction joints as a second line of defence.

A double-layer system is used where groundwater or the project standard requires redundancy. Ply count, thickness and protection are design decisions shown on the project drawings.

2. Reference documents

- PetroGrip SBS Waterproofing Membrane TDS
- Petroseal PVC Waterstop TDS (PS-TDS-WS-01)
- Petroseal bituminous primer product data
- Structural drawings, dewatering plan and waterproofing details (raft edge, wall-to-raft, pile heads, penetrations)

3. Responsibilities

ROLE	RESPONSIBILITY
Project manager	Approves method statement. Coordinates waterproofing with excavation, dewatering, reinforcement and concreting.
Site supervisor	Controls hot works permit, sequencing and protection before each following trade.
QA/QC inspector	Signs each hold point before the membrane is covered by concrete, protection or backfill.
Dewatering contractor	Keeps groundwater below formation level until the structure and backfill can resist uplift.
Applicator crew	Installs membrane and waterstop joints to this method statement.

4. Materials

- PetroGrip SBS membrane, 3 mm polyester reinforced (two plies), or as specified
- Bituminous primer
- PVC waterstops: dumbbell / kicker type at construction joints, centre-bulb at movement joints
- Protection: 50 mm sand-cement screed on raft membrane; HDPE dimple or bitumen protection board on walls

5. Tools & equipment

- Roofing torches, LPG cylinders, regulators
- Grinder, wire brushes, blower, vacuum
- Hook knives, lap rollers, chalk line
- Thermostatic PVC splicing iron for waterstop joints
- Lap probe, moisture meter, fire extinguishers
- Water pumps for incidental water

- Cement-sand mortar for fillets. Termination bar, mastic.
- Pipe sleeves with puddle flanges for penetrations

6. Health, safety & environment

- Hot works permit issued before any torch is lit. Keep a hot works log for every shift.
- Dry powder fire extinguisher (min 6 kg) at each torch crew. Fire watch for at least 60 minutes after the last torch is extinguished.
- LPG cylinders upright, secured, and at least 3 m from the flame. Check regulators, hoses and connections with soapy water before each shift. Close cylinder valves during breaks.
- Never direct flame at timber, insulation, plastic pipes, cables, XPS boards or under lifted flashings. Use self-adhesive membrane where flame is not allowed.
- PPE: safety boots, heat-resistant gloves, long sleeves, safety glasses. Fall arrest or edge protection where work is within 2 m of an unprotected edge.
- Primer is solvent-based: no smoking or flame until the primer is dry and vapours have cleared.
- Excavation: check shoring and batters daily. Safe access ladders or ramps. Barriers at the excavation edge.
- Confined areas such as lift pits and sumps: gas-test and ventilate before hot works, or use self-adhesive membrane instead.

7. Conditions before starting

- Dewatering running and the formation dry. Groundwater held at least 300 mm below formation throughout membrane work.
- Blinding concrete (min 75 mm, or as designed) laid, level, smooth and cured.
- Pile heads cut, cleaned and treated per the pile-head detail before membrane work around them.
- Walls: external face concrete cured at least 28 days (or as approved), tie holes sealed with repair mortar, honeycombing repaired.

8. Raft — under-slab membrane

1. Clean and prime the blinding, including the raft edge upstand / brick protection wall where used.
2. Torch the first ply fully bonded to the blinding. Side laps min 100 mm, end laps min 150 mm, staggered.
3. Torch the second ply fully bonded to the first. Offset side laps by half a roll width (about 500 mm) and stagger end laps.
4. At the raft perimeter, leave both plies projecting outside the raft line by at least 300 mm (staggered: first ply longer), for later lapping to the wall membrane. Protect the tails.
5. Pile heads: seal the membrane to each pile with the reinforcement collar and mastic detail. Do not leave cut membrane edges around bars.
6. Lay 50 mm protection screed over the membrane as soon as inspection is passed, before reinforcement fixing.

9. Waterstops at construction joints

1. Fix the waterstop at every raft-to-wall kicker joint, wall vertical joint and slab joint shown on the drawings, before concreting.
2. Support centrally with clips tied to reinforcement at flanges only, at about 300 mm centres. Never pierce the bulb or central web.
3. Make all joints by heat welding. Use factory intersections at corners and tees. No lapped or taped joints.
4. Inspect alignment immediately before each pour. Vibrate concrete carefully around the profile.

10. Walls — external face membrane

1. After the wall is cast and cured: grind fins, fill tie holes and defects, form a 50 × 50 mm fillet at the wall foot.

2. Expose and clean the raft membrane tails. Prime the wall and tails.
3. Lap the first wall ply onto the first raft tail, then the second wall ply onto the second tail. Each lap min 150 mm, staggered from the other ply's lap.
4. Torch both plies vertically, fully bonded, with offset laps as on the raft.
5. Carry the membrane up to at least 150 mm above finished ground level. Terminate under a termination bar, seal with mastic and protect with a flashing or plaster.
6. Penetrations: puddle-flanged sleeves cast in. Membrane collars torched to the flange and clamped.

11. Protection and backfill

1. Fix protection board to the wall membrane before any backfill.
2. Backfill in layers, compacting with light plant near the wall. No rubble or sharp stones against the protection board.
3. Keep dewatering running until the structure and backfill are designed to resist uplift.

12. Inspection & test plan (hold points)

#	STAGE	CHECK	ACCEPTANCE	RECORD
01	Formation	Dewatering level, blinding finish, pile-head prep	Dry, smooth, pile heads treated	Checklist + photos
02	Raft ply 1	Bond, laps, tails	Continuous bleed bead, tails ≥ 300 mm	Lap probe sheet
03	Raft ply 2	Lap offset, bond, pile collars	Laps offset ~500 mm, no open laps	Lap probe sheet + photos
04	Raft protection	Screed over membrane	Placed before reinforcement	Photos
05	Waterstops	Position, fixing, welded joints	Centred, straight, all joints welded	Pre-pour checklist
06	Wall plies	Tail laps, bonding, termination	Laps ≥ 150 mm, ≥ 150 mm above finished ground	Lap probe sheet
07	Wall protection	Board fixed before backfill	Full coverage, undamaged	Photos before backfill

13. Common defects to avoid

- Raft tails damaged or contaminated before wall lapping, so the raft-to-wall junction leaks
- Turning dewatering off before the structure can resist uplift
- Membrane on green or wet concrete
- Waterstop folded, displaced or pierced during concreting
- Lapped (not welded) waterstop joints
- Backfilling against unprotected membrane
- Negative-side patching used in place of positive-side continuity

14. Handover records

- Marked-up plans showing ply layout, lap positions and pile-head details
- Lap probe records for each ply and area
- Waterstop pre-pour checklists with joint locations
- Batch numbers and delivery notes for membrane, primer and waterstops
- Photo record before each cover-up stage

PREPARED BY	CHECKED BY (QA/QC)	APPROVED BY (CONSULTANT)
Name / signature / date	Name / signature / date	Name / signature / date

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