Principles of Below Ground Waterproofing

Applications for Commercial and Residential buildings
Positive Tanking as the first defence

- Foundations
- Block work Walls
- Tilt Panel Walls
- Internal wet areas

The following technical drawing cover the detailing required
FOUNDATION WALL WITH DRAINAGE SYSTEM

Protection/drainage/insulation course

Backfill

Sealant bond breaker

Waterproofing membrane

Prepared drain pipe set in aggregate bed with optional filter fabric

MIN 80mm

Footage

Waterstop

Slab on grade with optional crystalline growth compound

Waterproofing membrane or vapor retainer

Prepared substrate
VERTICAL PENETRATION FOR BELOW GRADE MEMBRANE

Waterstop be located at waterproofing termination

Sealant/polyurethane

Slab on grade

Aluminium/stainless steel termination

Pipe penetration

Reinforcing material

80mm MIN

Prepared substrate

Sealant bond breaker

Waterproofing membrane bentonite or pre-applied sheet membrane
PIPE SLEEVE PENETRATION DETAIL

- Waterproofing membrane
- Protection/drainage/insulation course
- Foundation wall
- Backfill
- Stainless steel draw band
- Sleeve extend 100mm MIN from face of wall
- Link seal/gasket
- Retrofit pipe penetration
- Reinforcing strip
- Reinforcing strip, extend 80mm MIN, beyond exterior of wall
- Sealant bond breaker
- Waterstop
Termination bar fastened with appropriate fasteners at approx 12° O.C.
Sheetmetal counter flashing appropriate for masonry construction type
Grade
Backfill
Protection/drainage/insulation course
Appropriate sealant
Appropriate sealant compatible with waterproofing membrane
Waterproofing termination 100mm MIN above grade
Waterproofing membrane
Install appropriate sealant and tool to facilitate run off
Surface mounted sheet metal counter flashing
Products for Positive Tanking Waterproofing

High quality polyurethane caulking

Liquid applied Waterproofing Membrane

Reinforcing Joint fabric

Geofabric

Protective board or sheeting

Agriculture drainage
Helping to Waterproof the Structural integrity

Common methods of preventing water penetration are:

• Install a “water stop” between structural joins, typically the centre of the floor/wall joint.
• Include crystalline growth compound in the concrete mix when pouring foundations, walls or core filling block work
Internal Waterproofing

Rooms with an internal water source become wet area such as Plant Rooms, Liquid Storage Rooms or Basement Bathroom / Laundry / Toilet facilities, all of which require waterproofing to avoid damage to the surrounding facilities.

The approach in these areas is ‘Positive Tanking’. It is essential to correctly identify the condition of the floors, water exit design and traffic load.

Floor preparation may require grinding, installation of Hobs and Water Stops. Some floors also require a vapour barrier application before applying a waterproofing membrane. Options for decorative wear surfaces typically include tiles or epoxy coatings.
BOND BREAKER SYSTEM – CLASS II MEMBRANES

AS3740 requires a "bond breaker" to be installed at the wall/floor joint as outlined in APPENDIX B : B3.5.3(b). This diagram demonstrates our preferred method.

Wall substrate or lining

Liquid Applied Membrane

Reinforcing fabric embedded in membrane

Floor substrate or bedding

Polyurethane Bond Breaker

All Waterproofing Membranes manufactured by Concrete Protection are approved to AS4858
Remedial and Negative Tanking Waterproofing

Most occasions in which Negative Tanking occurs is due to remedial action. Either structural damage has occurred, the membrane system has failed or no waterproofing was installed. In some occasions the water problems are not solved, but the situation managed.

Hydrostatic pressure barrier applied to the inside wall – Epoxy coatings, often with cementous component.

Treat concrete weakness with crystalline growth compound. Car Park ceilings often need Drip Trays as a back up system.

Deep concrete cracking often requires injection fill via packers.
**POSITIVE SIDE WATERPROOFING**
(Most Common Situations)
- Backfilled Walls
- Blindside Walls
- Plaza Roofing
- Green/Garden Roofs

**NEGATIVE SIDE WATERPROOFING**
- Interior Repair Treatments
Waterproofing Products
Manufactured by and for Concrete Protection Pty Ltd

Positive Side

- **FLEXIPRO**
  - Below Ground Waterproofing Membrane
  - 15 Litres
  - Reinforcing and protecting walls, floors, and roofs

- **MICROL 2200**
  - Acrylic Purpose Primer
  - 15 Litres
  - Used for concrete surfaces before applying coatings

- **POLYCLOTH**
  - Reinforcing fabric

- **PROTECTION BOARD**

Negative Side & Repair

- **DIMACOAT**
  - Water based Epoxy as vapour barrier

- **PLUG**
  - Rapid setting repair compound

- **C1**
  - Crystalline growth compound

Liquid applied Waterproofing Membranes

- **POLYCLOTH** – reinforcing fabric

PROTECTION BOARD
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Trusted specialist for over 40 years

- Membrane
- Protective Banner
- Geofabric Wrap
- Primary Waterproofing
- Secondary Waterproofing