METHOD STATEMENT

Roof Waterproofing System Using BC SEAL

Acrylic-Modified Flexible Cementitious Waterproof Coating with Fiber Mesh Reinforcement

1. Scope of Work

This method statement covers the procedure for waterproofing concrete roof slabs using **BC Seal**, a two-component acrylic-modified flexible cementitious waterproof coating, applied in **multiple coats with alkali-resistant fiber mesh embedded between coats** to enhance crack-bridging performance, tensile strength, and long-term durability.

2. Materials

- **BC Seal – Acrylic-Modified Flexible Cementitious Waterproof Coating**
  - Part A: Cementitious Powder
  - Part B: Acrylic Polymer Liquid
- **Alkali-Resistant Fiber Mesh**
  - Weight: approx. 45–60 g/m²
  - Mesh size: approx. 4 × 4 mm
- Clean potable water (for surface dampening only)
- BC Repair 100 (for substrate repairs, if required)
- BC Tec 30 S Polyurethane Sealant (for expansion joints, if applicable)

3. Tools & Equipment

- Mechanical mixer (300–400 rpm)
- Mixing containers
- Stiff nylon brushes / rollers
- Steel or rubber trowels
- Scissors or knife (for cutting mesh)
- Measuring scale
- Personal Protective Equipment (PPE)

4. Surface Preparation

1. Ensure roof slab concrete is **structurally sound**, fully cured, and free from:
    - Dust, dirt, grease, oil, curing compounds
    - Laitance and loose particles
2. Remove all weak or honeycombed concrete and repair using **BC Repair 100**.
3. Treat cracks as follows:
    - Hairline cracks (< 0.3 mm): Bridge directly with BC Seal.
    - Static cracks (> 0.3 mm): Cut "V" groove, clean, and fill with BC Repair 100.
4. Seal all expansion and construction joints using **BC Tec 30 S** and allow curing.
5. Before application, thoroughly **pre-wet the surface** to achieve **SSD condition (Saturated Surface Dry)**. No standing water is permitted.

5. Mixing Procedure

1. Pour **Part B (liquid)** into a clean mixing container.
2. Gradually add **Part A (powder)** into the liquid while mixing.
3. Mix using a slow-speed drill (300–400 rpm) for **3–5 minutes** until a smooth, lump-free slurry is obtained.
4. Allow the mix to stand for **5 minutes**, then remix briefly.
5. Use mixed material within the **pot life of approx. 45 minutes at 25°C**.
6. Always add powder to liquid — **never liquid to powder**.

6. Application Procedure (With Fiber Mesh Reinforcement)

6.1 First Coat Application

1. Apply the **first coat of BC Seal** evenly on the damp roof slab using a brush or roller.
2. Coverage should be uniform, ensuring full substrate wetting.
3. Typical wet film thickness to achieve approx. **1.0 mm DFT**.

4. While the first coat is **still wet**, proceed immediately with mesh installation.

6.2 Fiber Mesh Embedding

1. Lay the **alkali-resistant fiber mesh** onto the freshly applied first coat.
2. Press the mesh gently using a brush or trowel to fully embed it into the coating.
3. Ensure:
    - No wrinkles or air pockets
    - Mesh is fully saturated
    - Overlaps of minimum **50 mm** at joints
4. Additional reinforcement is recommended at:
    - Corners and upturns
    - Pipe penetrations
    - Construction joints and stress-prone areas

6.3 Second Coat Application

1. Allow the first coat with embedded mesh to become **touch dry** (approx. 6–8 hours at 25°C).
2. Apply the **second coat of BC Seal** perpendicular to the first coat direction.
3. Ensure complete coverage of the mesh with no exposure.
4. Achieve a cumulative **total dry film thickness of 2.0–3.0 mm**.

6.4 Optional Third Coat (If Required)

- In areas of high exposure or specification requirement, a third coat may be applied after the second coat has cured sufficiently.

7. Curing & Protection

- Protect freshly applied coating from:
    - Direct sunlight
    - Rain and water ponding
    - Mechanical damage
- Initial curing: **4–5 hours**
- Full cure: **96 hours**
- Avoid foot traffic for minimum **48 hours**.
- Ponding or overburden installation only after full curing.

8. Coverage

Application	Recommended DFT	Approx. Consumption
General Roof Waterproofing	1.0 mm	~1.8 kg/m²

Actual consumption may vary depending on surface roughness and porosity.

9. Quality Control & Inspection

- Verify SSD surface condition prior to application.
- Check mixing ratios and pot life compliance.
- Confirm fiber mesh is fully embedded and overlapped correctly.
- Measure final dry film thickness (DFT).
- Inspect for pinholes, voids, or exposed mesh.

10. Health, Safety & Environmental Precautions

- Wear gloves, goggles, and protective clothing.
- Ensure adequate ventilation during mixing and application.
- Avoid skin and eye contact.
- Do not discharge waste material into drains or watercourses.
- Refer to the **BC Seal Safety Data Sheet (SDS)** for detailed safety instructions.