

## Method Statement for Concrete Repair of Shotcrete Walls with Steel Mesh for Verticals

### Purpose

This method statement outlines the process and procedures for repairing concrete on shotcrete walls with the inclusion of steel mesh for vertical applications. The aim is to restore structural integrity, improve durability, and ensure compliance with project specifications and safety standards.

### Scope

This document covers the repair of damaged or deteriorated shotcrete walls in vertical orientations, including surface preparation, steel mesh installation, and application of repair materials.

### Responsibilities

#### Site Engineer:

Ensures compliance with the method statement and project specifications.

#### Supervisor:

Oversees the execution of tasks and ensures workers follow safety procedures.

#### Skilled Workers:

Perform concrete surface preparation, steel mesh installation, and application of repair materials.

#### Quality Control Inspector:

Inspects and verifies the work at each stage to ensure quality standards.

## Materials and Equipment

### Materials:

Steel mesh (galvanized or as per project specifications)
Repair mortar or shotcrete mix (pre-approved by the engineer)
Anchors and fasteners for mesh installation
Bonding agent (epoxy or cementitious as specified) and Curing compound

### Equipment:

Power tools (grinders, chipping hammers, etc.)
Air compressor
Shotcrete equipment
Trowels and finishing tools
Measuring tools (levels, plumb lines, etc.)
Scaffolding or mobile platforms
Personal Protective Equipment (PPE)

## Procedure

### Pre-Work Inspection and Preparation:

Inspect the damaged area to determine the extent of repair required.

Mark the repair boundaries clearly.

Ensure all necessary permits and approvals are in place.

### Surface Preparation:

Remove all loose, damaged, or deteriorated concrete using a chipping hammer or other suitable tools.

Clean the surface thoroughly to remove dust, grease, or any contaminants using compressed air or water jetting.

Ensure the exposed reinforcement is free from rust. Use a wire brush or sandblasting to clean rusted steel.

Apply an approved bonding agent to the prepared surface if required.

### Steel Mesh Installation:

Cut and shape the steel mesh to fit the repair area.

Fix the mesh to the wall using anchors or fasteners at appropriate intervals as per design specifications.

Ensure the mesh is securely fastened and positioned at the correct cover depth.

### Application of Repair Material:

Mix the repair mortar or shotcrete material as per the manufacturer's instructions.

Apply the material using shotcrete equipment or manually in layers.

Start from the bottom and move upwards for vertical walls.

Ensure even distribution and compaction of the material.

Smooth and finish the surface with trowels or other tools as required.

### Curing:

Apply a curing compound or cover the repaired area with wet hessian or plastic sheets.

Maintain curing for the specified duration to achieve optimal strength and durability.

### Final Inspection:

Inspect the repaired area for uniformity, alignment, and adherence to design specifications.

Record the repair details and ensure approval from the quality control team.

### Safety Precautions

Ensure all workers use appropriate PPE, including helmets, gloves, goggles, and safety harnesses for working at heights.

Use scaffolding or platforms that meet safety standards.

Follow safe handling procedures for materials and equipment.

Maintain a clean and organized worksite to prevent accidents.

### Quality Assurance

Ensure all materials meet project specifications and have been approved by the engineer.

Document and report any deviations or issues during the repair process.

### Documentation

Daily progress reports
Material test results
Inspection and approval records
Photographic evidence of each stage of work
References
Project specifications and drawings
Manufacturer's guidelines for repair materials
Relevant standards and codes (e.g., ACI, ASTM, or local codes)