

## METHOD STATEMENT

### Application of BC Fire Proof 5 GP – Spray-Applied Fire Resistive Material



#### 1. Purpose

This Method Statement describes the procedures, materials, equipment, and quality control measures for the proper surface preparation, mixing, application, and curing of BC Fire Proof 5 GP, a gypsum-based, spray-applied fire resistive material (SFRM) used to protect structural steel and concrete elements in compliance with UL fire resistance designs and International Building Code (IBC) requirements.

#### 2. Scope of Work

This method applies to the application of BC Fire Proof 5 GP on:

- Structural steel beams, columns, and joists
- Metal floor and roof decks
- Precast and cast-in-place concrete units

- Interior wall and ceiling systems requiring fire protection

### 3. References and Standards

Application and testing shall conform to the following standards (latest editions):

- ASTM E 605 – Density of SFRM
- ASTM E 736 – Bond Strength of SFRM
- ASTM E 759 – Resistance to Deflection
- ASTM E 760 – Bond Impact Resistance
- ASTM E 761 – Compressive Strength
- ASTM E 859 – Air Erosion Resistance
- ASTM E 937 – Corrosion Testing
- ASTM E 84 – Surface Burning Characteristics
- ASTM G 21 – Resistance to Mold Growth
- UL Fire Resistance Designs – For fire rating verification

### 4. Responsibilities

Party	Responsibility
Contractor	Ensure proper surface preparation, mixing, and application according to this method.
Supervisor/Engineer	Verify compliance with design thickness and density.
QC Inspector	Conduct field checks (thickness, density, adhesion) and record test results.
Manufacturer's Representative	Provide technical support and ensure conformity with product requirements.

## 5. Materials

### Primary Material

- BC Fire Proof 5 GP – Gypsum-based spray-applied fire resistive material

### Accessories

- BC Sealer or approved bonding agent (for galvanized steel and concrete)
- Clean potable water

## 6. Equipment

- Plaster-type or continuous mixer designed for SFRM
- Positive displacement pump and air compressor
- Spray gun with adjustable nozzle and air shield
- Density measuring tools (bucket, scale)
- Wet film thickness gauge and depth pins
- Ventilation fans (if in closed areas)
- PPE (respirators, gloves, goggles, coveralls)

## 7. Surface Preparation

1. Ensure all substrates are structurally sound and free of oil, grease, loose rust, dust, dirt, or any contaminants.
2. Confirm primer compatibility—only primers approved for use with SFRM and tested per ASTM E119 may be used.
3. On galvanized steel or concrete, apply BC Sealer or approved bonding agent per manufacturer's recommendation.
4. Fireproofing on roof decks shall begin only after roofing is completed and deck traffic has ceased.
5. No fireproofing shall be applied on steel decking until structural concrete above is completed.

## 8. Mixing Procedure

1. Use clean water and equipment free of hardened residue.
2. Introduce water into the mixer first, followed by BC Fire Proof 5 GP while blades are turning.
3. Mix until smooth, lump-free slurry forms (approx. 1–2 minutes).
4. Adjust water to achieve target wet density  $720 \pm 50 \text{ kg/m}^3$  ( $45 \pm 2 \text{ pcf}$ ).
5. Avoid overmixing as it reduces pump efficiency.

## 9. Application Procedure

1. Verify environmental conditions before starting:
  - Ambient temperature:  $4^{\circ}\text{C}$ – $43^{\circ}\text{C}$
  - Substrate temperature:  $\geq 4^{\circ}\text{C}$
  - Relative humidity:  $\leq 95\%$
2. Spray apply the mixed material in uniform passes.
  - Up to 13 mm ( $\frac{1}{2}$  in) in a single coat.
  - Over 16 mm ( $\frac{5}{8}$  in): apply in multiple coats, allowing previous layer to set.
3. Maintain consistent spray pattern and air pressure ( $\sim 38 \text{ kPa}$  at nozzle).
4. Build to the required thickness as per design fire rating.
5. Check wet film thickness during application using a pin gauge.
6. Do not retemper or reuse partially set material.

## 10. Curing and Drying

1. Maintain minimum ambient and substrate temperature of 4.4°C (40°F) for at least 24 hours before, during, and after application.
2. Ensure adequate ventilation to aid drying—minimum 4 air changes per hour in enclosed areas.
3. Protect from physical damage or moisture until fully dry.

## 11. Health, Safety, and Environment (HSE)

- Use appropriate PPE: dust mask/respirator, gloves, goggles, and coveralls.
- Avoid inhalation of airborne dust.
- Provide mechanical ventilation in enclosed areas.
- Prevent material from entering drains or natural watercourses.
- Dispose of waste material in accordance with local regulations.

## 12. Storage and Handling

- Store material in a dry, covered area, off the ground.
- Avoid exposure to moisture or direct sunlight.
- Shelf life: 12 months from production date in unopened bags.
- Protect bags from physical damage and freezing conditions.