

**Part 1      General**

**1.1          REFERENCE STANDARDS**

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 CAN-ULC-S101-04, Standard Methods of fire Endurance Tests of Building Construction and Materials.
  - .2 CAN-ULC-S102-03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

**1.2          ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .1 Submit [two] copies of WHMIS MSDS - Material Safety Data Sheets.
- .3 Samples: submit duplicate 300 x 300 mm size sample of exposed fireproofing for approval of texture and colour.
- .4 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Test Reports:
    - .1 Submit product data including certified copies of test reports verifying fireproofing applied to substrate as constructed on project will meet or exceed requirements of Specification.
    - .2 Submit test results in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
    - .3 For assemblies not tested and rated, submit proposals based on related designs using accepted fireproofing design criteria.
  - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.
  - .4 Manufacturer's Field Reports: submit to manufacturer's written reports within [3] days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.

### **1.3 QUALITY ASSURANCE**

- .1 Qualifications:
  - .1 Installer: company specializing in sprayed-on fireproofing approved by manufacturer with documented 5 years experience.
- .2 Mock-ups:
  - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
  - .2 Apply fireproofing to approximately 5 m<sup>2</sup> area of surfaces of mock-up-matching surface to be treated.
  - .3 Mock-up will be used:
    - .1 To judge workmanship, substrate preparation and application of material.
  - .4 Allow 24 hours for inspection of mock-up by Contract Administrator before proceeding with fireproofing work.
  - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this work.
- .3 Site Meetings:
  - .1 Convene pre-installation meeting one week prior to beginning work of on-site installations with Contract Administrator to:
    - .1 Verify Project requirements.
    - .2 Review installation and substrate conditions.
    - .3 Co-ordination with other building subtrades.
    - .4 Review [manufacturer's] installation instructions and warranty requirements.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
  - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
  - .3 Deliver packaged materials in original unopened containers, marked to indicate brand name, manufacturer and ULC markings.
- .2 Storage and Protection:
  - .1 Store materials indoors in dry location.
  - .2 Store and protect materials from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
  - .3 Damaged or opened containers will be rejected.
  - .4 Packaging to indicate shelf-life and materials to be applied prior to expiration of shelf-life.

- .5 Provide temporary enclosures to prevent spray from contaminating air beyond application area.
- .6 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of fireproofing materials.
- .3 Waste Management and Disposal:
  - .1 Separate waste materials for [recycling] [reuse] in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **1.5 AMBIENT CONDITIONS**

- .1 At temperatures less than 5 degrees C, ensure that 5 degrees C air and substrate temperature is maintained during and for 24 hours after application. Ensure that natural ventilation to properly dry the fireproofing during and subsequent to its application is provided. In enclosed areas lacking openings for natural ventilation, ensure that interior air is circulated and exhausted to the outside.
- .2 Maintain relative humidity within limits recommended fireproofing manufacturer.
- .3 Ensure that natural ventilation to properly dry fireproofing during and subsequent to its application is provided.
- .4 In enclosed areas lacking openings for natural ventilation, provide minimum of 6 air exchanges per hour by forced air circulation.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Sprayed fireproofing: ULC certified cementitious fireproofing qualified for use in ULC Designs specified.
- .2 Curing compound: type recommended by fireproofing manufacturer, qualified for use in ULC Designs specified.
- .3 Sealer: type recommended by fireproofing manufacturer, qualified for use in ULC Design specified.
  - .1 Colour: white.
  - .2 Ensure spray-applied fireproofing: does not crack, spall or delaminate under downward deflection conditions.
  - .3 Spray-Applied fireproofing material: not contribute to corrosion of test panels.
- .4 Acceptable Product: Carbolite Southwest Type 7TB or approved equal to the requirements of B.7.

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**Part 3 Execution**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

**3.2 PREPARATION**

- .1 Substrate: free of material which would impair bond.
- .2 Verify that painted substrates are compatible and have suitable bonding characteristics to receive fireproofing.
- .3 Remove incompatible materials.
- .4 Ensure that items required to penetrate fireproofing are placed before installation of fireproofing.
- .5 Ensure that ducts, piping, equipment, or other items which would interfere with application of fireproofing are not positioned until fireproofing work is completed.

**3.3 APPLICATION**

- .1 Apply bonding adhesive or primer to substrate as recommended by manufacturer.
- .2 Apply fireproofing to correspond with tested assemblies, and as recommended by manufacturer.
- .3 Apply fireproofing over substrate, building up to required thickness to cover substrate with monolithic blanket of uniform density and texture.
- .4 Apply fireproofing directly to open web joists without use of expanded lath.
- .5 Tamp smooth, surfaces as indicated visible in finished work.
- .6 Apply curing compound to surface of cementitious fireproofing as required by manufacturer.
- .7 Apply sealer to surface of mineral fibre fireproofing as required by manufacturer where fireproofing is to be painted and as indicated.

**3.4 FIELD QUALITY CONTROL**

- .1 Manufacturer's Field Services:
  - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.

- .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

**3.5 PATCHING**

- .1 Patch damage to fireproofing caused by testing or by other trades before fireproofing is concealed, or if exposed, before final inspection.

**3.6 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Clean surfaces not indicated to receive fireproofing of sprayed material within 24 hours period after application.
- .3 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**