

**RENOVATION**

**Part 1 General**

**1.1 REFERENCES**

- .1 ASTM International
  - .1 ASTM D2240-15 (2021), Standard Test Method for Rubber Property—Durometer Hardness.
  - .2 ASTM D4541-17, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Safety Data Sheets (SDS).
- .3 Underwriters Laboratories of Canada (ULC)
  - .1 CAN/ULC S102-10, Test for Surface Burning Characteristics of Building Materials and Assemblies.

**1.2 SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheets; include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS SDS - Safety Data Sheets in accordance with Section 01 35 29.06 – Health and Safety Requirements.
- .3 Quality assurance submittals: Submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Certificates: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .2 Manufacturer's Instructions: Submit manufacturer's installation instructions and special handling criteria, installation sequence, and cleaning procedures.

**1.3 QUALITY ASSURANCE**

- .1 Mock-ups:
  - .1 Apply mock-up in accordance with Section 01 45 00 - Quality Control.
  - .2 Apply fireproofing to approximately 1 m<sup>2</sup> area of surfaces of mock-up-matching surface to be treated.
  - .3 Mock-up will be used to judge quality of work, substrate preparation, operation of equipment and material application.
  - .4 Locate where directed.

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- .5 Allow for inspection of mock-up by Departmental Representative before proceeding with fireproofing work.
- .6 When accepted, mock-up will demonstrate minimum standard of quality required for this work.
- .7 Approved mock-up may remain as part of finished work.

**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 and manufacturer.
- .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.

**1.5 AMBIENT CONDITIONS**

- .1 Ensure that minimum 5°C air and substrate temperature is maintained during and for 24 hours after application.
- .2 Ensure that natural ventilation is provided to properly dry fireproofing during and after application. In enclosed areas lacking openings for natural ventilation, ensure that interior air is circulated and exhausted to the outside.
- .3 Maintain relative humidity within limits recommended fireproofing manufacturer.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Fireproofing: water-based fireproofing for interior structural steel. Typical characteristics:
  - .1 Bond strength (ASTM D4541): Minimum 23.9 kPa (500 psf).

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- .2 Abrasion resistance (ASTM D4541): < 140 mg/1000 cycles.
- .3 Application thickness: manufacturer's recommended thickness for 2 hour fire rating.
- .4 Durometer hardness (ASTM D2240): 65 to 70.
- .5 Surface burning characteristics (CAN/ULC S102):
  - .1 Flame spread: 0.
  - .2 Smoke developed: 35.
- .2 Primer: type recommended by fireproofing manufacturer.
  - .1 If substrate is previously primed, confirm acceptability with fireproofing manufacturer.
- .3 Topcoat: type acceptable to fireproofing manufacturer.
  - .1 Confirm acceptability of topcoat with fireproofing manufacturer.

**Part 3 Execution**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 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 that would impair bond.
- .2 Verify that 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 that would interfere with application of fireproofing are not positioned until fireproofing work is completed.

**3.3 APPLICATION**

- .1 Apply primer to substrate if recommended by manufacturer.
- .2 Apply fireproofing to correspond with tested assemblies, or acceptable calculation procedures to provide two (2) hour fire resistance rating.
- .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 Allow individual coats to cure fully in multi-coat applications.

**3.4 PATCHING**

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

**3.5 CLEANING**

- .1 Proceed in accordance with Section 01 74 00 - Cleaning.
- .2 Clean surfaces not indicated to receive fireproofing of material within 24 hour period after application.
- .3 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**