

Sprayed Fireproofing

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PART 1 - GENERAL

1.1 Description

- .1 Work consists of applying sprayed fireproofing system to surfaces of building components required to have fire rated hourly classifications as indicated on Drawings and Specifications and patching and making good existing areas where new structural work is performed.

1.2 Related Sections

- .1 Supply and installation of structural steel - under Section 05110.

1.3 Product Handling

- .1 Store fireproofing materials in weathertight enclosure raised clear of the ground so they are protected from moisture.
- .2 Store materials in original undamaged sealed container with manufacturer's labels and seals.
- .3 Discard any material which has come into contact with moisture prior to actual use.

1.4 Quality Assurance

- .1 Applicators shall be approved, licensed and skilled in the Work of this trade and shall be supervised by the manufacturer of the sprayed fireproofing material using approved equipment.
- .2 Materials and applied systems shall have full acceptance by authority having jurisdiction.

1.5 Standards Reference

- .1 The minimum acceptable standards to which the sprayed fireproofing shall conform are the OBC 413/90, Subsection 3.1.7 "Fire Resistance Ratings".
- .2 The minimum acceptable physical performance standards are those stated herein. Materials having higher performance standards are not precluded from submission or acceptance.

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1.6 Submittals

- .1 Submit following product information, test reports and certificates prior to application of materials.
  - .1 Brand names and descriptive catalogue data of proposed products.
  - .2 Complete references to tests by ULC or WH that substantiate design to be applied. Test data shall be evaluated or developed under ULC CAN4-S101-M temperature criteria.
  - .3 Include complete test report in cases where references are not published by testing laboratories, and where authority having jurisdiction has approved significant changes from tested assembly on basis of an engineering study; study calculations shall accompany report.
  - .4 Minimum thickness requirements table for all surfaces indicated to receive sprayed fireproofing.

1.7 Protection

- .1 Protect during installation any adjacent finished surfaces from contamination and damage due to Work under this Section.
- .2 Protect completed Work, vulnerable corners, edges and surfaces liable to be damaged due to construction activities. Provide wood cover strips and sheet material as required to prevent damage.
- .3 Method and materials to effect protection are subject to review by the Consultant.

1.8 Warranty

- .1 Contractor hereby warrants that the sprayed fireproofing shall remain free of defects in materials and workmanship in accordance with General Conditions.
- .2 The Contractor agrees to warrant the Work against the occurrence of any of the following conditions:
  - .1 Flaking, delamination, fibre loss, crazing and cracking or evidence of other defects of finish.
  - .2 Performance failure of any component of the sprayed fireproofing system.

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- .3 Defective Work shall be removed and replaced with acceptable Work at no cost to Owner, and at such times as designated by the Owner.

PART 2 - PRODUCTS

2.1 Materials

- .1 Do not substitute materials other than those approved by the Consultant.
- .2 Materials shall be approved as fire resistant by ULC in accordance with ULC CAN4-S101.
- .3 Products shall be asbestos free.
- .4 Materials shall not induce deterioration of members to which they are applied.
- .5 Bonding agents, binders, accessories, cleaning solvents, aggregates and sealers shall be in accordance with base material manufacturer's recommendation.
- .6 Mixing water shall be clear and free from injurious amounts of oil, acid, alkali, organic matter, sediment or any other deleterious or stain-producing substances.

2.2 Fireproofing (Cementitious)

- .1 Physical properties: Sprayed cementitious material consisting of vermiculite base, factory prepared mixture, requiring the addition of water only.
- .2 Acceptable Manufacturers: Cementitious mixtures as Grace & Co. of Canada Ltd., or A/D Fire Protection Systems Inc., or other approved alternate conforming to specified physical properties.

2.3 Fireproofing System

- .1 At Contractor's option use one of the following fireproofing types:
  - .1 Cementitious type;
    - .1 Physical properties: Sprayed cementitious material consisting of vermiculite base, factory prepared mixture, requiring the addition of water only.

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- .2 Acceptable Manufacturers: Cementitious mixtures as Grace & Co. of Canada Ltd., or A/D Fire Protection Systems Inc., or other approved alternate conforming to specified physical properties.

PART 3 - EXECUTION

3.1 Examination

- .1 Prior to commencement of Work examine the existing structure for tolerances in dimension and any condition affecting the Work under this Contract. Inform Contractor in writing of unacceptable existing Work and conditions.
- .2 Commencement of installation shall be construed as acceptance of existing Work and conditions and no other claims based on same will be entertained.

3.2 Preparation

- .1 Ensure surfaces to receive spray fireproofing are firm, dry, clean. Remove oil, grease, dirt, loose paint, paint, rust, scale or other deleterious material that would impair bond, according to manufacturer's recommendations. Execute all Work necessary to prepare surfaces for the application of sprayed fireproofing.
- .2 Maintain surfaces to receive fireproofing, materials and ambient temperatures at 5°C for a period of one (1) week before application, during application and until application is fully cured.
- .3 Employ adequate ventilation during and subsequent to application of fireproofing. Coordinate with the Contractor.
- .4 Do not commence application until all anchors, hangers, clips and all other attachments to the building structure have been completed and reviewed by the Consultant and Contractor.

3.3 Application

- .1 Apply sprayed fireproofing in accordance with the printed instructions of the manufacturer of the sprayed fireproofing material, and as specified herein.
- .2 Apply by the contour method in one or more coats of sufficient thickness to achieve the fire ratings as required.

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- .3 Repair sprayed fireproofing damaged by other trades after completion of this Work to the satisfaction of the Consultant. Costs for damage shall be borne by the responsible Section. Coordinate work with other Sections.
- .4 Install all the sprayed fireproofing so that any movement of building structure acting alone or together does not tear, rupture, delaminate, puncture or perforate any spray fireproofing.

3.4 Clean-up

- .1 Upon completion of Work of this Section clean up all surplus materials and debris attributable to this Section.

Intumescent Mastic Fireproofing

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PART 1 - GENERAL

1.1 Related Sections

- .1 Preparation of structural steel substrate under Section 05110.

1.2 Samples

- .1 Submit 305mm (12") x 500mm (20") samples of full coating system. Step back each additional coating layer to show range of materials from substrate to finish coat, including colour and texture as applicable.

1.3 Site Conditions

- .1 Temperature: Substrates, materials and ambient temperatures shall be between 5 °C and 35°C throughout the total period of application and drying for both Basecoat and Top Sealer. If necessary, heating must be provided, but with adequate ventilation to prevent condensation.
- .2 Humidity: The relative humidity must not exceed 75% throughout the total period of application and drying for the Basecoat (mastic), and must not exceed 65% throughout application and drying period for the Top Sealer (finish).

1.4 Regulatory Requirements

- .1 Carry out work in strict accordance with fire test report data, under CAN4-S-101 procedures and as tested by Underwriters Laboratories.

1.5 Quality Assurance

- .1 Execute Work only by a Trade Contractor who has adequate equipment and skilled tradesmen to perform it expeditiously, is an applicator approved by supplier of fireproofing materials, and is known to have been responsible for satisfactory installations similar to that specified during a period of at least the immediate past two years.
- .2 Trade Contractor shall be Manufacturer Certified Installer, and shall have proven experience with specified system.

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1.6 Product Delivery, Storage and Handling

- .1 Deliver materials and products to the site in original undamaged containers with manufacturer's seals intact.
- .2 Store materials and products in a dry location at 5°C min. Protect materials from the elements.

PART 2 - PRODUCTS

2.1 Materials

- .1 Intumescent fireproofing system: A/D Firefilm as manufactured by A/D Fire Protection Systems Inc.
- .2 Protective decorative finish; where system is exposed: Chlorinated Rubber Coating equal to PPG Heavy Duty Coatings as approved by A/D Fire Protection Systems Inc. Colour to Consultant's selection.
- .3 Fire resistant coating shall bear label of Underwriters Laboratories verifying that materials conform to CAN4-S-101.

PART 3 - EXECUTION

3.1 Conditions of Surfaces

- .1 Examine surfaces to ensure they are dry, clean and free from oil, grease, dirt, loose primer, mill scale or other deleterious material that would impair bond.
- .2 Ensure all surfaces have been primed with a compatible primer with Basecoat to ensure proper bonding.
- .3 Examine surfaces to receive the work of this Section and proceed only when conditions are satisfactory. Report unsatisfactory conditions promptly.

3.2 Preparation

- .1 Remove dirt, dust and other deleterious substances from surface to be coated.
- .2 Remove and replace accessory objects as required. Do not coat devices thereby exposed.

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- .3 Mask adjacent surfaces.
- .4 Mix materials and products in accordance with manufacturer's written instructions.

3.3 Application

- .1 Apply fireproofing and decorative finish in accordance with manufacturer's written instructions.
- .2 Apply decorative finish in exposed areas only.
- .3 Cooperate in co-ordinating and scheduling of work.
- .4 Apply material to proper loading thickness to achieve a ULC or Warnoch Hersey fire protection rating of 1 hour.

3.4 Patching

- .1 Patch and repair any material which has been damaged by this or other trades, cost of repairs shall be borne by trades responsible for damage.

3.5 Cleaning

- .1 Clean and make good to the consultant's approval, surfaces soiled or otherwise damaged in connection with the work of this Section. Pay the cost of replacing finishes, materials and products that cannot be satisfactorily cleaned.
- .2 Upon completion of the work, remove all debris, equipment and excess material resulting from the work of this Section from the site.