SECTION 07 81 00

APPLIED FIREPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide sprayed-on type applied fireproofing with accessories as required for complete code compliant installation.

B. Related Sections:

1. Section 07 81 20: Intumescent mastic fireproofing.
2. Section 07 84 00: Firestopping.

1.2 REFERENCES

A. Underwriters Laboratories (UL): Fire Resistant Directory.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's literature.

1. Deferred Approvals: Submit data necessary for applicable authorities for each type of fireproofing assembly required for Project.

B. Certificate: Submit manufacturer certification indicating applicator acceptability and material compliance with applicable codes and Contract Documents.

1. Certification shall indicate new materials used to patch existing fireproofed members at new and existing work are compatible with existing fireproofing materials and meet all performance requirements.

C. Test Reports: Submit reports indicating compliance with design and performance requirements.

1. Furnish test reports of independent testing agencies acceptable to applicable authorities indicating conformance to ASTM E119 and ASTM E84.

2. Enforcement Agency Approvals: Provide information required by enforcing agencies to establish acceptance of materials in general and for specific applications.

1.4 QUALITY ASSURANCE

A. Qualification of Applicator: Firm acceptable to manufacturer of fireproofing materials, with minimum five years successful experience on projects of similar scope.

1.5 SITE CONDITIONS

A. Ensure structure to which fireproofing is applied is not enclosed and surfaces are open to view until application is reviewed.

B. Do not apply fireproofing when temperature of substrate material and surrounding air is below 40 degrees F.

C. Provide ventilation in areas to receive fireproofing during and after application in accordance with manufacturer recommendations, to properly dry material and maintain nontoxic, unpolluted working area.

D. Do not begin application of fireproofing to underside of steel decking until concrete work above steel decking is completed.

E. Complete roofing applications and roof mounted equipment installation prior to application of fireproofing to underside of roof decking and supporting beams and joists.

PART 2 - PRODUCTS

2.1 SYSTEMS MANUFACTURERS

A. Grace Construction Products/Monokote MK-6.

B. Isolatek International/CAFCO Blaze-Shield II.

C. Southwest Fireproofing Products Co./Type 7GP.

D. Substitutions: Refer to Section 01 25 00.

2.2 MATERIALS

A. System Requirements: Provide sprayed-on type fireproofing as required to existing fireproofing system and maintain fire-ratings as required for Project.

B. Regulatory Requirements: Comply with applicable codes for fireproofing.

1. Fire Resistance Ratings: Comply with required ratings based on tests in accordance with ASTM E119.

2. Surface Burning Characteristics: Maximum 25 flame spread and 450 smoke density when tested in accordance with ASTM E84.

C. Design Criteria: Provide materials capable of attaining fire ratings as required for Type IA, Fire Resistive construction.

D. Performance Criteria: Provide materials listed by UL or independent testing and inspection agency acceptable to applicable authorities.

1. Bond strength of fireproofing, ASTM E736, tested to provide minimum average bond strength of 200 psf and individual bond strength of 150 psf.

2. Compressive Strength: Maximum deformation of 10% when subjected to compressive forces of 1000 psf, ASTM E761.

3. Air Erosion: Maximum allowable weight loss of fireproofing material shall be 0.005 gm/ft^2 when tested in accordance with ASTM E859.

4. Mold Resistance: Materials to show resistance to mold growth, ASTM C665 or ASTM G21.

5. Combustibility: Maximum total heat release of 5 MJ/m^2 after exposure to radiant heat flux of 20 KW/m^2, ASTM E1354.

E. Applied Fireproofing: Mill mixed cementitious formulation for sprayed-on application.

1. Materials: Blended for even texture; with no asbestos.

F. Water: Clean, free of materials harmful to fireproofing.

G. Hard Coat: Provide manufacturer's standard hard-coat topping system or special hard system for applications subject to abuse.

H. Sealer: Provide manufacturer's standard material recommended for use on applications of sprayed-on fireproofing exposed to exterior and high humidity, applied topping or integral system, Contractor’s option.

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with manufacturer's recommendations and installation instructions for preparation of surfaces to receive sprayed-on fireproofing.

B. Protect adjacent surfaces and equipment from damage by over-spray, fallout, and dusting; mask adjacent work as required.

1. Take special care to protect from over-spray concrete and other surfaces that are to remain permanently exposed.

C. Provide temporary enclosure to prevent spray from contaminating air.

D. Close off and seal duct work in areas where fireproofing is being applied.

E. Clean substrate of dirt, grease, oil, loose material, paints, primers, and other matter which affects bond of sprayed fireproofing.

F. Remove incompatible materials that affect bond by scraping, brushing, scrubbing or sand blasting.

G. Verify bond requirements and compatibility of surfaces to receive fireproofing before application of sprayed-on fireproofing.

1. Verify fireproofing system bonding capability to surfaces whether raw steel, galvanized, or prime painted. Where substrate is questionable provide testing as necessary. Where bond is questionable, provide barrier coat ensuring bond.

H. Ensure ducts, piping, equipment and items that could interfere with application of fireproofing are not positioned until fireproofing work is completed.

I. Ensure clips, hangers, support sleeves and other attachments required to penetrate fireproofing are in place prior to application of fireproofing.

3.2 APPLICATION

A. Mix and apply fireproofing in strict accordance with manufacturer's recommendations and installation instructions.

B. Apply fireproofing in sufficient thickness and density to achieve required fire ratings.

C. Apply fireproofing over substrate, building to required thickness with as many passes or stages necessary to cover with monolithic blanket of uniform density and texture.

D. Provide protective hard coat or hard system at surfaces subject to damage by abrasion and damage by vandalism.

E. Provide exterior quality material or sealer at fireproofing exposed to exterior and to high humidity.

3.3 FIELD QUALITY CONTROL

A. Site Tests: Inspection and testing will be required to ensure applied thickness and density meets fire rating requirements and reviewed test reports.

1. Correct unacceptable work and pay for further testing if required to prove acceptability of installation.

2. Patch test areas as required to re-establish fireproofing integrity.

3.4 CLEANING

A. Remove excess and over-spray, droppings, and debris.

B. Remove fireproofing from materials and surfaces not required to be fireproofed.

1. Surfaces in exposed areas are to be left clean of fireproofing. Surfaces in concealed areas shall be left in a scraped clean condition.

3.5 PROTECTION

A. Protect applied fireproofing from damage by subsequent operations; Repair damaged fireproofing before fireproofing is enclosed.

END OF SECTION