Dendamix™ Fireproofing Guide Specifications

PART 1 - GENERAL

1.1 WORK INCLUDED

1.1.1 Work under this section includes the furnishing of all labor, materials, equipment, and services necessary to and incidental to, the complete and proper installation of all spray applied fireproofing and related work as specified herin, and in accordance with all requirements of contract documents.

1.1.2 The material and installation shall conform to the applicable building code requirements of all authorities having jurisdiction.

1.2 RELATED WORK

(See section 3.1)

1.3 QUALITY ASSURANCE

1.3.1 Fireproofing work shall be performed by a firm acceptable to the sprayed fireproofing material manufacturer.

1.3.2 Fireproofing material shall be applied by factory trained applicators only.

1.3.3 Products, execution, and fireproofing thickness shall conform with the applicable code requirements for the fire ratings specified.

1.4 REFERENCES

1.4.1 ASTM STANDARDS

E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

E119 - Standard Test Methods of Fire Tests of Building Construction and Materials.

E605 - Standard Test Methods for Thickness and Density of Sprayed Fire Resistive Materials Applied to Structural Members.

E736 - Standard Test Methods for Cohesion Adhesion of Sprayed Fire Resistive Materials Applied to Structural Members.

E759 - Standard Test Method of Deflection on Sprayed Fire Resistive Materials Applied to Structural Members.

E760 - Standard Test Method for Effect of Impact on Bonding of Sprayed Fire Resistive Materials Applied to Structural Members.

E761 - Standard Test Method for Compressive Strength of Sprayed Fire Resistive Materials Applied to Structural Members.

C569 - Standard Test Method for Indentation Hardness of Spray Fire Resistive Materials Applied to Structural Members.

E859 - Standard Test Method for Air Erosion of Sprayed Fire Resistive Materials Applied to Structural Members.

E937 - Standard Test Method for Corrosion of Sprayed Fire Resistive Materials Applied to Bare Steel, Shop Coated Steel, and Galvanized Steel.

C739 - Standard Test Method for Corrosion of Sprayed Fire Resistive Materials Applied to Copper, Steel, and Aluminum.

C739 - Standard Test Method for Fungus Resistance of Sprayed Fire Resistive Materials.

E136 - Standard Test Method for Combustibility of Building Materials.

1.4.2 Underwriters Laboratories Inc. (ULI) Fire Resistive Directory (Latest Edition)

1.4.2 Southwest Research Institute (SWRI) Listing Directory

1.5 DELIVERY, STORAGE, HANDLING

1.5.1 Delivery: Material shall be delivered to the site as follows:

(i) 30 lb. bags of fiber in original manufacturers wrappings, bearing the U.L. or SWRI label, and clearly marked to identify contents.

(ii) 55 gallon steel drums of adhesive with original manufacturers labels, bearing the A-23 trademark, and clearly marked to identify contents.

1.5.2 Storage and Handling: Products have unlimited shelf life and may be stored for prolonged periods of time. Bagged material must be kept dry and protected from moisture. Any bags found to be wet shall be deemed unfit for use, and discarded. Barreled adhesive must be protected from damage, i.e. forklift forks. A-23 Adhesive is not affected by freezing, but must be thoroughly thawed and agitated before use if freezing should occur.

PART 2 - PRODUCTS

2.1 MANUFACTURER

2.1.1 The fireproofing material shall be sprayed fiber type manufactured under the brand name DENDAMIX by:

American Sprayed Fibers, Inc.

PO Box 1111, Fredericksburg, TX, 78624

Tel: (800) 824-2997

2.2 MATERIALS

2.2.1 Materials shall be asbestos-free DENDAMIX Lightweight Fireproofing System, and A-23 liquid adhesive, applied to conform to the drawings, specifications, and following test criteria.

2.2.2 Surface Burning Characteristics: When tested in accordance with ASTM E84, the material shall exhibit the following surface burning characteristics:

FLAME SPREAD.....0

SMOKE DEVELOPED.....0

FUEL CONTRIBUTED.....0

2.2.3 The material shall have been tested and reported by Underwriters Laboratories, Inc. (ULI) and Southwest Research Institute (SWRI) in accordance with the procedure of ASTM E119.

2.2.4 Thickness and Density: When tested in accordance with ASTM E605, the material shall meet the minimum individual and average density values, and minimum thickness values as listed in the appropriate UL or SWRI design, or as required by the authority having jurisdiction.

2.2.5 Cohesion/Adhesion (bond strength): When tested in accordance with ASTM E736, the material shall have a minimum bond strength of 357 lbs. ft 2 applied over uncoated wood, steel, brick, block, concrete, glass, or galvanized steel.

2.2.6 Deflection: When tested in accordance with ASTM E759, the material shall not crack or delaminate from the surface which it was applied.

2.2.7 Bond Impact: When tested in accordance withASTM E760 the material shall not crack or delaminate from the surface whic it was applied.

2.2.8 Compressive Strength: When tested in accordance with ASTM E761 the material shall not deform more than 10% when subjected to a crushing force of 500 lbs. ft 2.

2.2.9 Indentation Hardness: When tested in accordance with ASTM C569, the material shall not indent more than 5 inches (13mm).

2.2.10 Air Erosion: When tested in accordance with ASTM E859, material loss from the finished application shall not exceed .025 G/ft 2.

2.2.11 Corrosion Resistance: When tested in accordance with ASTM E937, the material shall not promote corrosion of bare steel, shop coated steel, or galvanized steel. When tested in accordance with ASTM C739, the material shall not promote corrosion of copper, steel, or aluminum.

2.2.12 Fungus Resistance: When tested in accordance with ASTM C739, the material shall not support the growth of fungus.

2.2.13 Sprayed fireproofing material shall be free of asbestos, asbestos contaminated vermiculite, chrysotile, amosite, crocidolite, actinolite, tremolite, or anthophyllite. Sprayed fireproofing manufacturer shall provide written certification of no asbestos content upon request.

2.2.14 Combustibility: When tested in accordance with ASTM E-136, the material shall be non-combustible.

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 All surfaces to be fireproofed shall be free of dirt, oil, wax, rust, loose mill scale, paints/primers, or any other foreign matter that may impair adhesion of sprayed fireproofing to the substrate. Where necessary, cleaning of the surfaces to be fireproofed shall be the responsibility of the Structural Steel Erector or the General Contractor.

3.1.2 Compatibility of Surfaces: The project architect shall determine whether the painted/primed substrates have been tested in accordance with ASTM E119, with specified fireproofing, to provide the required fire resistance rating.

3.1.3 DENDAMIX will adhere to most clean structural surfaces however, the use of a primer coat may be necessary on painted/primed asbestos lockdown surfaces. Contact manufacturer for further compatibility information.

3.1.4 Clips, hangers, support sleeves and other attachments shall be in place before application of fireproofing.

3.1.5 Rolling compounds and lubricants used in the manufacture of steel decking and steel siding may impair adhesion of fireproofing to the substrate. Steel deck and steel siding specifications shall call for the deck siding manufacturer to supply deck free of such compounds or lubricants. Ducts, pipes, or other suspended matter shall not be installed until fireproofing application is completed.

3.1.6 Metal sidings used in the pre-engineered steel building industry are coated with a wide variety of interior (backer) finishes. Certain types of backer coatings may require the application of a primer to ensure adhesion of sprayed fireproofing to the substrate. The project architext shall determine the type of backer coating used, and compatibility with the fireproofing material. Contact American Sprayed Fibers, Inc. for information on backer coatings, compatibitlity, and acceptable fireproofing primers.

3.1.7 The project architect shall call for a galvanized interior (backer) coating in steel siding specifications if possible.

3.1.8 All roofing applications shall be completed prior to application of fireproofing to the underside of roof decks. All roof traffic shall be prohibited upon beginning of fireproofing application, and until the fireproofing material is fully cured and dried.

3.1.9 All concrete work shall be completed prior to application of fireproofing to underside of steel deck.

3.1.10 The applicator shall provide all necessary drop cloths masking, and coverings, to prevent fireproofing overspray

3.1.11 Application of fireproofing shall not begin until the applicator and general contractor have inspected the surfaces to be fireproofed, and perform bond strength tests to determine these surfaces acceptable to receive fireproofing material.

3.1.12 When the outdoor temperature is below 32 degrees F, substrate and ambient temperature of 35 degrees F or higher must be maintained for 24 hours before, during, and 24 hours after application of the fireproofing. If necessary, the general contractor shall provide heated enclosures to maintain proper temperatures for job progress. Drying time will depend on thickness sprayed.

3.1.13 Beginning of installation means applicator accepts existing substrate conditions and environmental conditions.

3.1.14 Project Architect, Owner, Genearal contractor, and applicator must agree on finish texture of material before commencement of work.

3.2 APPLICATION

3.2.1 Application procedure and equipment shall conform to the fireproofing manufacturers application instructions.

3.2.2 The fireproofing contractor shall cooperate with the other trades in coordination and scheduling of work to avoid impeding job progress.

3.2.3 Maintain proper temperature and ventilation necessary for application and curing/drying of sprayed fireproofing.

3.2.4 All patching and repairing of sprayed fireproofing due to damage by other trades shall be performed under this section and paid for by the trade(s) responsible for the damage.

3.3 FIELD QUALITY CONTROL

3.3.1 Fireproofing shall be installed by factory trained applicators only.

3.3.2 The project architect may select an independent testing laboratory to sample and verify the thickness and density of fireproofing in accordance with the provisions of ASTM E605, Standard Test Methods for Thickness and Density of Sprayed Fire Resistive Materials applied to Structural Members.

3.4 CLEANING

3.4.1 Upon completion of fireproofing work, application equipment shall be removed and all surfaces not to be sprayed shall be cleaned of any fireproofing material deposits.