

SECTION 083344 - OVERHEAD COILING FIRE CURTAINS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Fire- and smoke-protective curtain assemblies for fixed openings.

1.3 COORDINATION

- A. Coordinate fire- and smoke-protective curtain assemblies with power, signal, fire-alarm, and smoke-detection systems specified in Division 26 and Division 28.
- B. Coordinate fire- and smoke-protective curtain assemblies with ceilings for operational clearances and maintenance access requirements.
- C. Coordinate fire- and smoke-protective curtain assemblies with walls for support requirements, rating continuity above ceilings, and recessed wall switches.
- D. Coordinate requirements for metal supports required for fire- and smoke-protective curtain assemblies.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of fire- and smoke-protective curtain assembly and fire door.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protective curtain assemblies.
 - 2. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Include details of fire-protective curtain assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location of each field connection.
 - 3. Detail fabrication and assembly of fire-protective curtain assemblies.
 - 4. Show locations of controls, detectors or replaceable fusible links, and other accessories.

5. Include diagrams for power, signal, and control wiring.

C. Product Schedule: For fire-protective curtain assemblies.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, manufacturer, testing agency, and factory-authorized service representative.

B. Evaluation Reports: For curtain assemblies, from ICC-ES or other qualified testing agency.

C. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire-protective curtain assemblies to include in emergency, operation, and maintenance manuals.

B. Field quality-control reports for required testing.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: An entity experienced in manufacturing smoke-and-draft-control curtain assemblies that have been successfully installed in compliance with requirements of authorities having jurisdiction.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

C. Fire-Protective Curtain Assembly Inspector Qualifications: Inspector for field quality control inspections of fire- and smoke-protective curtain assemblies complying with NFPA 80.

1.8 FIELD CONDITIONS

A. Field Measurements: Field-verify and coordinate dimensions and indicate measurements on Shop Drawings.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of curtain assemblies that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

- A. Source Limitations: Obtain fire-protective curtains from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Protective Curtain Assemblies: Complying with NFPA 80; listed and labeled by qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible in accordance with UL 10D.
 - 1. Oversize Rated Curtain Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that curtain assemblies comply with standard construction requirements for tested and labeled fire-rated curtain assemblies, except for size.
 - 2. Smoke Control: Provide smoke- and fire-protective curtain assemblies that are listed and labeled with the letter "S" on the rating label by a qualified testing agency for smoke- and draft-control based on testing in accordance with UL 1784; with maximum air-leakage rate of **3.0 cfm/sq. ft. (0.01524 cu. m/s x sq. m)** of opening at **0.10 inch wg (24.9 Pa)** for both ambient and elevated temperature tests.
- B. Curtain Fabric Fire-Test-Response Characteristics: Provide products that pass NFPA 701, as determined by testing of fabrics that were treated using treatment-application method intended for use for this Project by a testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 FIRE- AND SMOKE- PROTECTIVE CURTAIN ASSEMBLIES FOR FIXED OPENINGS

- A. Alarm-activated fire- and smoke-protective curtain assemblies restrained by curtain guides at each jamb of an opening.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Door Systems.
 - 2. McKeon Door Company.
 - 3. Smoke Guard, a CSW Industrials Company.
 - 4. U.S. Smoke & Fire.
- C. Fire-Resistance Ratings: Comply with ASTM E119 (without hose stream test); testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Rating: 1-hour.

- D. Smoke Containment: Assemblies complying with UL 1784 for air leakage.
- E. Operation: Motorized automatic operation with controlled descent.
- F. Automatic-Closing Device: Equip each fire-rated door with an automatic-closing device or holder-release mechanism and governor unit complying with UL 864 and NFPA 80 and an easily tested and reset release mechanism. Automatic-closing device shall be designed for activation by the following:
 - G. Hood/Head Box: Manufactured from galvanized steel conforming to ASTM A653/A653M; rated at the same temperature as the curtain fabric.
 - H. Curtain: Manufacturer's standard multilayer glass-fiber fabric woven with stainless steel wires and coated on one or both sides.
 - I. Roller: Cold-formed steel tube conforming to ASTM A500/A500M.
 - J. Side Guides: Formed from galvanized-steel sheet conforming to ASTM A653/A653M, with integral pressure-retaining tabs.
 - K. Motor Operator: Provide factory-assembled electric operation system of size and capacity recommended by curtain manufacturer for assembly specified, with electric motors and factory-prewired motor controls, control devices, and accessories required for proper operation.
 - 1. Include wiring from control stations to motors. Coordinate operator wiring requirements and electrical characteristics with building electrical system.
 - 2. Electrical Components, Devices, and Accessories: Listed and labeled in accordance with NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 3. Battery Backup: Manufacturer's standard battery backup sized for motor power requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
- B. Examine locations of electrical connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install fire-protective curtain assemblies in accordance with manufacturer's written installation instructions and in conformance with NFPA 80.
- B. Power-Operated Curtains: Install in accordance with UL 864.

- C. Install anchorage devices to securely fasten assembly to substrate and building framing without distortion or stress.
- D. Securely brace components suspended from structure.
- E. Fit and align assembly, including vertical guides, level and plumb, to provide smooth operation.
- F. Adjust fire-protective curtain assemblies to function smoothly, as recommended by manufacturer.

3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. Test release mechanism, closing, and alarm operations when activated by smoke detector or building's fire-alarm system. Test manual operation of closed curtain. Reset closing mechanism after successful test.
 - 2. Inspections: Inspect each fire-protective curtain in accordance with NFPA 80.
- B. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- C. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.
- D. Prepare and submit separate inspection report for each fire-protective curtain assembly indicating compliance with each item listed in NFPA 80.

3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling smoke curtains.

3.5 MAINTENANCE

- A. Engage a manufacturer's authorized service representative to test, adjust, and maintain the fire-protective assemblies once per year as required by NFPA 80.

END OF SECTION 083344