SECTION 083344 - OVERHEAD COILING FIRE CURTAINS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Fire- and smoke-protective curtain assemblies for fixed openings.

Fire- and smoke-protective curtain assemblies for corridors and perimeters.

Fire-protective curtain assemblies for horizontal openings .

Overhead coiling fabric fire doors.

Refer to sections listed below for cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections. Sections listed below are for spec editor’s and design team coordination and are to remain as Editor’s Notes. Remove referenced specification sections within the body of the specification if not applicable to the project.

Section 083343 "Overhead Coiling Smoke Curtains" for overhead coiling and fixed smoke-containment curtains.

* + - 1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.
      1. COORDINATION

Review requirements with Design team and update requirements if required.

* + - * 1. Coordinate fire- and smoke-protective curtain assemblies with power, signal, fire-alarm, and smoke-detection systems specified in Division 26 and Division 28.
        2. Coordinate fire- and smoke-protective curtain assemblies with ceilings for operational clearances and maintenance access requirements.
        3. Coordinate fire- and smoke-protective curtain assemblies with walls for support requirements, rating continuity above ceilings, and recessed wall switches.
        4. Coordinate requirements for metal supports required for fire- and smoke-protective curtain assemblies.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of fire- and smoke-protective curtain assembly and fire door.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protective curtain assemblies.

Include points of attachment and their corresponding static and dynamic loads imposed on structure.

Include manufacturer’s installation instructions.

Retain subparagraph below for power-operated smoke curtains.

Include ratings, operating components, electrical characteristics, control systems, and furnished specialties and accessories.

* + - * 1. Shop Drawings:

Include plans, elevations, sections, and attachment details.

Include details of fire-protective curtain assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location of each field connection.

Detail fabrication and assembly of fire-protective curtain assemblies.

Show locations of controls[**, detectors or replaceable fusible links,**] and other accessories.

Include diagrams for power, signal, and control wiring.

* + - * 1. Product Schedule: For fire-protective curtain assemblies. Use same designations indicated on Drawings.
        2. Quality Controls Submittals:

Qualification Data: For Installer, manufacturer, testing agency, and Company Service Advisor.

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

Design Consultant to review code references and verify that the referenced sections/tables are current. Note that code references shall be based on the current version of the Uniform Code.

Retain "Field quality-control reports" paragraph below if Contractor is responsible for field quality-control testing and inspecting.

Field quality-control reports.

Sample Warranty: For manufacturer's special warranty.

* + - 1. Contract Closeout Submittals:

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

Field quality-control reports for required testing.

* + - 1. QUALITY ASSURANCE
         1. 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.
         2. 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.
         3. Fire-Protective Curtain Assembly Inspector Qualifications: Inspector for field quality control inspections of fire- and smoke-protective curtain assemblies complying with NFPA 80.
      2. FIELD CONDITIONS
         1. Field Measurements: Field-verify and coordinate dimensions and indicate measurements on Shop Drawings.
      3. WARRANTY

When warranties are required, verify with Director’s Representative that warranties stated in this article are not less than remedies available to the Facility under prevailing local laws.

* + - * 1. Special Warranty: Manufacturer agrees to repair or replace components of curtain assemblies that fail in materials or workmanship within specified warranty period.

Verify available warranties and warranty periods for curtain assemblies and components.

Warranty Period: [**Two**] <**Insert number**> years from date of Substantial Completion.

1. PRODUCTS

Before selecting manufacturers and products, verify availability, suitability for intended applications, and compliance with minimum performance requirements.

Product options commonly available from manufacturers are included in square brackets throughout the Section Text. Not every manufacturer listed can provide every option offered; verify availability with manufacturers.

* + - 1. MANUFACTURERS, GENERAL
         1. Source Limitations: Obtain fire-protective curtains from single source from single manufacturer.

Retain subparagraph below or revise to suit Project.

Obtain operators and controls from fire-protective curtain manufacturer.

* + - 1. PERFORMANCE REQUIREMENTS

Retain "Fire-Protective Curtain Assemblies" paragraph below if applicable. Overhead coiling curtains are labeled by UL for sizes not exceeding 152 sq. ft., with no dimension exceeding 13 feet, 6 inches. See the Evaluations.

* + - * 1. 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.

Retain "Oversize Rated Curtain Assemblies" subparagraph below if required and acceptable to authorities having jurisdiction.

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.

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. opening at 0.10 inch wg for both ambient and elevated temperature tests.

* + - * 1. 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.
        2. 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.

Retain "Seismic Performance" paragraph below if seismic design of draft curtains is required for Project. Revise to indicate specific loads determined by Project's structural engineer or refer to loads indicated on Drawings. Model building codes and ASCE/SEI 7 establish criteria for buildings and components subject to earthquake motions. Coordinate requirements with Project's structural engineer.

* + - * 1. Seismic Performance: Smoke-protective curtain assembly shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

The value in "Component Importance Factor" subparagraph below is determined in accordance with ASCE/SEI 7 based on anticipated risk and need. Revise subparagraph if more than one sectional door is required and they have different component importance factors. Coordinate requirement with Project's structural engineer.

Component Importance Factor: [**1.5**] [**1.0**] <**Insert requirements**>.

* + - 1. FIRE- AND SMOKE- PROTECTIVE CURTAIN ASSEMBLIES FOR FIXED OPENINGS
         1. Alarm-activated fire- and smoke-protective curtain assemblies restrained by curtain guides at each jamb of an opening.

Consult manufacturers for recommendations and availability. Local New York State and area manufacturers and distributers are preferred.

* + - * 1. 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.

Rating: [**1-hour**] [**2-hour**] [**3-hour**] [**As indicated in door schedule**].

* + - * 1. Smoke Containment: Assemblies complying with UL 1784 for air leakage.
        2. Operation: Motorized automatic operation with controlled descent.
        3. 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:

Retain one or more of four subparagraphs below and insert others if required to suit Project. If more than one type of activation (or combination) is required, identify primary and secondary closing devices. Verify requirements of authorities having jurisdiction. See the Evaluations.

Retain first subparagraph below to comply with NFPA 80 requirement for fusible links on both sides of door opening. Revise if not required on both sides of door opening or to add fusible-link ceiling unit for use with suspended ceilings.

Replaceable fusible links with temperature rise and melting point of [**165 deg F**] <**Insert temperature**> interconnected and mounted on both sides of door opening.

Manufacturer's standard UL-labeled smoke detector and door-holder-release devices.

Manufacturer's standard UL-labeled heat detector and door-holder-release devices.

Building fire-detection, smoke-detection, and fire-alarm systems.

Retain "Push-to-Exit Button" paragraph below if emergency egress operation is required.

* + - * 1. Push-to-Exit Button: Button briefly opens curtain to allow emergency egress and automatically recloses curtain after a set period of time.
        2. Hood/Head Box: Manufactured from galvanized steel conforming to ASTM A653; rated at the same temperature as the curtain fabric.
        3. Curtain: Manufacturer's standard multilayer glass-fiber fabric woven with stainless steel wires and coated on one or both sides.

Retain "Fabric Egress Slot" subparagraph below if optional egress is required.

Fabric Egress Slot: Outlined by stenciling.

Curtain fabric to include an overlap with magnets at center.

Fabric Pull Strap: Mounted on pull side of egress slot at 42 inches AFF.

* + - * 1. Roller: Cold-formed steel tube conforming to ASTM A500.

Retain "Side Guides" paragraph for curtains installed in fixed openings.

* + - * 1. Side Guides: Formed from galvanized-steel sheet conforming to ASTM A653, with integral pressure-retaining tabs.
        2. 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.

Include wiring from control stations to motors. Coordinate operator wiring requirements and electrical characteristics with building electrical system.

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.

Battery Backup: Manufacturer's standard battery backup sized for motor power requirements.

* + - 1. FIRE- AND SMOKE-PROTECTIVE CURTAIN ASSEMBLIES FOR CORRIDORS AND PERIMETERS
         1. Alarm-activated fire- and smoke-protective curtain assemblies, employing either single or multiple curtains overlapping at the sides to provide continuous rated closure of an opening.

Consult manufacturers for recommendations and availability. Local New York State and area manufacturers and distributers are preferred.

* + - * 1. 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.

Rating: [**1-hour**] [**2-hour**] [**3-hour**] [**As indicated in Door Schedule**].

* + - * 1. Smoke Containment: Assemblies complying with UL 1784 for air leakage.
        2. Operation: Motorized automatic operation with controlled descent.
        3. Automatic-Closing Device: Equip each fire-rated curtain 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:

Retain one or more of four subparagraphs below and insert others if required to suit Project. If more than one type of activation (or combination) is required, identify primary and secondary closing devices. Verify requirements of authorities having jurisdiction. See the Evaluations.

Retain first subparagraph below to comply with NFPA 80 requirement for fusible links on both sides of door opening. Revise if not required on both sides of door opening or to add fusible-link ceiling unit for use with suspended ceilings.

Replaceable fusible links with temperature rise and melting point of [**165 deg F**] <**Insert temperature**> interconnected and mounted on both sides of door opening.

Manufacturer's standard UL-labeled smoke detector and door-holder-release devices.

Manufacturer's standard UL-labeled heat detector and door-holder-release devices.

Building fire-detection, smoke-detection, and fire-alarm systems.

Retain "Push-to-Exit Button" paragraph below if emergency egress operation is required.

* + - * 1. Push-to-Exit Button: Button briefly opens curtain to allow emergency egress and automatically recloses curtain after a set period of time.
        2. Hood/Head Box: Manufactured from galvanized steel conforming to ASTM A653; rated at the same temperature as the curtain fabric.
        3. Curtain: Manufacturer's standard multilayer glass-fiber fabric woven with stainless steel wires and coated on one or both sides.

Retain "Fabric Egress Slot" subparagraph below if optional egress is required.

Fabric Egress Slot: Outlined by stenciling.

Curtain fabric to include an overlap with magnets at center.

Fabric Pull Strap: Mounted on pull side of egress slot at 42 inches AFF.

Retain "Corner Curtain" paragraph below for curtain assembly that requires a change of direction.

* + - * 1. Corner Curtain: Fabricated accordion-fold corner curtain assembly to maintain fire and smoke rating at intersection of curtains not in the same plane.
        2. Roller: Cold-formed steel tube conforming to ASTM A500.

Retain "Side Guides" where ends of curtains terminate at walls.

* + - * 1. Side Guides: Formed from galvanized-steel sheet conforming to ASTM A653, with integral pressure-retaining tabs.
        2. 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.

Include wiring from control stations to motors. Coordinate operator wiring requirements and electrical characteristics with building electrical system.

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.

Battery Backup: Manufacturer's standard battery backup sized for motor power requirements.

* + - 1. FIRE-PROTECTIVE CURTAIN ASSEMBLIES FOR HORIZONTAL OPENINGS
         1. Alarm-activated fire- protective curtain assemblies restrained by curtain guides at each side of a horizontal opening.

Consult manufacturers for recommendations and availability. Local New York State and area manufacturers and distributers are preferred.

* + - * 1. 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.

Rating: [**1-hour**] [**2-hour**] [**3-hour**] [**As indicated in door schedule**].

* + - * 1. Operation: Motor-driven automatic operation.
        2. 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:

Retain one or more of four subparagraphs below and insert others if required to suit Project. If more than one type of activation (or combination) is required, identify primary and secondary closing devices. Verify requirements of authorities having jurisdiction. See the Evaluations.

Retain first subparagraph below to comply with NFPA 80 requirement for fusible links on both sides of door opening. Revise if not required on both sides of door opening or to add fusible-link ceiling unit for use with suspended ceilings.

Replaceable fusible links with temperature rise and melting point of [**165 deg F**] <**Insert temperature**> interconnected and mounted on both sides of door opening.

Manufacturer's standard UL-labeled smoke detector and door-holder-release devices.

Manufacturer's standard UL-labeled heat detector and door-holder-release devices.

Building fire-detection, smoke-detection, and fire-alarm systems.

* + - * 1. Head Box: Manufactured from galvanized steel conforming to ASTM A653; rated at the same temperature as the curtain fabric.
        2. Curtain: Manufacturer's standard multilayer glass-fiber fabric woven with stainless steel wires and coated on one or both sides.
        3. Roller: Cold-formed steel tube conforming to ASTM A500.
        4. Side Guides: Formed from galvanized-steel sheet conforming to ASTM A653, with integral pressure retaining tabs.
        5. 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.

Include wiring from control stations to motors. Coordinate operator wiring requirements and electrical characteristics with building electrical system.

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.

Battery Backup: Manufacturer's standard battery backup sized for motor power requirements.

* + - 1. OVERHEAD COILING FABRIC FIRE DOORS
         1. Fire- and Smoke-Protective Curtain Assemblies for Fixed Openings: Alarm-activated fire- and smoke-protective curtain assemblies restrained by curtain guides at each jamb of an opening and complying with the hose-stream and temperature-rise requirements of UL 10B.

Consult manufacturers for recommendations and availability. Local New York State and area manufacturers and distributers are preferred.

* + - * 1. Fire-Resistance Ratings: Comply with ASTM E119 (with hose stream test and temperature rise); testing by a qualified testing agency in accordance with UL 10B. Identify products with appropriate markings of applicable testing agency.

Rating: [**1-1/2-hour**] [**2-hour**] [**3-hour**] [**As indicated in door schedule**].

* + - * 1. Operation: Motor-driven automatic operation.
        2. 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:

Retain one or more of four subparagraphs below and insert others if required to suit Project. If more than one type of activation (or combination) is required, identify primary and secondary closing devices. Verify requirements of authorities having jurisdiction. See the Evaluations.

Retain first subparagraph below to comply with NFPA 80 requirement for fusible links on both sides of door opening. Revise if not required on both sides of door opening or to add fusible-link ceiling unit for use with suspended ceilings.

Replaceable fusible links with temperature rise and melting point of [**165 deg F**] <**Insert temperature**> interconnected and mounted on both sides of door opening.

Manufacturer's standard UL-labeled smoke detector and door-holder-release devices.

Manufacturer's standard UL-labeled heat detector and door-holder-release devices.

Building fire-detection, smoke-detection, and fire-alarm systems.

* + - * 1. Hood/Head Box: Manufactured from galvanized steel conforming to ASTM A653; rated at the same temperature as the curtain fabric.
        2. Curtain: Manufacturer's standard multilayer glass-fiber fabric woven with stainless steel wires and coated on one or both sides.
        3. Roller: Cold-formed steel tube conforming to ASTM A500.
        4. Side Guides: Formed from galvanized steel sheet conforming to ASTM A653, with integral pressure retaining tabs.
        5. 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.

Include wiring from control stations to motors. Coordinate operator wiring requirements and electrical characteristics with building electrical system.

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.

Battery Backup: Manufacturer's standard battery backup sized for motor power requirements.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
          2. Examine locations of electrical connections.
          3. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. INSTALLATION
          1. Install fire-protective curtain assemblies in accordance with manufacturer's written installation instructions and in conformance with NFPA 80.
          2. Power-Operated Curtains: Install in accordance with UL 864.
          3. Install anchorage devices to securely fasten assembly to substrate and building framing without distortion or stress.
          4. Securely brace components suspended from structure.
          5. Fit and align assembly, including vertical guides, level and plumb, to provide smooth operation.
          6. Adjust fire-protective curtain assemblies to function smoothly, as recommended by manufacturer.
       3. FIELD QUALITY CONTROL

Retain "Testing Agency" paragraph below to identify who shall perform tests and inspections. Retain "Field quality-control reports" paragraph in "Informational Submittals" Article.

* + - * 1. Testing Agency: Engage a qualified opening protective assembly inspector to perform tests and inspections and to furnish reports to Director’s Representative.
        2. Perform the following tests and inspections[**with the assistance of a Company Service Advisor**]:

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.

Inspections: Inspect each fire-protective curtain in accordance with NFPA 80.

* + - * 1. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
        2. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.
        3. Prepare and submit separate inspection report for each fire-protective curtain assembly indicating compliance with each item listed in NFPA 80.
      1. DEMONSTRATION
         1. Engage a Company Service Advisor to train Facility’s maintenance personnel to adjust, operate, and maintain overhead coiling smoke curtains.
      2. MAINTENANCE
         1. 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