SECTION 08 33 36
ROLLING STEEL STORM SHELTER DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rolling steel storm shelter doors.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 06 20 00 - Finish Carpentry.

C. Section 08 33 00 - Coiling Doors and Grilles.

D. Section 08 71 00 - Door Hardware.

E. Section 09 90 00 - Painting and Coating.

F. Section 26 27 16 - Electrical Cabinets and Enclosures.

G. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

A. ANSI/DASMA 108 - American National Standards Institute Standard Method For Testing Sectional Garage Doors And Rolling Doors: Determination Of Structural Performance Under Uniform Static Air Pressure Difference.

B. NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.

C. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.

D. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

E. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

F. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

G. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

I. ASTM F 3038 - Standard Test Method for Timed Evaluation of Forced-Entry-Resistant Systems

J. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

K. NEMA MG 1 - Motors and Generators.

L. NIJ Standard 0108.01 - Ballistic Resistant Protective Materials

M. NFPA 252 - Fire Tests of Fire Door Assemblies.

N. UL 10B - Fire Tests of Fire Door Assemblies.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Details of construction and fabrication.
   4. Installation instructions.

C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.

B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.

C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 COORDINATION

A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 10,000 cycles, whichever occurs first.

B. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 10,000 cycles, whichever occurs first.

C. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 10,000 cycles, whichever occurs first.

D. PowderGuard Finish
   1. PowderGuard Premium Applied to curtain, guides, bottom bar, headplates: Manufacturer's limited Premium Finish warranty for 2 years.
   2. PowderGuard Zinc Base Coat applied to guides, bottom bar, headplates plus PowderGuard Premium applied to curtain and top coat for guides, bottom bar, headplates: Manufacturer's limited Zinc Finish warranty for 4 years.
   3. PowderGuard Textured: Applied to curtain, guides, bottom bar, headplates: Manufacturer's limited Textured Finish warranty for 3 years.
   4. PowderGuard Zinc Base Coat applied to guides, bottom bar, headplates plus PowderGuard Textured applied to curtain and top coat for guides, bottom bar, headplates: Manufacturer's limited Zinc Finish warranty for 4 years.

5. PowderGuard Max: Applied to curtain, guides, bottom bar, headplates: Manufacturer's limited Max Finish warranty for 5 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Overhead Door (tm) Brand, which is located at: 2501 S. State Hwy. 121 Suite 200; Lewisville, TX 75067; Toll Free Tel: 800-275-3290; Tel: 469-549-7100; Fax: 972-906-1499; Email: request info (info@overheaddoor.com); Web: https://www.overheaddoor.com

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 ROLLING STEEL STORM SHELTER DOORS

A. Overhead Door Brand, Model 610F Rolling Steel Storm Shelter Door
1. Description: Doors are Labeled for use as a Windstorm Rated Assembly and Tested in accordance with ICC 500-2020 and are Hurricane rated for 200 psf and tested to 300 psf and Tornado rated for 250 psf.
   a. Maximum Tested Size = 16ft Width x 16ft Height
2. Curtain: Interlocking roll-formed slats with endlocks attached to each end of alternate slats to prevent lateral movement.
   a. Slat Profiles/Material:
      1) Curved profile type C-600 for doors up to 12 feet (3.66 m) wide.
         a) 12-gauge G40 galvanized steel.
3. Bottom Bar: Consists of two equal angles, 0.12 inch minimum thickness, to stiffen curtain. Angle shall be:
   a. Steel.
4. Guides:
   a. Three structural angle guide assembly fabricated of:
      1) Steel.
   b. Provide with integral windlock bars and removable bottom bar stops.
5. Brackets: Design to enclose ends of coil and provide support for counterbalance pipe at each end. Fabricate of steel plates, with permanently sealed ball bearings. Thickness shall be:
   a. 3/16 inch minimum.
   b. 1/4 inch minimum.
6. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
7. Hood: Hood to enclose curtain coil and counterbalance mechanism. Hood fabricated of sheet metal, flanged at top for attachment to header and flanged at bottom to provide longitudinal stiffness. Provide with a steel hood baffle. Fabricate of:
   a. Minimum 24-gauge galvanized steel.
8. Finish:
   a. Galvanized Steel: Powder Coat.
      1) PowderGuard Premium powder coat, color as selected by the Architect.
   b. Non-Galvanized Surfaces: Shop coat of rust inhibitive primer on non-galvanized surfaces and operating mechanisms.
9. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second..
   a. Operation: Design door assembly, including operator, to operate for not less

than 10,000 cycles.
b. Operator Controls:
1) Push-button operated control stations with open, close, and stop buttons.
2) Key operation with open, close, and stop controls.
3) Push-button and key operated control stations with open, close, and stop buttons.
4) Controls for interior location.
5) Controls for exterior location.
6) Controls for both interior and exterior location.
7) Controls surface mounted.
8) Controls flush mounted.
c. Special Operation:
1) Vehicle detector operation.
2) Radio control operation.
3) Card reader control.
4) Photocell operation.
5) Door timer operation.
6) Commercial light package.
7) Explosion and dust ignition proof control wiring.
8) Motor Voltage:
a) 115/230 single phase, 60 Hz.
b) 208/230 three phase.
c) 460 three phase.

10. Locking:
a. Chain keeper locks for chain hoist operation.
b. Interior slide bolt lock for electric operation with interlock switch.
c. Cylinder lock.
11. Mounting: Face of Wall.

B. Overhead Door Brand, Model 610FE Rolling Steel Storm Shelter and Forced Entry rated Door.
1. Description: Doors are Labeled for use as a Windstorm Rated Assembly and Tested in accordance with ICC 500-2020 and are Hurricane rated for 200 psf and tested to 300 psf and Tornado rated for 250 psf. Doors are also Forced Entry ASTM F 3038 rated for up to 30 Minutes with Ballistics Ratings that include .22 LR and .38 Special in accordance with NIJ 0108.01
a. Maximum Tested Size = 16ft Width x 16ft Height
2. Curtain: Interlocking roll-formed slats with endlocks attached to each end of alternate slats to prevent lateral movement.
a. Slat Profiles/Material:
1) Curved profile type C-600 for doors up to 12 feet (3.66 m) wide.
a) 12-gauge G40 galvanized steel.
3. Bottom Bar: Consists of two equal angles, 0.12 inch minimum thickness, to stiffen curtain. Angle shall be:
a. Steel.
4. Guides:
a. Three structural angle guide assembly fabricated of:
1) Steel.
b. Provide with integral windlock bars and removable bottom bar stops.
5. Brackets: Design to enclose ends of coil and provide support for counterbalance pipe at each end. Fabricate of steel plates, with permanently sealed ball bearings. Thickness shall be:
a. 3/16 inch minimum.
b. 1/4 inch minimum.
6. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span.

Counterbalance is adjustable by means of an adjusting tension wheel.

7. Hood: Hood to enclose curtain coil and counterbalance mechanism. Hood fabricated of sheet metal, flanged at top for attachment to header and flanged at bottom to provide longitudinal stiffness. Provide with a steel hood baffle. Fabricate of:
   a. Minimum 24-gauge galvanized steel.
8. Finish:
   a. Galvanized Steel: Powder Coat.
      1) PowderGuard Premium powder coat, color as selected by the Architect.
   b. Non-Galvanized Surfaces: Shop coat of rust inhibitive primer on non-galvanized surfaces and operating mechanisms.
9. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
   a. Operation: Design door assembly, including operator, to operate for not less than 10,000 cycles.
   b. Operator Controls:
      1) Push-button operated control stations with open, close, and stop buttons.
      2) Key operation with open, close, and stop controls.
      3) Push-button and key operated control stations with open, close, and stop buttons.
      4) Controls for interior location.
      5) Controls for exterior location.
      6) Controls for both interior and exterior location.
      7) Controls surface mounted.
      8) Controls flush mounted.
   c. Special Operation:
      1) Vehicle detector operation.
      2) Radio control operation.
      3) Card reader control.
      4) Photocell operation.
      5) Door timer operation.
      6) Commercial light package.
      7) Explosion and dust ignition proof control wiring.
      8) Motor Voltage:
         a) 115/230 single phase, 60 Hz.
         b) 208/230 three phase,
         c) 460 three phase;
10. Locking:
    a. Chain keeper locks for chain hoist operation.
    b. Interior slide bolt lock for electric operation with interlock switch.
    c. Cylinder lock.
11. Mounting: Face of Wall.

C. Overhead Door Brand, Model 610FR Rolling Steel Storm Shelter and Fire rated Door.
   1. Description: Doors are Labeled for use as a Windstorm Rated Assembly and Tested in accordance with ICC 500-2020 and are Hurricane rated for 200 psf and tested to 300 psf and Tornado rated for 250 psf. Doors are also Certified to: UL 10B, NFPA 252, CAN / ULC S104 - 4 Hour Fire Rating.
      a. Maximum Tested Size = 16ft Width x 16ft Height
   2. Curtain: Interlocking roll-formed slats with endlocks attached to each end of alternate slats to prevent lateral movement.
      a. Slat Profiles/Material:
         1) Curved profile type C-600 for doors up to 12 feet (3.66 m) wide.
            a) 12-gauge G40 galvanized steel.
   3. Bottom Bar: Consists of two equal angles, 0.12 inch minimum thickness, to stiffen curtain. Angle shall be:

a. Steel.

4. Guides:
   a. Three structural angle guide assembly fabricated of:
      1) Steel.
   b. Provide with integral windlock bars and removable bottom bar stops.
5. Brackets: Design to enclose ends of coil and provide support for counterbalance pipe at each end. Fabricate of steel plates, with permanently sealed ball bearings. Thickness shall be:
   a. 3/16 inch minimum.
   b. 1/4 inch minimum.
6. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
7. Hood: Hood to enclose curtain coil and counterbalance mechanism. Hood fabricated of sheet metal, flanged at top for attachment to header and flanged at bottom to provide longitudinal stiffness. Provide with a steel hood baffle. Fabricate of:
   a. Minimum 24-gauge galvanized steel.
8. Finish:
   a. Galvanized Steel: Powder Coat.
      1) PowderGuard Premium powder coat, color as selected by the Architect.
   b. Non-Galvanized Surfaces: Shop coat of rust inhibitive primer on non-galvanized surfaces and operating mechanisms.
9. FDO Electric Motor Operation: UL 325-2010: NEMA 1 enclosure, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
   a. Operation: Design door assembly, including operator, to operate for not less than 10,000 cycles.
   b. Operator Controls:
      1) Push-button operated control stations with open, close, and stop buttons.
      2) Key operation with open, close, and stop controls.
      3) Push-button and key operated control stations with open, close, and stop buttons.
      4) Controls for interior location.
      5) Controls for exterior location.
      6) Controls for both interior and exterior location.
      7) Controls surface mounted.
      8) Controls flush mounted.
   c. Special Operation:
      1) Vehicle detector operation.
      2) Radio control operation.
      3) Card reader control.
      4) Photocell operation.
      5) Door timer operation.
      6) Commercial light package.
      7) Explosion and dust ignition proof control wiring.
      8) Motor Voltage:
         a) 115/230 single phase, 60 Hz.
         b) 208/230 three phase.
         c) 460 three phase.
10. Locking:
    a. Chain keeper locks for chain hoist operation.
    b. Interior slide bolt lock for electric operation with interlock switch.
    c. Cylinder lock.
11. Mounting: Face of Wall.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.

B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install rolling steel storm shelter doors in accordance with the manufacturer's instructions and CC 500-2014.
   1. Anchors used to install impact-protective systems require a special inspection to verify compliance with the required design information listed in Section 106.2.1 of CC 500-2014
   2. Contractors who install the assembly shall acknowledge their responsibility by submitting a written statement to the authority having jurisdiction.

C. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

D. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

E. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

F. Coordinate installation of electrical service with Section 26 05 00 - Common Work Results for Electrical. Complete wiring from disconnect to unit components.

G. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07 90 00 - Joint Protection.

H. Install perimeter trim and closures.

I. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.4 ADJUSTING

A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.

B. Remove labels and visible markings.

C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION