



SECTION 08 33 00
COILING DOORS

****Displaying notes to specifier.****

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**** NOTE TO SPECIFIER ** C.H.I. Overhead Doors; Overhead Doors.**

This section is based on the products of C.H.I. Overhead Doors, which is located at:
1485 Sunrise Drive.
Arthur, IL 61911.
Tel: (800) 677-2650.
Fax: (800) 738-5006.
E-mail: aia@chiohd.com
Web: www.chiohd.com.

C.H.I. Overhead Doors, a NUCOR (NYSE: NUE) company, has been manufacturing overhead doors for over 40 years. Through our authorized dealer network across North America, you can access our entire product line including commercial and residential sectional doors, rolling service and fire doors or shutters, and high-performance doors. C.H.I. integrates premium-quality materials with superior designs, workmanship, and a strong focus on end user satisfaction. Dedicated to continuing the best customer service and dealer support in the industry, it is apparent why C.H.I. is referred to as "The Door to Quality". C.H.I. is headquartered in Arthur, IL with additional manufacturing in Terre Haute, IN. For more information visit chiohd.com.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Overhead coiling service doors; fire-rated, non-insulated. (Models 7400)
- B. Electric motor operation for overhead coiling service doors, fire rated.

1.2 RELATED SECTIONS

- A. Section 05 10 00 - Structural Metal Framing.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 09 90 00 - Painting and Coating.
- D. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM A480/A480M - Standard Specification for Flat-Rolled Stainless and Heat-

- Resisting Steel Plate, Sheet, and Strip.
 - 2. ASTM A653/A653M - Standard Specification for Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 3. ASTM A666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 - 4. ASTM B209 - Standard Specification for Aluminum - Alloy Sheet and Plate.
 - 5. ASTM B221 - Standard Specification for Aluminum - Alloy Extruded Bars, Rods, Wires, Shapes and Tubes.
- B. National Fire Protection Association NFPA 80 - Standard for Fire Doors and Fire Windows.
 - C. Underwriters Laboratories (UL) 10B - Standard for Fire Tests of Door Assemblies.
 - D. Consult factory for projects requiring Buy American requirements for American Recovery and Reinvestment Act, Build America Buy America Act or American Iron and Steel Certification

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Shop Drawings: Indicate opening dimensions and required tolerances, jamb connection details, anchorage spacing, hardware locations, installation details, and special conditions.
- C. Product Data: Provide information on components, application, hardware and accessories.
- D. Samples for Initial Selection: Provide manufacturer's finish charts showing full range of colors and textures available for units with factory applied finishes:
 - 1. Include similar samples of accessories involving color selection.
- E. Samples for Verification: Provide for each type of exposed finish on the following components in manufacturer's standard sizes:
 - 1. Curtain slats.
 - 2. Bottom bar.
- F. Sustainable Design Submittals:
 - 1. Recycled products: Indicate percentage of recycled material used in the manufacturing of products and percentage classified as post-consumer.
 - 2. Regional products: Indicate location of product manufacturer and distance from manufacturing facility to project site.
- G. Closeout Submittals: Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Company specializing in the manufacturing of products specified in this section and with a minimum of five years' experience.
- B. Installer Qualifications: Installer shall be authorized and qualified to install overhead door systems on the type and scope of project specified.
- C. Source Limitations: Provide overhead coiling doors from one manufacturer for each type of door. Provide operators and other accessories from source acceptable to overhead coiling door manufacturer.
- D. Performance Requirements:
 - 1. Fire Door Construction: Conform to UL 10B.

2. Installed Fire Door Assembly: Conform to NFPA 80.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of all materials in accordance with federal, state, and local laws.

1.7 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 recommended limits.

1.8 WARRANTY

- A. Provide an original of the manufacturer's limited warranty against manufacturing defects and product workmanship.
 1. All models except 6241: 5-year limited warranty to be free from defects in materials and workmanship from date of manufacture.
 2. Model 6241: 1 year limited warranty to be free from defects in materials and workmanship from date of manufacture.
 3. Spring wire is warranted for 1 year.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: C.H.I. Overhead Doors, which is located at: 1485 Sunrise Dr.; Arthur, IL 61911; Toll Free Tel: 800-677-2650; Fax: 217-543-4454; Email: aia@chiohd.com; Web: <http://www.chiohd.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 OVERHEAD COILING SERVICE DOORS; FIRE RATED, NON-INSULATED

- A. Performance Requirements:
 1. Fire Door Construction: Conform to UL 10B.
 2. Installed Fire Door Assembly: Conform to NFPA 80.
 3. Seismic Performance: Evaluated to withstand earthquake motions determined per ASCE/SEI 7.
 4. Operation: 20,000 cycles for door assembly including operator. (Standard)
 5. Operation: High demand, 50,000 cycles for door assembly including operator.
 6. Operation: High demand, 100,000 cycles for door assembly including operator.
 7. LEED Requirements:
 - a. Recycled Content, Minimum Percent: _____.
 - b. Percent Classified as Post Consumer, Minimum Percent: _____.
- B. Model 7400 as manufactured by C.H.I. Overhead Doors.
 1. Fire Rating
 - a. Hour Rating: 3/4 hour. UL listed.
 - b. Hour Rating: 1-1/2 hours. UL listed.
 - c. Hour Rating: 3 hours. UL listed.
 - d. Hour Rating: 4 hours. UL listed.
 2. Curtain: Curved faced, full width, interlocking roll formed slats. Individual slat profile is

- 2-3/4 x 3/4 inch (70 x 19 mm)
- a. Slat Material: 18-gauge, 0.045 inch (1.15 mm) polyester painted (G90 coating) galvanized steel.
 - 1) Finish: Gray
 - 2) Finish: White
 - 3) Finish: Powder Coat Upgrade. RAL#_____ available up to 20 ft-2 inches wide (6147 mm)
 - 4) Max Width (W): 24 ft-0 inches (7315). Max height limited by width due to overall curtain size.
 - b. Slat Material: 20-gauge, 0.034 inch (0.87 mm) polyester painted (G90 coating) galvanized steel.
 - 1) Finish: Gray
 - 2) Finish: White
 - 3) Finish: Galvanized. Clear coated in place of paint.
 - 4) Finish: Powder Coat Upgrade. RAL#_____
 - 5) Standard Max (WxH): 18 ft-4 inches x 24 ft-0 inches (5588 x 7315 mm).
 - c. Slat Material: 22-gauge, 0.028 inch (0.72 mm) polyester painted (G90 coating) galvanized steel.
 - 1) Finish: Gray
 - 2) Finish: White
 - 3) Finish: Tan
 - 4) Finish: Brown
 - 5) Finish: Galvanized. Clear coated in place of paint.
 - 6) Finish: Powder Coat Upgrade. RAL#_____
 - 7) Standard Max (WxH): 13 ft-4 inches x 24 ft-0 inches (4064 x 7315 mm).
 - d. End locks: Galvanized malleable iron, attached to every other slat to act as wearing surface and prevent lateral movement. Riveted in place.
 - e. Bottom Bar: Two steel angles bolted back-to-back. Minimum 11-gauge, 0.114 inch (2.90 mm)
 - 1) Finish: Primed Black
 - 2) Finish: Powder coat to match curtain
3. Guides: Three, minimum 3/16 inch (4.76 mm) structural angles bolted together to form guide and mounting surface.
 - a. Finish: Primed Black
 - b. Finish: Hot dipped galvanized
 - c. Finish: Powder Coat to match curtain
4. Head Plate: Minimum 1/4 inch (6.34 mm) rectangular steel plate. Precision sealed ball bearings supporting drive side axle.
5. Barrel Assembly:
 - a. Barrel: Steel pipe sized for maximum deflection under full load to not exceed 0.03 inch (0.76 mm) per 1 ft (305 mm) of span. Welded rings or threaded lugs to barrel assembly for curtain attachment.
 - b. Springs: Tension assembly supported in barrel by precision ball bearings. Curtain weight counterbalanced by oil tempered, helically wound torsion springs, grease packed and mounted on steel torsion shafts with cast spring plug.
6. Hood: Half-hexagonal hood for structural rigidity and aesthetic appeal. Fits within head plates with intermediate supports as required.
 - a. Material: 24-gauge, 0.022 inch (0.57 mm) polyester painted (G90 coating) galvanized steel
 - 1) Finish: To match curtain interior.
 - b. Smoke Seals: Replaceable smoke seal perimeter gaskets or brushes for smoke and draft control as required for door listing and labeling by a qualified testing agency.
 - 1) Smoke Label: Provide doors with U.L. "S" label in addition to the fire door label to certify smoke control listing.

7. Weather Seal:
 - a. Jamb brush seal
 - b. Header brush seal
8. Locking Mechanism:
 - a. Two plated steel slide bolt locks. Padlock provisions.
 - b. Chain keeper suitable for padlocking.
 - c. Cylinder lock for bottom bar
 - 1) Keyed on exterior of door with handle throw on interior.
 - 2) Keyed on both sides of the door.
9. Interlock Switches: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.
10. Mounting:
 - a. Face of wall and above lintel.
 - b. Face of wall and under lintel.
 - c. Between jamb and above lintel.
 - d. Between jamb and under lintel.
11. Jamb Construction: Comply with fire door listing.
 - a. Solid Masonry: Anchor bolt fasteners.
 - b. Hollow Masonry: Through bolt fasteners and crush plates.
 - c. Stacked Brick: Through bolt fasteners and crush plates.
 - d. Steel Jamb: Self tapping fasteners.
 - e. Steel Frame Covered With Gypsum: Self tapping fasteners.
12. Automatic Closing Device: Or release holder mechanism and governor unit complying with NFPA 80. Automatic closing device activated by the following:
 - a. Fusible Links: Interconnected. On both sides of door opening.
 - 1) Melting Point: 165 degrees F (74 degrees C).
 - 2) Melting Point (F/C): _____ degrees.
 - b. Smoke Detectors: Manufacturer's standard UL labeled. On both sides of wall and door holder release device.
 - 1) Type: Ionization.
 - 2) Type: Photo electric.
 - c. Heat Rise Detectors: Manufacturer's standard UL labeled. On both sides of wall and door holder release device.
 - d. Connected to building fire detection, smoke detection, and alarm systems through manufacturer's UL labeled release device.
 - e. Release Holder: Fail safe as an interface between detection device specified and fire rated door.
 - 1) Provide adjustable time delay for up to 10 seconds.
 - 2) Provide battery back-up system.
 - 3) Provide speaker and verbal warning when activated.
 - 4) Provide warning strobe light when activated.
 - 5) Provide warning horn when activated.
13. Operation:
 - a. Manual Push Up: Utilize partial spring tension release to initiate closure on alarm. Maximum door size (WxH) 12 ft-4 inch x 10 ft-4 inch (3759 x 3150 mm)
 - 1) Governor: If required by size of door. To maintain closing speed range of 6 to 24 inches (152 to 610 mm) per sec per NPFA 80.
 - b. Manual Chain Hoist: Utilize enclosed gear reduction operating system, maintaining spring tension when activated by release of a fusible link or release holder.
 - 1) Simple test design featuring a drop test handle allowing for drop testing and resetting from floor.
 - 2) Governor: If required by the size of door. To maintain the closing speed range of 6 to 24 inches (152 to 610 mm) per sec per NPFA 80.
 - c. Electric Motor Operation: See article " Electric Motor Operation for Overhead Coiling Service Doors, Fire Rate."

2.3 ELECTRIC MOTOR OPERATION FOR OVERHEAD COILING SERVICE DOORS, FIRE RATED

- A. Electric Motor Operator: Fail safe operator unit, listed and approved for use on door. Capacity as recommended and provided by door manufacturer. Maintains spring tension when activated by alarm, and easily reset from floor without requiring tools.
1. Usage Classification: Electric operator and components capable of operating for not less than number of cycles indicated for each door.
 - a. Operator Location: Front of hood.
 - b. Operator Location: Wall.
 - c. Power Supply: 115 VAC, single phase.
 - d. Power Supply: 230 VAC, single phase.
 - e. Power Supply: 208/230 VAC, three phase.
 - f. Power Supply: 460 VAC, three phase.
 - g. Power Supply: 575 VAC, three phase.
 - h. Control Station: 24 V, 3-button. Open, close, stop. (standard).
 - i. Control Station: 24 V, 3-button. Open, close, stop. Keyed lockout.
 - j. Control Station: 24 V, key with open and close contacts.
 - k. Control Station: 24 V, key with open/close contacts and stop button.
 - l. Control Station Mounting: NEMA 1 Surface. Interior. (standard)
 - m. Control Station Mounting: NEMA 1 Flush. Interior.
 - n. Control Station Mounting: NEMA 4 Surface. Exterior.
 - o. Control Station Mounting: NEMA 4 Flush. Exterior.
 2. Remote Controls:
 - a. Radio Receiver: Single button remote control.
 - b. Radio Receiver: Three button remote controls.
 - 1) Program remote controls to Open/ Close/ Stop the door.
 - c. Transmitters: _____.
 3. Special Controls:
 - a. Keypad Entry System. Mounting post.
 - b. Card Reader System. Mounting post.
 - c. Internet connectivity.
 - d. Door timer.
 - e. Loop detector.
 - f. Pull cord.
 - g. Vehicle detector.
 4. Primary Entrapment Protection Devices:
 - a. NEMA 1 Monitored Photo Sensors: Photo eyes fully monitored, non-contact, infrared beam photo sensor system. Reverses closing door to full open position when obstruction is sensed. Photo sensors to be mounted no higher than 6 inches (152 mm) above floor.
 - b. NEMA 4 Monitored Photo Sensors: Photo eyes fully monitored, non-contact, photo beam reversing photo sensor system with NEMA 4 watertight enclosure. Reverses closing door to full open position when obstruction is sensed. Photo sensors to be mounted no higher than 6 inches (152 mm) above floor.
 - c. Monitored Electric Sensing Edge: Electric sensing edge fully monitored and connected to operator shall reverse a closing door to full open position when an obstruction is sensed.
 - d. Ancillary Entrapment Protection Device: Non-Monitored Electric Sensing Edge. Reverses closing door to full open position when obstruction is sensed.
 - e. Ancillary Entrapment Protection Device: Pneumatic Sensing Edge. Reverses closing door to full open position when obstruction is sensed.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions 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 all unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install door and shutter assembly in accordance with manufacturer's instructions.
- B. Anchor to adjacent construction without distortion or stress.
- C. Fit and align door and shutter assembly including hardware, plumb, level and square to ensure smooth operation.
- D. Make wiring connections between power supply and operator and between operator and controls.

3.3 ADJUSTING

- A. Adjust hardware and moving parts so that doors operate smoothly throughout full operating range.
- B. Adjust seals to provide a tight fit around the entire perimeter.

3.4 DEMONSTRATION

- A. Demonstrate proper operation to Owner.
- B. Perform fire door and shutter drop tests in presence of Owner or owner's representative. Require signature for manufacturer supplied drop test form.

3.5 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion.
 - 1. Full Maintenance: 3 months by skilled employees of installing company.
 - 2. Full Maintenance: 6 months by skilled employees of installing company.
 - 3. Full Maintenance: 9 months by skilled employees of installing company.
 - 4. Full Maintenance: 12 months by skilled employees of installing company.
 - 5. Preventative Maintenance: Repair or replace worn or defective components. Lubricate, clean, and adjust as required for door or shutter operation.
 - a. Maintenance Frequency: Monthly.
 - b. Maintenance Frequency: Quarterly.
 - 6. Parts and Supplies: Manufacturer's authorized replacement parts and supplies.
 - 7. Callback Service: Maintenance, including emergency callback service during normal working hours.
 - 8. Callback Service: Maintenance, 24 hours per day, seven days per week, emergency callback service.

END OF SECTION