

## STEELFORM STANDARD – AUGUST 13, 2007

General Notes: This guide specification document is provided by Raynor Door for use by design professionals in preparing project specification documents for STEELFORM STANDARD sectional overhead doors, manufactured by Raynor Doors. For more information, contact Raynor, P.O. Box 448, 1101 East River Road, Dixon, IL 61021-0448. Phone: (800) 472-9667. Phone: (815) 288-1431. Fax: (815) 288-7142. E-mail: thegarage@raynor.com Website: www.raynor.com

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Specifier notes (comment text) are shown in blue like this. Optional text [is shown in bold with brackets like this]. Requirements for project-specific language to be inserted are indicated like this: <insert requirements.> Remove specifier notes and unused optional text in final version of the specification document. Retain, edit or delete language below to suit project requirements and specifier practice.

Under CSI's MasterFormat™ the products and systems contained in this section would typically be classified as Section 08361. Change section name or number as desired.

### SECTION 08361 - SECTIONAL OVERHEAD DOORS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes: [**Manually**] [**and**] [**Electrically**] operated sectional doors, operators, controls and accessories.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles per CSI MasterFormat and specifier's practice. In the absence of related sections, delete paragraph below.

B. Related Sections:

1. Division 5 Sections: Miscellaneous Metals for steel supports.
2. Division 8 Sections: Hardware, Locks, Access Panels.
3. Division 9 Sections: Finish Painting, Field Painting.
4. Division 11 Sections: Parking Control Equipment for remote door controls.
5. Division 16 Sections: Electrical connections and service for powered door operators.

Specifier Note: Retain, edit or delete paragraph below to suit project requirements and specifier practice.

C. Products Supplied but not Installed Under this Section: <Insert requirements.>

Specifier Note: Retain, edit or delete paragraph below to suit project requirements and specifier practice.

D. Products Installed but not Supplied Under this Section: <Insert requirements.>

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and installation recommendations. Retain References Article when specifying products and installation by an industry reference standard. This article does not require compliance with standard. It is a listing of all references used in this section.

## 1.2 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Society for Testing and Materials (ASTM):

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

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

## 1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance:

1. Wind Loads: Uniform pressure of: <Insert required wind load. p.s.f.>

B. Spring Cycle Requirements: [10,000] [25,000] [50,000] [100,000] cycles.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

## 1.4 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Shop Drawings: Provide drawings indicating track details, head and jamb conditions, spring shafts, anchorage, accessories, finish colors, patterns and textures, operator mounts and other related information.
- D. Samples: Submit selection and verification samples of metal finishes.
- E. Quality Assurance Submittals: Submit the following:
  - 1. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.
  - 2. Certificates: Submit installer qualifications.
- F. Closeout Submittals: Submit the following:
  - 1. Warranty documents specified herein.

Specifier Note: Installation of Raynor Doors should be performed by an authorized Raynor Dealer. Coordinate article below with Division 1 Quality Assurance Section.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity, and trained and authorized by the door dealer to perform the work of this section.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

- B. Regulatory Requirements and Approvals: **<Insert applicable requirements of regulatory agencies.>**

Specifier Note: Retain paragraph below if preinstallation meeting is required.

- C. Preinstallation Meetings: **<Insert requirements for meeting>**. Verify project requirements, substrate conditions, manufacturer's installation instructions and

manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

Specifier Note: Article below should include specific protection and environmental conditions required during product storage. Coordinate article below with Division 1 Product Requirements Section.

## 1.6 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Section.

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

## 1.7 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Retain, edit or delete article below to suit project and specifier practice.

## 1.8 MAINTENANCE

A. Extra Materials: Provide additional material for use by owner in building maintenance. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section. Service and repair should be performed by an authorized Raynor dealer.

1. Quantity: **<Insert quantity requirements for additional materials.>**

Specifier Note: State requirements for extended maintenance of systems or equipment to be provided by contractor.

B. Maintenance Service: Submit for Owner's consideration and acceptance maintenance service agreement for products installed.

## PART 2 - PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "equal" products.

### 2.1 MANUFACTURER

Specifier Note: Paragraph below is a recommended addition to CSI SectionFormat. Retain, edit or delete paragraph below to suit project requirements and specifier practice.

A. Manufacturer: Raynor Door.

1. Contact: P.O. Box 448, 1101 East River Road, Dixon, IL 61021-0448;  
Telephone: (800) 472-9667, (815) 288-1431; Fax: (815) 288-7142; E-mail:  
thegarage@raynor.com; website: www.raynor.com.

B. Manufacturer Product Designation: STEELFORM STANDARD.

### 2.2 DOOR OPERATORS

A. Provide doors designed for [**manual**] [**electric motor**] [**hand chain**] operation.

Specifier Note: Raynor manufactures multiple models of door operators. Retain, edit or delete language below to suit project requirements.

Specifier Note: PowerHoist and ControlHoist Optima operators feature a heavy-duty gear drive running in oil for high reliability and efficient operation. They are designed for larger sectional doors and higher cycle applications.

B. Manufacturer Product Designation: Raynor PowerHoist Optima with Contactor style motor starter (Model Series PHO) or Raynor ControlHoist Optima with Solid State motor controller (Model Series CHO).

1. Type: [**Jackshaft with manual chain hoist**] [**Trolley**].
2. Motor Horsepower Rating: Continuous [**1/2**] [**3/4**] [**1**] [**1-1/2**] [**2**] HP.
3. Electrical Requirements: [**115 volt single**] [**230 volt single**] [**230 volt three**] [**460 volt three**] phase.

4. Duty Cycle: 30 cycles/hour.
5. Control Wiring: Contactor Style Motor starter 24 volt control with provisions for connection of safety edge to reverse and external radio control hook-up. [**Three button momentary contact "open-close-stop" (Custom wiring is available)**]. Solid State motor Controller 24 volt control with provisions to select up to 6 standard wiring types plus delay on reverse, mid stop, maximum run timer, and door lock feature.
6. Model Number: <**Insert model number.**>

[Specifier Note: PowerHoist Standard belt-drive operators are designed for medium- to high-cycle applications and for normal- to large-size sectional doors.](#)

C. Manufacturer Product Designation: Raynor PowerHoist Standard (Model Series PHS) or Raynor ControlHoist Standard with Solid State motor controller (Model Series CHS).

1. Type: [**Jackshaft**] [**Jackshaft with manual chain hoist**] [**Trolley**].
2. Motor Horsepower Rating: Continuous [**1/3**] [**1/2**] [**3/4**] HP.
3. Electrical Requirements: [**115 volt single**] [**230 volt single**] [**230 volt three**] [**460 volt three**] phase.
4. Duty Cycle: 30 cycles/hour.
5. Control Wiring: Contactor Style Motor starter 24 volt control with provisions for connection of safety edge to reverse and external radio control hook-up. [**Three button momentary contact "open-close-stop" (Custom wiring is available)**]. Solid State motor Controller 24 volt control with provisions to select up to 6 standard wiring types plus delay on reverse, mid stop, maximum run timer, and door lock feature.
6. Model Number: <**Insert model number.**>

[Specifier Note: ControlHoist Basic belt drive operators are designed for operating sectional or rolling steel doors up to 14 feet high in light duty applications.](#)

D. Manufacturer Product Designation: Raynor ControlHoist Basic with Solid State Motor Controller (Model Series CHB) or Raynor PowerHoist Standard with Relay style motor controller (Model Series PHB).

1. Type: [**Jackshaft**] [**Jackshaft with manual chain hoist**] [**Trolley**].
2. Motor Horsepower Rating: Intermittent 1/2 HP.
3. Electrical Requirements: 115 volt single phase.
4. Duty Cycle: 10 cycles/hour.
5. Control Wiring: Relay style motor controller 24 volt control with provisions for connection of safety edge to reverse and external radio control hook-up. [**Three button momentary contact "open-close-stop"**]. Solid State motor Controller 24 volt control with provisions to select up to 4 standard wiring types plus maximum run timer and provisions for connection of a separate delayed light.
6. Model Number: <**Insert model number.**>

## 2.3 DOOR SECTIONS

A. Material: Steel pan construction, 2 inches (51mm) thick, roll formed from [**24 gauge (0.023 inch)**] [**20 gauge (0.035 inch)**] minimum thickness commercial quality hot-dipped galvanized [**G90 if 20 gauge**] [**G60 if 24 gauge**] steel in compliance with ASTM A 653. Each door section to have two deep ribs, four pencil grooves, and roll-formed tongue-and-groove joints. End stiles and center stiles to be riveted to outside face with stainless steel rivets and resistance welded to interior rail. End stiles and center stiles to be minimum 16 gauge thickness.

B. Mounting: Sections mounted in door opening using [**Lap Jamb Angle Mounting: section overlap door jambs by 1 inch (25mm) on each side of door opening**] [**Between-Jamb Bracket Mounting: sections mounted between door jambs, seal against exterior perimeter seal installed along vertical and top horizontal edges of door**].

[Specifier Note: Prime painted hardboard covers are not recommended by manufacturer for use in high humidity or moisture-prone applications.](#)

C. Insulation: [**Polystyrene with Impact-resistant Covers: non-CFC expanded polystyrene with R-value of 7.70 and U-value of 0.130, with white impact-resistant textured covers**] [**Polystyrene with Hardboard Covers: non-CFC expanded polystyrene with R-value of 7.87 and U-value of 0.127, with 1/8 inch (3.2mm) prime-painted hardboard covers**] [**Polystyrene with 26 gauge Steel Covers: non-CFC expanded polystyrene with R-value of 7.70 and U-value of 0.130, with 26 gauge hot-dipped galvanized steel covers, stucco embossed and painted gray**] [**Polystyrene with 24 gauge Steel Covers: non-CFC expanded polystyrene with R-value of 7.70 and U-value of 0.130, with 24 gauge hot-dipped galvanized steel covers, painted gray**] [**Polystyrene with 20 gauge Steel Covers: non-CFC expanded polystyrene with R-value of 7.70 and U-value of 0.130, with 20 gauge hot-dipped galvanized steel covers, painted gray**].

D. Seals: Sections to be sealed at end stiles with 1/4 inch (6.4mm) thick polyethylene foam. Bottom of door to have flexible U-shaped vinyl seal in aluminum retainer.

E. Trussing: Doors designed to withstand specified windload. Deflection of door in horizontal position to be maximum of 1/120th of door width.

[Specifier Note: Some restrictions apply based on door section steel thickness. Consult manufacturer.](#)

F. Color and Paint Type: [**White polyester paint**] [**Dark Brown Kynar paint**] [**Frost White Kynar paint**] [**Beige Kynar paint**] [**Sepia Brown Kynar paint**]. Exterior skin to have two coats of paint, one primer coat and one finish coat.

G. Windows: Locations to comply with door elevation drawings. [**24 inches by 8 inches (610mm by 203mm) oval window encased in a one-piece vulcanized EPDM rubber frame**] [**Color matched full-view window consisting of aluminum stile and rail construction and color matched to door exterior with powdercoat paint**].

Specifier Note: Door sections are available glazed with insulating glass, non-insulating glass, acrylic or polycarbonate. Retain, edit or delete paragraphs below to suit project.

H. Glazing: Windows to be provided with glazing units as follows:

1. Oval Type Windows: [Glass consisting of 1/8" (3.2mm) thick DSB glass (insulated or non-insulated)] [Acrylic consisting of 1/8" (3.2mm) thick acrylic flexiglass ® (non-insulated)] [ Polycarbonate consisting of 1/8" (3.2mm) thick Lexan ® polycarbonate (non-insulated)] [Glass consisting of 3/16" (4.8mm) thick glass (insulated or non-insulated)] [Reinforced glass consisting of 1/4" (6.4mm) thick wire-reinforced glass (insulated or non-insulated)][Acrylic consisting of 1/4" (6.4mm) thick acrylic Plexiglass ®].
2. Full-View type windows: [Glass consisting of 1/2" 12.7mm) thick DSB insulated glass][Glass consisting of 1/8" (3.2mm) thick DSB glass].

## 2.4 TRACK

A. Material: Hot-dipped galvanized steel (ASTM A-653), fully adjustable for adequate sealing of door to jamb or weatherseal.

B. Configuration Type: [**Normal Headroom**] [**Low Headroom**] [**Vertical Lift**] [**Lift-Clearance**] [**Incline**] [**Contour**].

C. Size: [**2 inches (51mm)**] [**3 inches (76mm)**].

Specifier Note: "Some restrictions apply based on Configuration Type and Size." For example, the only mounting available on 3" lift-clearance is Floor-to-Shaft Angle-Mount.

D. Mounting: [**Bracket-Mount using 2 inch adjustable track bracket for use with wood jambs**] [**Floor-to-Header Angle-Mount consisting of continuous angle extending from the floor up to the door header for use with steel, wood, or masonry jambs. Continuous angle size not less than 2-5/16 inches by 4 inches by 3/32 inch (59 by 102 by 2.5mm)**] [**Floor-to-Shaft Angle-Mount consisting of continuous angle extending from the floor, past header, completely up to door shaft for use with steel, wood, or masonry jambs. Continuous angle size not less than 2-5/16 inches by 4 inches x 3/32 inch (59 by 102 by 2.5mm) on 2-inch track.**

E. Finish: [**Galvanized**].

## 2.5 COUNTERBALANCE SYSTEM

A. Type: Provided with aircraft-type, galvanized steel lifting cables with minimum safety factor of 5 to 1. [**Torsion Springs consisting of heavy-duty oil-tempered wire torsion springs on a continuous ball-bearing cross-header shaft**] [**Weight Counterbalance for lift clearance and vertical lift type configurations**].

## 2.6 HARDWARE

A. Hinges and Brackets: Fabricated from galvanized steel.

B. Track Rollers: [**2 inches (50.8mm)**] [**3 inches (76.2mm)**] diameter consistent with track size, with hardened steel ball bearings.

Specifier Note: Door may be provided with perimeter seal for jambs and header. Retain or delete paragraph below to suit project.

C. Perimeter Seal: Provide perimeter seal for jambs and header.

Specifier Note: Door may be provided with air infiltration seal between door sections. Retain or delete paragraph below to suit project.

D. Air Infiltration Seal: Provide air infiltration seal between door sections.

Specifier Note: Door may be provided with exterior or interior locking device. Retain or delete paragraph below to suit project.

E. Locks: Furnish door system with [**exterior lock with five-pin tumbler cylinder, night latch and steel bar engaging track**] [**interior lock with dead bolt provided with hole to receive padlock provided by owner**].

## PART 3 - EXECUTION

Specifier Note: Article below is a recommended addition to CSI SectionFormat. Revise article below to suit project requirements and specifier's practice.

### 3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions and recommendations of door manufacturer.

Specifier Note: Specify requirements where an unusually high quality of workmanship is required. Retain article below and list local Raynor dealer installers as required to suit project requirements and specifier practice.

### 3.2 ACCEPTABLE INSTALLERS

A. <Insert acceptable installers.>

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

### 3.3 EXAMINATION

A. Site Verification of Conditions: Verify through direct observation and field measurement that site conditions are acceptable for installation of doors, operators, controls and accessories. Ensure that openings square, flush and plumb.

B. Do not proceed with installation of doors, operators, controls and accessories until unacceptable conditions are corrected.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements. All door installations should be performed by an authorized Raynor Dealer. Consult Raynor to obtain local dealer contact information. Preparation of door openings should comply with submitted Raynor requirements.

### 3.4 INSTALLATION

A. General: Install door, track and operating equipment complete with all necessary accessories and hardware according to shop drawings, manufacturer's instructions.

B. Site Tolerances: **<Insert applicable site tolerances for installation of specified products.>**

C. Related Products Installation: Refer to Related Sections paragraph for related products installation.

Specifier Note: Retain, edit or delete paragraph below to suit project requirements and specifier practice. Specify the tests and inspections required for installed or completed work. Establish number and duration of periodic site visits with Owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals.

### 3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: At Owner's request, provide manufacturer's field service consisting of product installation and use recommendations, and periodic site visits to observe and ensure product installation is done in accordance with manufacturer's recommendations.

1. Site Visits: **<Insert number and duration of periodic site visits.>**

### 3.6 ADJUSTING

A. General: Lubricate bearings and sliding parts, assure weathertight fit around door perimeter and adjust doors for proper operation, balance, clearance and similar requirements.

Specifier Note: Specify the final actions required to clean installed equipment or other completed work to properly function or perform. Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

### 3.7 CLEANING

A. Remove temporary coverings and protection of adjacent work areas. Repair or replace installed products damaged prior to or during installation.

B. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove and legally dispose of construction debris from project site.

END OF SECTION