

TRICORE STANDARD – OCTOBER 10, 2006

General Notes: This guide specification document is provided by Raynor Door for use by design professionals in preparing project specification documents for TRICORE 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

Raynor Territory Managers can assist architects, engineers and specifiers in the selection of Raynor products to meet the design requirements of any project. Raynor Distribution Centers, Raynor Professional Installing Distributors and the Raynor Express Fleet ensure national and regional availability and timely delivery.

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.
2. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

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.>
2. Air Infiltration (ASTM E 283): Air leakage per foot of door perimeter (floor, jamb, and header) shall not exceed 0.81 CFM (22.9 L/Min) @ 25MPH (40.2km/hr). No air leakage shall be detected between section joints when tested in accordance with ASTM E 283.

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: TRICORE 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 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 (Model Series RG):

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: 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)**].
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 RB):

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: 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)**].
6. Model Number: <**Insert model number.**>

[Specifier Note: PowerHoist 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 PowerHoist Basic (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: 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)**].
6. Model Number: <**Insert model number.**>

2.3 DOOR SECTIONS

A. Material: Steel sandwich construction, 3 inches (76.2mm) thick, roll formed from commercial quality, hot-dipped galvanized (G60 exterior) steel in compliance with ASTM A 653. Exterior and interior section skins to be constructed of 25 gauge (0.017

inch) minimum steel thickness embossed stucco texture, mechanically interlocked and pressure bonded to a 2-7/8 inches (73mm) thick, expanded polystyrene core. Hinge reinforcement plates shall be of 14 gauge edge plates and 16 gauge center plates, located within section interior at every hinge location. End stiles to be 14 gauge, separated from the exterior skin by a vinyl thermal break.

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 jambs].

C. Insulation: Expanded polystyrene, R-value of 16.05 and U-value of 0.0623.

D. Seals: Interior and exterior skins to be separated by continuous dual durometer vinyl seal held in place by mechanical interlock to form thermal break and complete weatherseal along section joint. Top of door to be provided with EPDM rubber sealing strip. Bottom of door to have flexible U-shaped vinyl seal retained in aluminum rail.

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

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

[Specifier Note: Some restrictions may apply based on door height. Actual window width may vary slightly based on door width.](#)

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][24 inches by 12 inches (610mm by 305mm) oval window encased in a one-piece vulcanized EPDM rubber frame][36 inches by 14 inches (914mm by 356mm)] or [42 inches by 14 inches (1067mm by 356mm)] full-view (square-edge) window encased in an extruded PVC frame].

[Specifier Note: Door sections are available glazed with insulating glass. Retain, edit or delete paragraphs below to suit project.](#)

H. Glazing: Windows to be provided with 5/8 inch (16mm) thick insulated glazing units as follows:

[Specifier Note: Option below available for oval and full-view square-edge-type windows.](#)

1. Glass consisting of two panes of 1/8 inch (3.2 mm) thick DSB glass.

[Specifier Note: Options below available for oval-type windows only.](#)

2. Glass consisting of two panes of 3/16 inch (4.8mm) thick glass.
3. Reinforced glass consisting of one pane of 1/4 inch (6.4mm) thick wire-reinforced glass (exterior pane) and one pane of 1/8 inch (3.2mm) DSB glass (interior pane).

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 5 inches by 3/32 inch (59 by 127 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 5 inches x 3/32 inch (59 by 127 by 2.5mm) on 2-inch track.**]

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

2.5 COUNTERBALANCE SYSTEM

A. Type: Provided with aircraft-type, galvanized steel lifting cables with minimum safety factor of 5. [**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. Retain or delete paragraph below to suit project.

C. Perimeter Seal: Provide complete weather stripping system to reduce air infiltration. Weather stripping shall be replaceable. [**For bracket mounted doors provide climate seal or vinyl seal with aluminum retainer**] [**For angle mounted doors provide angle clip-on seal**].

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

D. 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