

## **DIVISION 08**

### **DOORS**

**SECTION 08110**  
**STEEL DOORS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Steel doors and frames.

**1.02 RELATED SECTIONS**

- A. Section 08710 - Door Hardware.

**1.03 REFERENCES**

- A. ASTM A 366/A 366M - Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.
- B. ASTM A 569/A 569M - Standard Specification for Commercial Steel, Sheet and Strip, Carbon (0.15 Maximum Percent), Hot-Rolled.
- C. ASTM A 591/A 591M - Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
- D. NFPA 80 - Standard for Fire Doors and Windows; National Fire Protection Association.
- E. SDI 100 - Recommended Specifications Standard Steel Doors and Frames; Steel Door Institute; (ANSI/SDI-100).
- F. SDI 105 - Recommended Erection Instructions for Steel frames; Steel Door Institute.
- G. SDI 111 - Recommended Standard Details for Steel Doors & Frames; Steel Door Institute.
- H. SDI 113 - Test Procedure and Acceptance Criteria for Apparent Thermal Performance of Steel Door and Frame Assemblies; Steel Door Institute.
- I. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc..
- J. Use the latest issue of the above reference standards as of the date of the Project.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard details and catalog data demonstrating compliance with referenced standards; installation instructions.
- C. Certificates:
  - 1. Provide manufacturer's certification that products comply with referenced standards.
  - 2. Provide evidence of manufacturer's membership in the Steel Door Institute.
- D. Shop Drawings: Door, frame, and hardware schedule in accordance with SDI 111D.

## 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide all products from a single manufacturer who is a member of the Steel Door Institute.

## 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect products from moisture, construction traffic, and damage.
- B. Store under cover. Do not use non-vented plastic or canvas shelters. Should wrappers become wet, remove immediately.
- C. Place units on 4 inch high wood sills or in a manner that will prevent rust or damage. Provide 1/4 inch space between doors to promote air circulation.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Steel Sheet for Doors and Frames:
  - 1. Cold rolled steel: ASTM A 366/A 366M.
  - 2. Hot rolled steel: Pickled and oiled, ASTM A 569/A 569M, Type.
- B. Steel Sheet for Anchors and Accessories: Electrolytically deposited zinc coated steel; ASTM A 591/A 591M, coating Class B, minimum.

### 2.02 DOORS AND FRAMES

- A. Comply with SDI 100.
- B. Fire-Rated Openings: Comply with NFPA 80; UL listed.
  - 1. Affix permanent labels attesting to fire resistance.
  - 2. At stairway enclosures, provide units listed for 450 degree F maximum temperature rise rating for 30 minutes of exposure.
  - 3. Provide manufacturer's certificate that oversized openings have been constructed in accordance with all other applicable requirements for labeled door construction.
- C. Exterior Doors:
  - 1. Provide insulated construction with U-value of at least 0.48 when tested in accordance with SDI 113.
  - 2. Provide manufacturer's standard foam insulated core.
  - 3. Steel stiffened grid core and stile and rail units are exempt from thermal rating requirements.
- D. All Steel Doors: Grade II, Model 1 (heavy-duty, full flush design, 16 gage frames).
- E. Frames: Provide either knockdown field assembled or welded unit type frames unless otherwise indicated.
- F. Louvers: Provide inserted louvers in accordance with SDI 111C, where indicated.
  - 1. Fixed Louvers: Inverted "V" blade.
- G. Finishing: Provide factory-finished units; colors as indicated on the drawings.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that project conditions are suitable before beginning installation of frames.
  - 1. For wrap-around frames, verify that completed openings are of correct size and thickness.
- B. Correct unsatisfactory condition before proceeding with installation.

### **3.02 INSTALLATION**

- A. Install frames in accordance with SDI 105.
- B. Install doors plumb and in true alignment and fasten to achieve the maximum operational effectiveness and appearance of the unit. Maintain clearances specified in SDI 100 and NFPA 80 whichever is more restrictive.
- C. Fill welded wrap-around frames in masonry construction with mortar as masonry is laid-up.
- D. If additives are used in masonry or plaster work during cold weather, field coat the inside of steel frames with a bituminous compound to prevent corrosion.

### **3.03 ADJUST AND CLEAN**

- A. Adjust doors for proper operation, free from binding or other defects.
- B. Clean and restore soiled surfaces. Remove scraps and debris, and leave site and a clean condition.

**END OF SECTION**

**SECTION 08360**  
**OVERHEAD DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Overhead sectional doors, with electric operator.
- B. Operating hardware and supports.

**1.02 RELATED SECTIONS**

- A. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.
- B. Section 08710 - Door Hardware: Lock cylinders.

**1.03 REFERENCES**

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- C. DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors; Door & Access Systems Manufacturers' Association, International.
- D. Use the latest issue of the above reference standards as of the date of the Project.

**1.04 PERFORMANCE REQUIREMENTS**

- A. Design and size components to withstand dead loads and positive and negative wind loads as calculated in accordance with Uniform Building Code and applicable local code as measured in accordance with ASTM E 330.

**1.05 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, installation details and appurtenant details.
- C. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and related information.
- D. Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, spare part sources.
- E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

- B. Installer: Company specializing in performing the work of this section with minimum three years of experience.

## **1.07 WARRANTY**

- A. See Section 01780 - Closeout Submittals for warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Overhead Door Corporation.
- B. Substitutions: See Section 01600 - Product Requirements.

### **2.02 STEEL DOOR COMPONENTS**

- A. Steel Doors: Flush steel, insulated; standard lift operating style with track and hardware; complying with DASMA 102, Commercial application.
  - 1. Door Nominal Thickness: 2 inches thick.
  - 2. Exterior Finish: Pre-finished with baked enamel of color as selected.
  - 3. Interior Finish: Pre-finished with baked enamel of color as selected.
  - 4. Operation: Electric motor operator; and pull rope.
- B. Door Panels: Stile and rail construction, of steel sheet 0.058 inch thick, with welded joints; rabbeted weather joints at meeting rails.

### **2.03 DOOR COMPONENTS**

- A. Track: Galvanized steel angles, 0.094 inch thick; 2-5/16 x 4 inch size, continuous one piece per side; galvanized steel mounting brackets 1/4 inch thick.
- B. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.
- C. Lift Mechanism: Torsion spring on cross head shaft, with braided galvanized steel lifting cables.
  - 1. For Manual Operation: Requiring maximum exertion of 25 lbs force to open.
- D. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.
- E. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.
- F. Head Weatherstripping: EPDM rubber seal, one piece full length.
- G. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.
- H. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle.
- I. Lock Cylinders: Keyed alike.

## **2.04 MATERIALS**

- A. Sheet Steel: ASTM A 653/A 653M, galvanized to G60, plain surface.
- B. Metal Primer Paint: Zinc molybdate type.

## **2.05 DOOR OPERATOR**

- A. Door operator shall be belt drive type; equipped with safety clutch and self-lubricating bearings.
  - 1. Shall provide positive locking to prevent opening door manually when in closed position.
  - 2. Shall be provided with limit switches to limit travel of door opening and closing.
  - 3. Shall be provided with emergency quick release assembly to permit manual operation of door in event of power failure.
- B. Motors shall be 1/2 hp, single phase motors, manufactured by a recognized manufacturer.
- C. Provide three button control station (open-close-stop), with keyed lockout; and a remote operator for operating door from outside.
- D. Operators shall be of make, size and model as recommended by door manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

### **3.02 PREPARATION**

- A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.
- B. Apply primer to wood frame.

### **3.03 INSTALLATION**

- A. Install door unit assembly in accordance with manufacturer's instructions.
- B. Anchor assembly to wall construction and building framing without distortion or stress.
- C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- D. Fit and align door assembly including hardware.
- E. Install door operator in accordance with manufacturer's instructions.

### **3.04 ERECTION TOLERANCES**

- A. Maximum Variation from Plumb: 1/16 inch.
- B. Maximum Variation from Level: 1/16 inch.
- C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 feet straight edge.
- D. Maintain dimensional tolerances and alignment with adjacent work.

### **3.05 ADJUSTING**

- A. Adjust door assembly for smooth operation and full contact with weatherstripping.
- B. Adjust door operator for smooth operation; and to fully open and close the door.
- C. Have manufacturer's field representative present to confirm proper operation and identify adjustments to door assembly for specified operation.

### **3.06 CLEANING AND PROTECTION**

- A. Clean doors, frames and glazing.
- B. Remove temporary labels and visible markings.
- C. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

**END OF SECTION**

**SECTION 08620**  
**UNIT SKYLIGHTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preformed plastic skylights with integral metal frame.
- B. Counterflashings.

**1.02 RELATED SECTIONS**

- A. Section 06100 - Rough Carpentry: Wood framing for rough opening.
- B. Section 07620 - Sheet Metal Flashing and Trim: Skylight counterflashing.

**1.03 REFERENCES**

- A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- C. Use the latest issue of the above reference standards as of the date of the Project.

**1.04 PERFORMANCE REQUIREMENTS**

- A. Allow for expansion and contraction within system components caused by a cycling surface temperature range of 170 degrees F without causing detrimental effects to system or components.
- B. Design to withstand live loads as calculated in accordance with Uniform Building Code and other applicable code.

**1.05 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide structural, thermal, and day lighting performance values.
- C. Shop Drawings: Indicate configurations, dimensions, locations, fastening methods, and installation details.
- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

**1.07 PROJECT CONDITIONS**

- A. Coordinate the work with the installation of curbs specified elsewhere.

## **1.08 WARRANTY**

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for including leakage due to defective skylight materials or workmanship.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Unit Skylights:
  - 1. Bristolite Skylights.
  - 2. Naturalite Skylight Systems.
  - 3. Substitutions: See Section 01600 - Product Requirements.

### **2.02 COMPONENTS**

- A. Unit Skylight: Factory-assembled glazing in aluminum frame; double dome.
  - 1. Rectangular domed shape.
  - 2. Nominal Size: As indicated on drawings.
- B. Double Glazing: Acrylic plastic; factory sealed.
  - 1. Outer Glazing: Clear transparent.
  - 2. Inner Glazing: White translucent.
- C. Frames: ASTM B 221 (ASTM B 221M) Extruded aluminum thermally broken, reinforced and welded corner joints, integral curb frame mounting flange and counterflashing to receive roofing flashing system, with integral condensation collection gutter, glazing retainer; clear anodized finish.
- D. Ceiling Domes: Acrylic plastic, 1/8 inch thick, white translucent, set in extruded aluminum frame, white enamel finish, configuration of perimeter frame to suit ceiling system with hinged access feature to light well above.

### **2.03 ACCESSORIES**

- A. Anchorage Devices: Type recommended by manufacturer, exposed to view.
- B. Counterflashings: Same metal type and finish as skylight frame.
- C. Protective Back Coating: Zinc molybdate alkyd.
- D. Sealant: as specified in Section 07900.

### **2.04 FABRICATION**

- A. Fabricate free of visual distortion and defects.
- B. Fabricate to achieve leakproof, weathertight assembly.
- C. Fabricate components to allow for expansion and contraction with minimum clearance and shim spacing around perimeter of assembly.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that openings and substrate conditions are ready to receive work of this section.

### **3.02 PREPARATION**

- A. Apply protective back coating on aluminum surfaces of skylight units that will be in contact with cementitious materials or dissimilar metals.

### **3.03 INSTALLATION**

- A. Place skylight units and secure. Install counterflashing as required.
- B. Apply sealant to achieve watertight assembly.

### **3.04 CLEANING**

- A. Remove protective material from prefinished aluminum surfaces.
- B. Wash down exposed surfaces; wipe surfaces clean.
- C. Remove excess sealant.

**END OF SECTION**

**SECTION 08710**  
**DOOR HARDWARE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Hardware for hollow steel doors.
- B. Thresholds.
- C. Weatherstripping, seals and door gaskets.

**1.02 RELATED SECTIONS**

- A. Section 08110- Standard Steel Doors and Frames.

**1.03 ALLOWANCES**

- A. See Section 01210 - Allowances, for allowances affecting this section.

**1.04 REFERENCES**

- A. ANSI/CABO A117.1 - American National Standard for Buildings and Facilities - Providing Accessible and Usable Buildings and Facilities; Council of American Building Officials.
- B. BHMA A156.1 - American National Standard for Butts and Hinges; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.1).
- C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.2).
- D. BHMA A156.3 - American National Standard for Exit Devices; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.3).
- E. BHMA A156.4 - American National Standard for Door Controls - Closers; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.4).
- F. BHMA A156.6 - American National Standard for Architectural Door Trim; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.6).
- G. BHMA A156.7 - American National Standard for Template Hinge Dimensions; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.7).
- H. BHMA A156.13 - American National Standard for Mortise Locks & Latches; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.13).
- I. BHMA A156.18 - American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.18).
- J. BHMA A156.21 - American National Standard for Thresholds; Builders Hardware Manufacturers Association; (ANSI/BHMA A156.21).
- K. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute.

- L. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; Door and Hardware Institute.
- M. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association.
- N. Use the latest issue of the above reference standards as of the date of the Project.

#### **1.05 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  - 1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts.
  - 2. Submit manufacturer's parts lists, templates, and appurtenant information.
- C. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and related information.
- D. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- E. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- F. Keys: Deliver with identifying tags to the City Engineer or Inspector.
- G. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in the City 's name and registered with manufacturer.

#### **1.06 QUALITY ASSURANCE**

- A. Perform work in accordance with the following requirements:
  - 1. NFPA 101.
  - 2. Maintain one copy on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- C. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with three years of experience.

#### **1.07 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for requirements applicable to fire rated doors and frames.

#### **1.08 DELIVERY, STORAGE, AND PROTECTION**

- A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

#### **1.09 COORDINATION**

- A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.
- B. Furnish templates for door and frame preparation.

## **1.10 WARRANTY**

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year warranty for all door hardware.

## **1.11 MAINTENANCE PRODUCTS**

- A. Provide special wrenches and tools applicable to each different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Hinges:
  - 1. Hager Companies.
  - 2. Stanley Hardware.
- B. Latch Sets: .
  - 1. Best Lock Corp.
  - 2. Schlage Lock Co.
  - 3. Yale Security, Inc.
- C. Push/Pulls:
  - 1. Hager Companies.
- D. Cylindrical Locks:
  - 1. Best Lock Corp.
  - 2. Schlage Lock Co.
  - 3. Yale Security, Inc.
- E. Mortise Locks:
  - 1. Best Lock Corp.
  - 2. Schlage Lock Corp.
  - 3. Yale Security, Inc.
- F. Closers:
  - 1. DORMA Door Controls, Inc.
  - 2. Yale Security, Inc.

- G. Protection Plates:
  - 1. Hager Companies.
- H. Key/Pad Locksets:
  - 1. ILCO Unican Corporation.
- H. Substitutions: See Section 01600 - Product Requirements.

## **2.02 KEYING**

- A. Door Locks: Grand master keyed.
- B. Supply keys in the following quantities:
  - 1. Five master keys.
  - 2. Two grand master keys.
  - 3. Five change keys for each lock.
- C. Keying shall match the City's keying, as directed.

## **2.03 FINISHES**

- A. Finishes: Identified in schedule at end of section.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.

### **3.02 INSTALLATION**

- A. Install hardware in accordance with manufacturer's instructions.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item:
  - 1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."
  - 2. For steel doors and frames: See Section 08110.

### **3.03 FIELD QUALITY CONTROL**

- A. Field inspection and testing will be performed under provisions of Section 01400.

### **3.04 ADJUSTING**

- A. Adjust work under provisions of Section 01700.
- B. Adjust hardware for smooth operation.

### **3.05 PROTECTION OF FINISHED WORK**

- A. Protect finished Work under provisions of Section 01700.
- B. Do not permit adjacent work to damage hardware or finish.

### **3.06 SCHEDULE.**

- A. Hardware Group H-1: 3.0 ft hollow metal doors.
  - 1. 1 1/2 pair hinges - BB1191, 4 1/2 x 4 1/2, 26D, NRP
  - 2. 1 each deadbolt lock - B162N, 26D, GMK
  - 3. 1 each lockset - F51N, Elan, 26D, GMK
  - 4. 1 each closer - P2810-4, SBL
  - 5. 2 each kick plates - 12 x 34, 26D
  - 6. 1 each stop - 267F, 26D

**END OF SECTION**