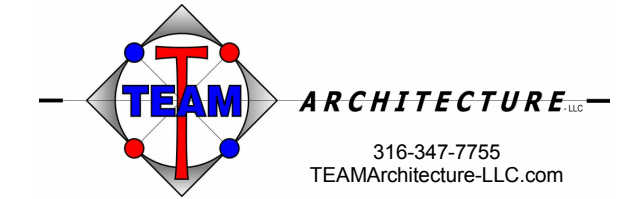


# ARCHITECTURAL SPECIFICATIONS



## SECTION 077200 - ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Roof hatches.
2. ACTION SUBMITTALS

##### A. Product Data: For each type of roof accessory.

##### B. Shop Drawings: For roof accessories.

##### 1.3 CLOSEOUT SUBMITTALS

##### A. Operation and maintenance data.

### PART 2 - PRODUCTS

#### 2.1 ROOF HATCH

##### A. Roof Hatches: Metal roof-hatch units with lids and insulated double-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, straight sides, and integrally formed deck-mounting flange at perimeter bottom.

##### 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Babcock-Davis.
- b. Bilco Company (The).
- c. J.L. Industries, Inc.; a division of the Activar Construction Products Group.
- d. Milcor; Commercial Products Group of Hart & Cooley, Inc.
- e. O'Keeffe's Inc.
- b. Type and Size: Single-leaf lid, 30 by 36 inches.
- c. Loads: Minimum 40-lbf/sq. ft. (1.9-kPa) external live load and 20-lbf/sq. ft. (0.95-kPa) internal uplift load.
- d. Hatch Material: Zinc-coated (galvanized) steel sheet.

##### 1. Thickness: Manufacturer's standard thickness for hatch size indicated.

##### 2. Finish: Factory prime coating.

##### E. Construction:

1. Insulation: Polyisocyanurate board.
- a. R-Value: 12.0 according to ASTM C 1363.
2. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
3. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.
4. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
5. Fabricate curbs to minimum height of 12 inches (305 mm) above roofing surface unless otherwise indicated.
6. Sloping Roofs: Where slope or roof deck exceeds 1:48, fabricate curb with perimeter curb height that is constant. Equip hatch with water diverter or cricket on side that obstructs water flow.

##### F. Hardware: Spring operators, hold-open arm, galvanized-steel spring latch with turn handles, galvanized-steel butt- or pintle-type hinge system, and padlock hasps inside and outside.

### 2.2 METAL MATERIALS

#### A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation and mill phosphatized for field painting where indicated.

##### 1. Mill-Phosphatized Finish: Manufacturer's standard.

##### 2. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil (0.005 mm).

#### B. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.

#### C. Steel Tube: ASTM A 500/A 500M, round tube.

#### D. Galvanized-Steel Tube: ASTM A 500/A 500M, round tube, hot-dip galvanized according to ASTM A 123/A 123M.

#### E. Steel Pipe: ASTM A 53/A 53M, galvanized.

### 2.3 MISCELLANEOUS MATERIALS

#### A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.

#### B. Polyisocyanurate Board Insulation: ASTM C 1289, thickness and thermal resistivity as indicated.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

##### A. General: Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.

##### 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.

##### 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.

##### 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.

##### 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

##### B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

##### 1. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of underlayment and cover with manufacturer's recommended slip sheet.

##### C. Seal joints with elastomeric sealant as required by roof accessory manufacturer.

### 3.2 REPAIR AND CLEANING

#### A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780/A 780M.

#### B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Section 099113 "Exterior Painting."

#### C. Clean exposed surfaces according to manufacturer's written instructions.

#### D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

#### END OF SECTION 077200

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
2. ACTION SUBMITTALS

##### A. Product Data: For each joint-sealant product indicated.

##### B. Samples: For each kind and color of joint sealant required.

##### C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

##### 1.3 INFORMATIONAL SUBMITTALS

##### A. Product test reports.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS, GENERAL

##### A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

##### B. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

### 2.2 SILICONE JOINT SEALANTS

#### A. Mildew-Resistant Neutral-Curing Silicone Joint Sealant: ASTM C 920.

##### 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. BASF Building Systems.
- b. Dow Corning Corporation.
- c. GE Advanced Materials - Silicones.
- d. May National Associates, Inc.
- e. Pecora Corporation.
- f. Polymeric Systems, Inc.
- g. Schnee-Morehead, Inc.
- h. Sika Corporation; Construction Products Division.
- i. Tremco Incorporated.

##### 2. Type: Single component (S) or multicomponent (M).

##### 3. Grade: nonsag (NS).

##### 4. Class: 100/50.

### 2.3 LATEX JOINT SEALANTS

#### A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

##### 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. BASF Building Systems.
- b. Bostik, Inc.
- c. May National Associates, Inc.
- d. Pecora Corporation.
- e. Schnee-Morehead, Inc.
- f. Tremco Incorporated.

##### 2. For use with interior paintable surfaces only.

### 2.4 JOINT SEALANT BACKING

#### A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

#### B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

### 2.5 MISCELLANEOUS MATERIALS

#### A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

#### B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

#### C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

##### A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

##### 1. Remove laitance and form-release agents from concrete.

##### 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

##### B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

##### C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

## 3.2 INSTALLATION

#### A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

#### B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

##### 1. Do not leave gaps between ends of sealant backings.

##### 2. Do not stretch, twist, puncture, or tear sealant backings.

##### 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

##### C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

##### D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

##### 1. Place sealants so they directly contact and fully wet joint substrates.

##### 2. Completely fill recesses in each joint configuration.

##### 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

##### E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

##### 1. Remove excess sealant from surfaces adjacent to joints.

##### 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

##### 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

##### F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

#### END OF SECTION 079200

## SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section includes hollow-metal work.

#### 1.2 DEFINITIONS

##### A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

#### 1.3 ACTION SUBMITTALS

##### A. Product Data: For each type of product.

##### B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.

##### C. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

##### A. Product test reports.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

##### A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amweld International, LLC.
2. Ceco Door Products; an Assa Abloy Group company.
3. Commercial Door & Hardware Inc.
4. Curries Company; an Assa Abloy Group company.
5. Mesker Door Inc.
6. Pioneer Industries, Inc.
7. Premier Products, Inc.
8. Republic Doors and Frames.
9. Security Metal Products Corp.
10. Steelcraft; an Ingersoll-Rand company.

### 2.2 INTERIOR DOORS AND FRAMES

#### A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.

##### 1. Physical Performance: Level B according to SDI A250.4.

#### 2. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Face: Metallic-coated, cold-rolled steel sheet, minimum thickness of 0.042 inch (1.0 mm).
- d. Edge Construction: Model 1, Full Flush.
- e. Core: Manufacturer's standard.

#### 3. Frames:

- a. Materials: Metallic-coated, steel sheet, minimum thickness of 0.053 inch (1.3 mm).
- b. Construction: Face welded.
- c. Exposed Finish: Prime.

### 2.3 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

#### A. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3.

##### 1. Physical Performance: Level A according to SDI A250.4.

#### 2. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), with minimum A40 (ZF120) coating.
- d. Edge Construction: Model 1, Full Flush and Model 3, Stile and Rail.
- e. Core: Manufacturer's standard insulation material.

#### 3. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), with minimum A40 (ZF120) coating.
- b. Construction: Full profile welded.
- c. Exposed Finish: Prime.

### 2.4 FRAME ANCHORS

#### A. Jamb Anchors:

##### 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (51 mm) wide by 10 inches (254 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick.

##### 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.

##### 3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.

##### 4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

#### B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), and as follows:

##### 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

##### 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at finish floor surface.

### 2.5 MATERIALS

#### A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

#### B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

#### C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

#### D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

##### 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

##### E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

##### F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

##### G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).

## 2.6 FABRICATION

#### A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

#### B. Hollow-Metal Doors:

##### 1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.

##### C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

##### 1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

##### 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

##### 3. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.

##### 4. Jamb Anchors: Provide number and spacing of anchors as follows:

##### a. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:

- 1) Three anchors per jamb up to 60 inches (1524 mm) high.
- 2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
- 3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
- 4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.

##### b. Compression Type: Not less than two anchors in each frame.

##### c. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.

##### 5. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.

##### a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

##### b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

##### D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

##### 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

##### 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

##### E. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with mitered headline joints.

##### 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.

##### 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.

##### 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.

##### 4. Provide loose stops and moldings on inside of hollow-metal work.

##### 5. Coordinate rabbit width between fixed and removable stops with glazing and installation types indicated.

### 2.7 STEEL FINISHES

#### A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

#### 1. Shop Primer: SDI A250.10.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

##### A. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

##### 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

##### a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.

##### b. Install frames with removable stops located on secure side of opening.

##### c. Remove temporary braces necessary for installation only after frames have been properly set and secured.

##### d. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

##### 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

##### a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

##### 3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.

##### 4. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.

##### 5. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

##### a. Squareness: