

SECTION 07 72 33

ROOF HATCHES

****Note to Specifier**** This specification contains component and configuration options.
Where indicated, choose the appropriate choice for your specific project requirements.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Industrial Sliding Roof Hatch with Frame.
2. Roof Hatch Hardware.

B. Related Sections:

1. Division 03 – Cast-In-Place Concrete.
2. Division 04 – Concrete Unit Masonry.
3. Division 05 – Structural Steel Framing.

1.2 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation instructions.

B. Shop Drawings: Provide shop drawings showing layout, profiles, and product components, including anchorage, hardware, and finishes. Include dimensional plans, applicable material specifications, elevations and sections detailing mounting and connections.

1. Contractor to provide manufacturer with field measurements and mounting structure prior to commencement of shop drawings.

C. Calculations: Upon signed finalization and approval of dimensions, mounting location material and configuration, and load requirements;

****Note to Specifier**** Choose one (1) of the following statements.

1. Engineering calculations are not required for this roof hatch.
2. Submit calculations by a qualified engineer, to verify roof hatch's ability to withstand the design loading.

3. Submit stamped calculations by a registered professional engineer from within the state or territory where the project will be constructed or substantially improved, to verify the roof hatch's ability to withstand the design loading.

1.3 CLOSEOUT SUBMITTALS

- A. Provide Operation and Maintenance data to include methods for maintaining installed products, precautions against cleaning materials and methods detrimental to finishes and performance.

1.4 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Manufacturer must demonstrate a minimum of five (5) years successful experience in design and manufacture of similar related closures. Upon request, provide supporting evidence including list of installations, descriptions, name, and method of contact.
- B. **Minimum Qualifications:** Manufacturer must demonstrate compliance and certification of a Quality Management System administered by the International Organization for Standardization (ISO). Documentation of current certification status to be provided upon request.
- C. **Welder Qualifications:** Welders Certified in accordance with American Welding Society Procedures for applicable material used in production of specified product.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging container with identification markings intact until ready for installation.
- B. Protect materials from exposure to moisture during storage.
- C. Store materials in a dry, warm, ventilated weathertight location. If outdoor storage is required, block materials to store at an incline, to prevent pooling of any moisture and promote runoff. Tarp materials in a tent-like arrangement, elevated above the product with open sides to allow airflow. Store loose or high value components in a dry, controlled environment.
- D. Use caution when unloading and handling product to avoid bending, denting, crushing, or other damage to the product.
- E. When using forklifts, use forks of proper length to fully support product being moved. Consult "Approved for Construction" drawings or consult with factory for proper lift points.

1.6 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 indicated limits.

1.7 COORDINATION

- A. Conduct site survey and provide to manufacturer, prior to manufacturer's commencement of shop drawings, the actual site conditions of the mounting location, to include; material type, dimensions and configuration, interferences with mounting surface, or any other condition that may impact the ability of the gate to be properly installed.
- B. Coordinate work with other operations and installation of adjacent materials to avoid damage.

1.8 WARRANTY

- A. Manufacturer's Standard Warranty: Product to be free from defects in material and workmanship for a period of one (1) year from date of shipment.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Design industrial sliding roof hatch to support, solely or in combines of, temporary super-imposed live loads as indicated below. All applied types of related loadings are transferred from industrial product barriers, solely or in combinations of, by anchorage to existing curbs or new construction, and direct pressure contact to structural walls or other structural elements.

****Note to Specifier** Delete any loading types that do not apply.**

- 1. Positive Wind/Draft Pressure Loading
 - 2. Negative Wind/Draft Pressure Loading
 - 3. Live Loading: 30 lbs.
- B. Engineer Code Practices: Engineer industrial products to conform to the design requirements that are based on the latest adopted edition of the International Building Code (IBC). LFRD and/or ASD methodologies are applied as appropriate to align with specific project specifications and/or limited published material data.

2.2 SLIDING ROOF HATCH WITH FRAME

- A. Description: Sliding Roof Hatch including hatch frame, hatch panel, and hatch hardware.
 - 1. Approved Manufacturer: PS Access Solutions™, which is located at: 1150 S. 48th Street, Grand Forks, ND 58201; Toll Free Tel: 877.446.1519; Email: 4psinfo@psindustries.com; Web: www.psaccesssolutions.com or www.psindustries.com
 - 1. Basis of Design Product: Model: RFH.
- B. Substitutions: Not permitted.

- C. Single Source Responsibilities: Obtain all sliding roof hatch assemblies from single manufacturer.

2.3 EQUIPMENT

A. Products Details:

1. The industrial Sliding Roof Hatches are designed to withstand high winds and snow loads, ensuring a smooth and effortless operation in virtually all-weather conditions. They are used for personnel access, building ventilation and controlling airflow, or moving large materials or equipment in/out of facility.
2. Sealing Requirements: Brush weather seals, full perimeter design shall provide an effective barrier against wind, hot/cold temp differences, dust, debris, and moisture.
3. Operation: Safe, convenient available in manual or electric operation that improves personnel safety.
4. Mounting/Load Transfer: Anchor to existing structure and new construction. Sliding roof hatch designed for specific loads and will transfer loads to adjacent structure.
5. Frames to be anchored utilizing mechanical, chemical or other framing methods as designed. Installer to provide anchors, unless otherwise.
6. Provide rectangular opening with square corners to facilitate easy passage.

2.4 MATERIALS

- A. Hatch Panel: Nominal 5" thickness, fabricated from an internal welded mild steel framework. Sheeting to be mild steel, factory bonded in place.

****Note to Specifier** Choose one (1) of the following materials.**

1. Steel: Commercial quality, low carbon steel of appropriate size and strength, welded and structurally bonded.
2. Stainless Steel Type 304 or 316: stainless steel of appropriate size and strength, welded and structurally bonded.

- B. Hatch Sheeting: Top and bottom face of hatch panel to be steel sheeting, welded in place of the following material type and gauge;

****Note to Specifier** Choose one (1) of the following materials.**

1. Steel: Commercial quality, low carbon steel of appropriate size and strength, welded and structurally bonded.
 - a. Top sheeted with 26-gauge steel ribbed panels, and flat sheeted with 16-gauge on bottom.
2. Stainless Steel Type 304 or 316: stainless steel of appropriate size and strength, welded and structurally bonded.
 - a. Top and bottom sheeted with 16-gauge flat sheeting.

- C. Hatch Panel Insulation: Framework voids to be Fiberglass. Nominal R-Value = 14 (estimated).

- D. Weatherhood: To be an integral part of the hatch panel, to be fabricated from 12-gauge steel.
- E. Track and Frame: To be factory-welded construction with factory located splice tabs for field attachment to curb frame. Adjustable height support legs extending to roof surface with minimum of 8" square roof pads. Hatch operates on minimum 6" diameter aluminum, axles shall be minimum ½" diameter of high strength steel. All rollers to be non-corrosive and of spark-less design. Track and frame to be fabricated with appropriate material as required for the loading;

****Note to Specifier** Choose one (1) of the following materials.**

- 1. Steel: Commercial quality, low carbon steel of appropriate size and strength, welded and structurally bonded.
 - 2. Stainless Steel Type 304 or 316: stainless steel of appropriate size and strength, welded and structurally bonded.
- F. Weatherseals to be brush type, full perimeter, and field replaceable.
 - 1. Material: Nylon Brush with a mill finish aluminum retainer, unless otherwise noted.
- G. Operating Hardware: Provide hardware appropriate for the size and weight of the industrial sliding roof hatch. Hardware to be factory located as practical. Latching hardware to be indicated on drawings. Hatch Panel to be factory prepared for applicable latching devices.
 - 1. Recessed pull handle, interior of hatch panel.
 - 2. Provide two (12) 12" x 3" bow handles mounted to the top surface of hatch panel.

****Note to Specifier** The following are offered as an option. Delete if not required.**

- 3. Electric Operator: Provide one (1) NEMA 1 chain-drive operator with Weatherhood. Include one (1) surface mount, 3-button (One-Close-Stop) Control Station.
 - 4. Latch Hardware.
- H. Perimeter Safety Railing: To be four (4) sided, removable railing to be 1 ½" square 11-gauge steel tubing vertical posts, and horizontal railings of 1.74" outside diameter, 0.065" wall thickness mild steel, pre-galvanized before fabrication, tubing. Provide top rail and mid-rail sized and dimensioned to provide a safety railing system, which meets Federal OSHA requirements for Standard Railings at time of production.
- I. Frame Mounting Hardware: Provide anchors, as required.
- J. Finish:
 - 1. Steel Shop Finish: Apply the following paint system in accordance with manufacturer recommendations and instructions;
 - a. Primer Only: One (1) shop coat of manufacturers' standard shop primer (S-W DTM Epoxy Primer). No top finish coat.
 - b. Finish: Powder Coat (#49 Gray)

****Note to Specifier** The Following Steel Shop finishes are offered as options. Delete if not required.**

- c. Topcoat Finish: One (1) coat of primer as shown above with one (1) shop coat of manufacturer's standard two-component polyurethane (S-W Genesis® Lustral™ Single Stage System – LST3).
 - d. Finish: Epoxy; One (1) coat of Macropoxy 646 with two (2) coats of Acrolon 218.
2. Stainless Steel products to be mill finish, welds are ground smooth, not polished, and are factory acid washed, neutralized and rinsed after fabrication.
- K. Labeling: Factory mounted, decal labels for product identification.

2.5 FABRICATION

- A. Fit and factory assemble items in largest practical sections, for shipment to site.
- B. Fabricate items with joints tightly fitted and secured.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until mounting substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another subcontractor, notify Architect of uncompleted preparation before proceeding.
- C. Inspect opening for compliance with manufacturer requirements. Verify open conditions are within required tolerances.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's installation instructions, "Approved for Construction" drawings, shipping, handling, and storage instructions, and product carton instructions for installation.
- B. Product must be installed level, square, plumb, and rigid.
- C. Tolerances: All dimensional requirements must be in accordance with manufacturer's installation instructions and "Approved for Construction" drawings.

- D. Verify all anchorage is in accordance with manufacturer's installation instructions and applicable data sheets.
- E. Inspect weatherseal for damage, wear, and adhesion. Replace compromised weatherseals immediately.

3.4 FIELD QUALITY CONTROL

- A. Field Testing:
 - 1. Installer to operate and field verified products including the sealing surfaces to assure that they maintain contact at the correct sealing points.
 - 2. Installer to verify that rollers and locking assemblies operate freely and correctly.

3.5 CLEANING

- A. Touch-up, repair or replace damaged products or components before Substantial Completion.
- B. Clean all sealing surfaces.

3.6 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION