

This guide specification was prepared utilizing 3-part format recommended by the Construction Specifications Institute (CSI), and generally incorporates recommendations from their SectionFormat™/Page Format™, and MasterFormat™, latest Editions, insofar as practicable.

Carefully review and edit the text to meet the Project requirements and coordinate this Section with the remainder of the Specifications and the Drawings.

Where bracketed text is indicated, e.g. [text], make appropriate selection and delete the remainder of text within additional brackets, highlighting, and bold face type, if any.

Consult the manufacturer for assistance in editing this guide specification for specific Project applications where necessary.

This Specification was current at the time of publication but is subject to change. Please confirm the accuracy of these specifications with the manufacturer prior to use.



DUR-RED PRODUCTS

SECTION 07 72 33 ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. RHU DURA-HATCH SERIES - ROOF HATCH
 - 2. RHUV DURA-HATCH SERIES – DOMED ROOF HATCH
 - 3. RHDG-STH SERIES – RHDG ROOF HATCH WITH SAFETY RAILING
 - 4. ACCESSORIES:
 - a. RSHWB AND RSHWC SAFETY RAILINGS
 - b. SAFETY POSTS
- B. Related Sections
 - 1. Section Includes: Furnish and install factory fabricated roof hatches.
 - 2. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SPECIFIER: Revise section numbers and titles in subparagraphs below per CSI MasterFormat™ and Project requirements.

- C. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 05 50 00 - Metal fabrications for metal vertical ladders, ships' ladders and stairs for

- access to roof hatches
- 2. Section 07 01 40 – Maintenance roofing
- 3. Section 07 01 70 – Operation and maintenance of roofing specialties and accessories
- 4. Section 07 06 70 – Schedules for roof specialties and accessories
- 5. Section 07 22 00 – Roof and deck installation
- 6. Section 07 26 00 – Vapor retarders
- 7. Section 07 27 00 – Air barriers
- 8. Section 07 50 00 – Membrane roofing
- 9. Section 07 81 00 – Roofing specialties
- 10. Section 07 72 00 – Roofing accessories
- 11. Section 07 72 43 – Roof walk boards
- 12. Section 07 72 46 – Roof walkways
- 13. Section 08 71 00 – Hardware: For lock type furnished by others
- 14. Section 09 91 00 – Painting: For Field Painting of Roof Hatches

1.02 Reference Standards:

- 1. American Society of Testing and Materials (ASTM) and Others:
 - a. ASTM A36/A36M-12, Standard Specification for Carbon Structural Steel
 - b. ASTM A153/A153M-09, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - c. ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanized) by the Hot-Dip Process
 - d. ASTM A879/A879M-12, Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
 - e. ASTM A1008/A1008M-12a, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
 - f. ASTM B209-10, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - g. ASTM B221-12a, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - h. ASTM F2329-11, Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners
 - i. ASTM C1289-17, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation
 - a. International Code Council (ICC)
- 2. International Building Code (IBC)

1.03 ACTION SUBMITTALS

SPECIFIER: Revise Section number in the paragraph below to match that used in the Project Manual.

- A. Submit in accordance with Section [01 33 00] [other]:
 - 1. Product Data:

- a. Materials description for roof hatches including details showing mounting type, relationships to surrounding construction, hatch type, materials, and construction, and locking features.
- b. Installation instructions for each product specified.
2. Shop Drawings:
 - a. Include details of each hatch type, size and description of components, materials, attachment devices, description of frame and finish and construction details.
 - b. Schedule showing each type of hatch, locations, sizes, latching or locking provisions, and other data pertinent to installation
 - c. Indicate installation procedures and accessories required for a complete installation.

SPECIFIER: Delete subparagraph below for standard steel or galvanized steel hatches; retain for aluminum or other factory-finished products.

3. Samples: For each roof hatch curb section, 12 inches high by 4 inches wide in size, and in specified finish.

1.04 QUALITY ASSURANCE

- A. Regulatory Requirements:
 1. OSHA 29 CFR 1910.23 Walking-Working Surfaces, Ladders
 2. OSHA 29 CFR 1910.25 Walking-Working Surfaces, Stairways
 3. OSHA 29 CFR 1910.28 Walking-Working Surfaces – Duty to have Fall Protection
 4. OSHA 29 CFR 1910.29 Walking-Working Surfaces – Fall Protection Systems
 5. International Building Code (IBC) Section 1015.7 Roof Access
 6. International Building Code (IBC) Section 1011.12 Means of Egress, Stairway to Roof
 7. International Building Code (IBC) Section 1011.13 Means of Egress, Guards
 8. Comply with standards referenced in Article 1.02 REFERENCES.
 9. Provide roof hatches produced by a single manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle roof hatches using means and methods that will prevent damage, deterioration, or loss.
- B. Deliver units in manufacturer's original packaging, properly labeled for identification.

PART 2 - PRODUCTS

2.01 ROOF HATCH MANUFACTURERS

- A. Acceptable Manufacturers:

Dur-Red Products – Part of Activar Construction Products Group, Inc.
9702 Newton Avenue S., Bloomington, MN 55431, available exclusively through Logistics Lighting with an extended warranty and National Account pricing. Contact for quotes or product questions: Sales@LogisticsLighting.com or 307-633-9696 or Toll-Free at 844-455-7283 website: www.LogisticsLighting.com
- B. Substitutions: Manufacturers seeking approval of their products are required to comply with the Owner's Instructions to Bidders, generally contained in the Project Manual.

2.02 RHUG Dura-Hatch Series – Galvanneal Steel Roof Hatch

- A. Style RHUG: Galvanneal steel, insulated roof hatch cover and roof curb.
1. Model No. RHUG [insert remainder of model number from subparagraph 8 below].
 2. Performance Criteria: Tested and approved to support a minimum live load of 40 pounds per square foot (195 kilograms per square meter).
 3. **Cover for Sizes up to 30 inches x 96 inches:** Insulated with 1-inch polyisocyanurate. 14-gauge galvanneal steel exterior, welded cover with 22-gauge liner. Door opens 88 degrees. Cover has weatherproof EPDM sponge rubber adhesive-backed seal.
 4. **Cover for sizes 36 inches x 96 inches and larger:** Insulated with 1-inch polyisocyanurate. 11-gauge aluminum exterior, welded cover with 18-gauge liner. Door opens 88 degrees. Cover has continuous weatherproof neoprene bulb gasket
 5. Curb: Insulated with 1-inch polyisocyanurate. 14-gauge galvanneal steel single wall curb and counterflashing. 12 inches (305 mm) high, 3-1/2 inch (88.9 mm) wide flange for securing to roof.
 6. Hold-Open Arm: Clear zinc-plated steel hold-open arm.
 7. Latch: Zinc-plated steel single point slam latch. Larger models have two-point latch.
 8. Model and Hatch Opening Size Width by Length (Hinged on length side):
 - a. RHUG-3030GT: 30 inches x 30 inches (762 mm x 762 mm)
 - b. RHUG-1GT: 36 inches x 30 inches (914 mm x 762 mm)
 - c. RHUG-2GT: 30 inches x 54 inches (762 mm x 1371.60 mm)
 - d. RHUG-4GT: 36 inches x 36 inches (914.40 mm x 914.40 mm)
 - e. RHUG-5GT: 48 inches x 48 inches (1219.20 mm x 1219.20 mm)
 - f. RHUG-3072GT: 30 inches x 72 inches (762 mm x 1828.80 mm)
 - g. RHUG-3672GT: 36 inches x 72 inches (914.40 mm x 1828.80 mm)
 - h. RHUG-3GT: 30 inches x 96 inches (762 mm x 2438.40 mm)
 - i. RHUGA-3696ST: 36 inches x 96 inches (914.40 mm x 2438.40 mm)
 - j. RHUGA-4896ST: 48 inches x 96 inches (1219.20 mm x 2438.40 mm)
 - k. RHUGA-48120ST: 48 inches x 120 inches (1219.20 mm x 3048.00mm)
 - l. <Insert dimensions>
 9. Model RHUG Options:

SPECIFIER: Select specific options listed below, if desired.

 - a. All-But-Curb
 - b. Double wall curb
 - c. 2.5-inch (63.5 mm) curb mount flange.
 - d. Standing seam curb [Enter standing seam manufacturer's model]
 - e. Curb Heights, choose from 13 inches (330.2 mm) up to 24 inches (609.6 mm) in height; [___inches]
 - f. Energy-efficient polyisocyanurate insulation, 2 inches (50.8mm) (R-12) on curb walls.
 - g. Galvanneal steel curb with aluminum cover.
 - h. Stainless steel Type 316 hardware.

2.03 RHUA Dura-Hatch Series – Aluminum Roof Hatch

- A. Style RHUA: Aluminum, insulated roof hatch cover and roof curb.
1. Model No. RHUA [insert remainder of model number from subparagraph 8 below].
 2. Performance Criteria: Tested and approved to support a minimum live load of 40 pounds per square foot (195 kilogram per square meter).
 3. Cover: Insulated with 1-inch polyisocyanurate. 11-gauge aluminum exterior, welded cover with 18-gauge liner. Door opens 88 degrees. Cover has continuous Weatherproof EPDM

- sponge rubber adhesive-backed seal.
4. Curb: Insulated with 1-inch polyisocyanurate. 14 gauge aluminum single wall curb and counterflashing. 12 inches (305 mm) high, 3-1/2 inches (88.9 mm) wide flange for securing to roof.
 5. Hold-Open Arm: Clear zinc-plated steel hold-open arm.
 6. Latch: Zinc-plated steel single point slam latch. Larger models have two-point latch.
 7. Finish: silver texture powder coat.
 8. Model and Hatch Opening Size Width by Length (Hinged on length side):
 - a. RHUA-3030ST: 30 inches x 30 inches (762 mm x 762 mm)
 - b. RHUA-1ST: 36 inches x 30 inches (914 mm x 762 mm)
 - c. RHUA-2ST: 30 inches x 54 inches (762 mm x 1371.60)
 - d. RHUA-4ST: 36 inches x 36 inches (914.40 mm x 914.40 mm)
 - e. RHUA-5ST: 48 inches x 48 inches (1219.20 mm x 1219.20 mm)
 - f. RHUA-3072ST: 30 inches x 72 inches (762 mm x 1828.80 mm)
 - g. RHUA-3672ST: 36 inches x 72 inches (914.40 mm x 1828.80 mm)
 - h. RHUA-3ST; 30 inches x 96 inches (762 mm x 2438.40 mm)
 - i. RHUA-3696ST: 36 inches X 96 inches (914.40 mm x 2438.40 mm)
 - j. RHUA-4896ST: 48 inches x 96 inches (1219.20 mm x 2438.40 mm)
 - k. RHUA-48120ST: 48 inches x 120 inches (1219.20 mm x 3048.00mm)
 - l. <Insert dimensions>
 9. Model RHUA Options:

SPECIFIER: Select specific options listed below, if desired.

- a. All-But-Curb
- b. Double wall curb
- c. 2.5-inch (63.5 mm) curb mount flange.
- d. Standing seam curb [enter manufacturer's model]
- e. Curb heights, choose from 13 inches (330.2 mm) up to 24 inches (609.6 mm) in height; [___inches]
- f. Energy-efficient polyisocyanurate insulation, 2 inches (50.8mm) (R-12) on curb walls.
- g. Galvanneal steel curbs with aluminum covers.
- h. Stainless steel Type 316 hardware.

2.04 RHUVG Dura-Hatch View Series – Galvanneal Steel Domed Roof Hatch

- A. Style RHUVG: Galvanneal steel, insulated domed roof hatch cover and roof curb.
 1. Model No. RHUVG [**insert remainder of model number from subparagraph 8 below**].
 2. Performance Criteria: Tested and approved to support a minimum live load of 40 pounds per square foot (195 kilograms per square meter).
 3. Cover: Domed and insulated with 1-inch polyisocyanurate. 14-gauge galvanneal steel exterior, welded cover with 22-gauge liner. Door opens 88 degrees. Cover has continuous Weatherproof EPDM sponge rubber adhesive-backed seal
 - a. Dome Type: Double polycarbonate domes, clear over white.
 4. Curb: Insulated with 1-inch polyisocyanurate. 14-gauge galvanneal steel single wall curb and counterflashing. 12 inches (305 mm) high, 3-1/2 inch (88.9 mm) wide flange for securing to roof.
 5. Hold-Open Arm: Clear zinc-plated steel hold-open arm.
 6. Latch: Zinc-plated steel single point slam latch. Larger models have two-point latch.
 7. Finish: Gray texture powder coat on steel.
 8. Model and Hatch Opening Size Width by Length (Hinged on length side):

- a. RHUVG-3030GT: 30 inches x 30 inches (762 mm x 762 mm)
- b. RHUVG-2GT: 30 inches x 54 inches (762 mm x 1371.60 mm)
- c. RHUVG-1GT: 36 inches X 30 inches (914 mm x 762 mm)
- d. RHUVG-4GT: 36 inches x 36 inches (914.40 mm x 914.40 mm)
- e. RHUVG-5GT: 48 inches x 48 inches (1219.20 mm x 1219.20 mm)
- f. <Insert dimensions>

9. Model RHUVG Options:

SPECIFIER: Select specific options listed below, if desired.

- a. Dome: [Single Clear Polycarbonate], [Single White Polycarbonate], [Double with White Polycarbonate Outer and White Polycarbonate Inner].
- b. All- But-Curb.
- c. Double Wall Curb.
- d. 2.5-inch (63.5 mm) curb mount flange.
- e. Standing Seam Curb [Enter manufacturer's model].
- f. Curb Heights, choose from 13 inches (330.2 mm) up to 24 inches (609.6 mm) in height; [___inches]
- g. Energy-efficient polyisocyanurate insulation, 2 inches (50.8mm) (R-12) on curb walls.
- h. Galvanneal steel curbs with Aluminum covers
- i. Stainless steel Type 316 hardware

2.05 RHUVA Dura-Hatch View Series – Aluminum Domed Roof Hatch

A. Style RHUVA: Aluminum, insulated domed roof hatch cover and roof curb.

- 1. Model No. RHUVA [**insert remainder of model number from subparagraph 8 below**].
- 2. Door opens 88 degrees. Cover has continuous Weatherproof EPDM sponge rubber adhesive-backed seal.
- 3. Dome Type: Double polycarbonate domes, clear over white.
- 4. Curb: Insulated with 1inch polyisocyanurate. 14-gauge aluminum single wall curb and counterflashing.12 inches high, 3-1/2 inch (88.9 mm) wide flange for securing to roof.
- 5. Hold-Open Arm: Clear zinc-plated steel hold-open arm.
- 6. Latch: Zinc-plated steel single point slam latch. Larger models have two-point latch.
- 7. Finish: Silver texture powder coat.
- 8. Model and Hatch Opening Size Width by Length (Hinged on length side):
 - a. RHUVA-3030ST: 30 inches x 30 inches (762 mm x 762 mm)
 - b. RHUVA-2ST: 30 inches x 54 inches (762 mm x 1371.60)
 - c. RHUVA-1ST: 36 inches x 30 inches (914 mm x 762 mm)
 - d. RHUVA-4ST: 36 inches x 36 inches (914.40 mm x 914.40 mm)
 - e. RHUVA-5ST: 48 inches x 48 inches (1219.20 mm x 1219.20 mm)
 - f. <Insert dimensions>

9. Model RHUVA Options:

SPECIFIER: Select specific options listed below, if desired.

- a. Dome: [Single clear polycarbonate], [single white polycarbonate], [double with white polycarbonate outer and white polycarbonate inner.
- b. Double wall curb.
- c. 2.5-inch (63.5 mm) curb mount flange.
- d. Standing seam curb [enter manufacturer's model]
- e. Curb Heights, choose from 13 inches (330.2 mm) up to 24 inches (609.6 mm) in height
- f. Energy-efficient polyisocyanurate insulation, 2 inches (50.8mm) (R-12) on curb walls.

- g. Galvanneal steel curbs with Aluminum covers.
- h. Stainless steel Type 316 hardware.

2.06 ACCESSORIES

A. RSHWB Series – Bolt-On Safety Railing

1. **Style RSHWB:** A bolt-on safety railing designed to bolt on the curb counterflashing and does not penetrate the curb protecting the integrity of the roof membrane.
 - a. Model No. RSHWB [insert remainder of model number from subparagraph j. below]
 - b. Certification: Meets OSHA required compliance for safe egress and ingress through rooftop hatch openings while hatch is in use; complies with OSHA CFR 29-1910.28 and CFR 29-1910.29.
 - c. Material: 1- $\frac{5}{8}$ " x .065" (16 gauge) ASTM A513 galvanized steel tubing
 - d. Bracket Material: 2" x 2" x .048" (18 gauge) square galvanized steel tubing
 - e. Finish: Yellow powder coat
 - f. Hinges: Steel, adjustable spring hinges
 - g. Gate: Self-closing, self-latching with telescoping size adjustment
 - h. Latch: Steel, black powder coat pin hooks around gravity latch catch
 - i. Hardware: Black plastic tubing caps and zinc-plated steel hardware
 - j. Hatch Opening Size, Railing Weight, and Installs to Hatch Model Noted Width by Length (Hinged on length side):
 - i RSHWB-1LY: 36 inches by 30 inches (914.4 mm by 762 mm); 74 lbs. (33.5 kg); Designed to fit Models RHUG/RHUA-1.
 - ii RSHWB-2WY: 30 inches by 54 inches (762 mm by 1371.60 mm); 81 lbs. (36.7kg); Designed to fit Models RHUG/RHUA-2.
 - iii RSHWB-3WY: 30 inches by 96 inches (762 mm by 2438.40 mm); 107 lbs. (48.5 kg); Designed to fit Models RHUG/RHUA-3.
 - iv RSHWB-4LY: 36 inches by 36 inches (914.40 mm by 914.40 mm); 77 lbs. (34.9 kg); Designed to fit Models RHUG/RHUA-4.
 - v RSHWB-5LY: 48 inches by 48 inches (1219.20 mm by 1219.20 mm); 84 lbs. (38.1kg); Designed to fit Models RHUG/RHUA-5.
 - vi <Insert dimensions>

B. RSHWC Series – Compression Safety Railing For Existing Roof Hatches

1. **Style RSHWC:** A compression-style safety railing designed to mount onto the curb counterflashing with adjustable width and length to accommodate other manufacturer's designs
 - a. **Model No. RSHWC-** [insert remainder of model number from subparagraph j. below].
 - b. Certification: Meets OSHA required compliance for safe egress and ingress through rooftop hatch openings while hatch is in use; complies with OSHA CFR 29-1910.28 and CFR 29-1910.29.
 - c. Material: 1- $\frac{5}{8}$ " x .065" (16 gauge) ASTM A513 galvanized steel tubing
 - d. Bracket Material: 2" x 2" x .048" (18 gauge) square galvanized steel tubing
 - e. Finish: Yellow powder coat
 - f. Hinges: Steel, adjustable spring hinges
 - g. Gate: Self-closing, self-latching with telescoping size adjustment

- h. Latch: Steel, black powder coat pin hooks around gravity latch catch
 - i. Hardware: Black plastic tubing caps and zinc-plated steel hardware
 - j. Hatch Opening Size, Railing Weight, and Installs to Hatch Model Noted Width by Length (Hinged on length side):
 - i RSHWC-1LY: 36 inches by 30 inches (914.4 mm by 762 mm); 88 lbs. (39.9 kg); Designed to fit Models RHUG/RHUA-1.
 - ii RSHWC-2WY: 30 inches by 54 inches (762 mm by 1371.60 mm); 103 lbs. (46.7 kg); Designed to fit Models RHUG/RHUA-2.
 - iii RSHWC-3WY: 30 inches by 96 inches (762 mm by 2438.40 mm); 155 lbs. (70.3 kg); Designed to fit Models RHUG/RHUA-3.
 - iv RSHWC-4LY: 36 inches by 36 inches (914.40 mm by 914.40 mm); 91 lbs. (41.2 kg); Designed to fit Models RHUG/RHUA-4.
 - v RSHWC-5LY: 48 inches by 48 inches (1219.20 mm by 1219.20 mm); 103 lbs. (46.7 kg); Designed to fit Models RHUG/RHUA-5.
 - vi <Insert dimensions>
- C. **Ladder-Assist Safety Post (Extendable):** Preassembled steel safety post which attaches directly to the top two rungs (either square or round) of the vertical access ladder with two U-shaped bolts.
- 1. **Model LP- 4**
 - a. Post Assembly: Square post with latch which maintains the post at variable heights, and spring coil at base to allow user to lift (extend) post with one hand.
 - b. Post Finish: Safety yellow powder coat.
 - c. Weight: 25 lbs. (12 kg).
- D. **Ladder-Assist Safety Post – Extension-Up Series:** Preassembled steel safety post which attaches directly to the top 2 rungs (either square or round) of the vertical access ladder with 2 bolts and mounting bracket.
- 1. **Model RSLP**
 - a. Post Assembly: Square post with release latch which maintains the post securely locked into the upright position, and spring coil at base to allow user to lift (extend) post with one hand.
 - b. Post Finish G: Hot-dipped galvanized.
 - c. Post Finish Y: Powder coat painted safety yellow.
 - d. Weight 23 lbs
- E. **Ladder-Assist Safety Post – Foldable Series:** Preassembled steel safety post which attaches directly to and stows inside the roof hatch curb. Allows user to lift post and automatically lock into upright position with one hand.
- 1. **Model LP-6.**
 - a. Post Assembly: 1 ½ inches x 1 ½ inches 12 gauge steel square post attached by swivel bolt to welded 10-gauge steel mounting plate.
 - b. Post Finish: Safety yellow powder coat.
 - c. Weight: 8 lbs. (4 kg).
 - d. Testing: 200-pound design load rating.

2.07 RHDG-STH Series – Combination Roof Hatch and Safety Rail System

- A. **Style RHDG-STH:** Galvanneal steel roof hatch with bolt-on safety rail system.
1. RHDG-[X]-STH: **insert remainder of model number from subparagraph 4 below**].
 2. Roof Hatch:
 - a. Performance Criteria: Tested and approved to support a minimum live load of 40 pounds per square foot (195 kilogram per square meter).
 - b. Cover: Insulated, 14-gauge (1.99 mm) galvanneal steel exterior, welded cover with 22-gauge liner. Door opens 75 degrees.
 - i. Continuous weatherproof EPDM sponge rubber adhesive backed gasket.
 - ii. Insulation: 1-inch polyisocyanurate with thermal resistance R-6.
 - c. Curb: Insulated, 14-gauge (1.99 mm) galvanneal steel single wall curb and counterflashing with DiamondGrip™ feature. 12 inches (305 mm) high, 3-1/2 inches (88.9 mm) wide flange for securing to roof. 1-inch polyisocyanurate with thermal resistance R-6
 - d. Hold-open arm: Clear zinc-plated steel hold-open arm.
 - e. Latch: Clear zinc-plated steel slam latch with inside and outside handles and padlock hasps. Tested to 50 pounds per square foot (244 kg per square meter) wind uplift.
 - f. Finish: White textured powder coat.
 3. Bolt-On Safety Railing: Designed to bolt on the curb counterflashing and does not penetrate the curb protecting the integrity of the roof membrane.
 - a. Certification: Meets OSHA required compliance for safe egress and ingress through rooftop hatch openings while hatch is in use; complies with OSHA CFR 29-1910.28 and CFR 29-1910.29.
 - b. Rail: Material: 1-5/8" x .065" (16 gauge) galvanized steel tubing
 - c. Bracket Material: 2" x 2" square galvanized steel tubing 1/4" and 1/2" plate CRS
 - d. Finish: Yellow powder coat
 - e. Hinges: Steel, adjustable spring hinges
 - f. Gate: Self-closing, self-latching with telescoping size adjustment
 - g. Latch: Steel, black powder coat pin hooks around gravity latch catch
 - h. Hardware: Black plastic tubing caps and zinc plated steel hardware.
 4. Hatch Opening Size and Total Weight with Rail:
 - a. RHDG-1WT-STH: 30 inches by 36 inches (762 mm by 914.40 mm); 183 lbs.(84 kg).
 - b. RHDG-2WT-STH: 30 inches by 54 inches (762 mm by 1371.60 mm); 245 lbs. (112 kg).
 - c. RHDG-3WT-STH: 30 inches by 96 inches (762 mm by 2438.40 mm); 315 lbs. (143 kg).
 - d. RHDG-4WT-STH: 36 inches by 36 inches (914.40 mm by 914.40 mm); 219 lbs. (100 kg).
 - e. RHDG-5WT-STH: 48 inches by 48 inches (1219.20 mm by 1219.20 mm); 298 lbs. (136 kg).

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Notify the Contractor in writing of conditions detrimental to proper and timely completion of the installation.
2. Verify dimensions of roof openings for roof accessories.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Comply with manufacturer's written instructions for installing roof hatches and accessories, if any.
 1. Install roof hatches level, plumb, true to line and elevation, and without warping, jogs in alignment, buckling, or tool marks.
 2. Anchor roof hatches 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 hatches and fit them to substrates.
 4. Install roof hatches 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.
 1. Coat concealed side of uncoated aluminum components with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing roof hatches directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
- C. Installation: Install roof hatch so top surface of hatch curb is level.

SPECIFIER: Retain subparagraphs below if roof hatches are so equipped.

1. Attach safety railing system to roof hatch curb.
 2. Attach ladder-assist post according to manufacturer's written instructions.
- D. Surface Repairs:

SPECIFIER: Select Galvanneal surfaces or factory-primed surfaces in subparagraphs below.

1. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.
 2. Primed Surfaces: Touch up factory-primed surfaces with compatible primer ready for field painting if scheduled.

3.03 ADJUSTING AND CLEANING

1. Verify that roof hatches operate properly.
2. Clean, lubricate, and adjust operating mechanism and hardware.
3. Clean exposed surfaces according to manufacturer's written instructions.
4. Replace roof hatches that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION