



SECTION 08 67 13
ROOF OPENING PROTECTION SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. CageGuard Skylight Protector.
- B. SkyDome Skylight Protector.
- C. ScreenGuard Skylight Protector.
- D. SkyGuard Skylight Protector.
- E. HatchProtector Roof Hatch Safety System.

1.2 REFERENCES

- A. OSHA 29 CFR 1926.502(b).
- B. OSHA 29 CFR 1910.23(a) Occupational Health and Safety Standards for General Industry, Subpart Guarding floor and wall openings and holes.
- C. OSHA 29 CFR 1910.29 - Occupational Health and Safety Standards for General Industry, Subpart Manually propelled mobile ladder stands and scaffolds (towers).

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. 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 methods.
- C. Shop Drawings: Complete details of entire railing layout, showing member sizes and part identification, fasteners, anchors, fittings and evidence of compliance with structural performance requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 15 years experience manufacturing portable railing systems.
- B. Installer Qualifications: Minimum 2 person crew capable of positioning base plates and installing portable railing systems according to manufacturers instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide products as manufactured by Garlock Safety Systems, Plymouth, MN, www.garlocksafety.com, Email: sales@garlockequip.com
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Comply with requirements of applicable local, state, and federal codes.
- B. Structural performance of top rails and supports:
 - 1. Capable of withstanding a concentrated load of 200 pounds (90.6 kg), applied to the top rail at any point and in any direction.
 - 2. Capable of withstanding a uniform load of 50 pounds per linear foot (74.3 kg/m) applied to the top rail horizontally with a simultaneous load of 100 pounds per linear foot (148.6 kg/m) applied vertically downward.
 - 3. Design need not provide for both concentrated and uniform loads to be applied concurrently.
- C. Structural performance of railing infill:
 - 1. Capable of withstanding a horizontal concentrated load of 200 pounds (90.6 kg), applied to one foot (305mm) square area at any point on the infill.
 - 2. Infill includes panels, intermediate rails, posts and other elements.
 - 3. Design need not provide for infill loads to be applied concurrently with top rail loading.
 - 4. Horizontal members not to exceed 12 inch (305 mm) spacing over lens area of skylight.

2.3 EQUIPMENT

- A. CageGuard Skylight Protector: Free-standing, non-penetrating design clamps on two diagonal corners of opening. Can also be mechanically attached.
 - 1. Meets OSHA 1910.23(a)(4) and 1926.501(b)(4).
 - 2. Rail: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW tubing. Tubing epoxy powder coated safety yellow.
 - 3. Base: Free standing non-penetrating steel plate base with adjustable tubing extension, Base and tube are galvanized steel, epoxy powder coated safety yellow.
 - a. Slip-on Stack Plate weights. Provide each base with ___ plates per base.
 - b. Free standing non-penetrating RailGuard 90 lb base. Base is galvanized steel epoxy powder coated safety yellow.
 - 4. Size (Height/Width/Length):
 - a. ___ inch (___ mm) by ___ inch (___ mm) by ___ inch (___ mm).
- B. SkyDome: Temporary non-penetrating skylight protection system.
 - 1. Meets OSHA 1910.23(a)(4) and 1926.501(b)(4).
 - 2. Material:
 - a. Tubing: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW tubing.
 - b. Mesh Cover: Galvanized steel welded wire mesh welded to frame.
 - c. Provide with Hurricane tether.

3. Finish: **[Epoxy powder coated safety yellow] [Epoxy powder coated color as selected by Architect].**
 4. Size (Overall Height/Base Width/Base Length/Curb Height):
 - a. 20 inch (508 mm) / 41 inch (1441 mm) / 41 inch (1441 mm) / 10 inch (254 mm)
 - b. 9 inch (229 mm) / 30 inch (762 mm) / 54 inch (1372 mm) / 2 inch (51 mm)
 - c. 15 inch (381 mm) / 33 inch (838 mm) / 56 inch (1422 mm) / 7 inch (178 mm)
 - d. 23 inch (584 mm) / 36 inch (914 mm) / 36 inch (914 mm) / 11 inch (279 mm)
 - e. 12 inch (305 mm) / 41 inch (1441 mm) / 41 inch (1441 mm) / 2 inch (51 mm)
 - f. 19 inch (483 mm) / 44 inch (1118 mm) / 44 inch (1118 mm) / 8 inch (203 mm)
 - g. 25 inch (635 mm) / 48 inch (1219 mm) / 48 inch (1219 mm) / 10 inch (254 mm)
 - h. 28 inch (711 mm) / 48 inch (1219 mm) / 109 inch (2769 mm) / 16 inch (406 mm)
 - i. 33 inch (838 mm) / 52 inch (1321 mm) / 90 inch (2286 mm) / 20 inch (508 mm)
 - j. 31 inch (787 mm) / 54 inch (1372 mm) / 54 inch (1372 mm) / 16 inch (406 mm)
 - k. 23 inch (584 mm) / 55 inch (1397 mm) / 92 inch (2337 mm) / 9 inch (229 mm)
 - l. 29 inch (737 mm) / 55 inch (1397 mm) / 97 inch (2464 mm) / 16 inch (406 mm)
 - m. 25 inch (635 mm) / 56 inch (1422 mm) / 76 inch (1930 mm) / 11 inch (279 mm)
 - n. 19 inch (483 mm) / 57 inch (1748 mm) / 57 inch (1748 mm) / 5 inch (127 mm)
 - o. 23 inch (584 mm) / 58 inch (1473 mm) / 104 inch (2642 mm) / 9 inch (229 mm)
 - p. 28 inch (711 mm) / 59 inch (1499 mm) / 127 inch (3226 mm) / 13 inch (330 mm)
 - q. 29 inch (737 mm) / 60 inch (1524 mm) / 60 inch (1524 mm) / 11 inch (279 mm)
 - r. 25 inch (635 mm) / 60 inch (1524 mm) / 103 inch (2616 mm) / 10 inch (254 mm)
 - s. 30 inch (762 mm) / 64 inch (1626 mm) / 109 inch (2769 mm) / 14 inch (356 mm)
 - t. 30 inch (762 mm) / 64 inch (1626 mm) / 113 inch (2870 mm) / 14 inch (356 mm)
 - u. 28 inch (711 mm) / 69 inch (1753 mm) / 81 inch (2057 mm) / 11 inch (279 mm)
 - v. 29 inch (737 mm) / 74 inch (1880 mm) / 119 inch (3023 mm) / 10 inch (254 mm)
 - w. 35 inch (889 mm) / 84 inch (2134 mm) / 84 inch (2134 mm) / 14 inch (356 mm)
 - x. 34 inch (864 mm) / 90 inch (2286 mm) / 90 inch (2286 mm) / 12 inch (305 mm)
 - y. Custom sizes as indicated on the Drawings.
- C. ScreenGuard: Compression fit, non-penetrating galvanized screen secures to skylight frame.
1. Meets OSHA Requirements: 1910.23(a) (4) and 1926.501 (b) (4).
 2. Galvanized sheet steel base frame covered with galvanized expanded steel mesh screen.
 3. Size (Overall Dome Height / Width / Length):
 - a. 7 inch (178 mm) / 24 inch (610 mm) / 24 inch (610 mm).
 - b. 8 inch (203 mm) / 28 inch (711 mm) / 28 inch (711 mm).
 - c. 8 inch (203 mm) / 28 inch (711 mm) / 52 inch (1321 mm).
 - d. 10 inch (254 mm) / 36 inch (914 mm) / 36 inch (914 mm).
 - e. 10 inch (254 mm) / 36 inch (914 mm) / 52 inch (1321 mm).
 - f. 10 inch (254 mm) / 42 inch (1067 mm) / 76 inch (1930 mm).
 - g. 12 inch (305 mm) / 42 inch (1067 mm) / 42 inch (1067 mm).
 - h. 12 inch (305 mm) / 42 inch (1067 mm) / 80 inch (2032 mm).
 - i. 14 inch (356 mm) / 52 inch (1829 mm) / 52 inch (1829 mm).
 - j. 14 inch (356 mm) / 52 inch (1829 mm) / 76 inch (1930 mm).
 - k. 14 inch (356 mm) / 52 inch (1829 mm) / 96 inch (2438 mm).
 - l. Custom sizes as indicated on the Drawings.
 4. Load Rating:
 - a. 24 inch (610 mm) / 24 inch (610 mm) - 500 lbs.
 - b. 24 inch (610 mm) / 36 inch (914 mm) - 500 lbs.
 - c. 36 inch (914 mm) / 36 inch (914 mm) - 500 lbs.
 - d. 36 inch (914 mm) / 48 inch (1219 mm) - 500 lbs.
 - e. 48 inch (1219 mm) / 48 inch (1219 mm) - 500 lbs.

- f. 48 inch (1219 mm / 60 inches (1524 mm) - 500 lbs.
 - g. 48 inch (1219 mm / 72 inches (1829 mm) - 500 lbs.
 - h. 48 inch (1219 mm / 94 inches (2398 mm) - 500 lbs.
 - i. 48 inch (1219 mm / 96 inches (2438 mm) - 440 lbs.
- D. SkyGuard: Free-standing, modular skylight and hatch protection system.
 - 1. Meets OSHA Requirements: 1910.23(a) (4) and 1926.501(b) (4)
 - 2. Material:
 - a. Frame: Galvanized steel corner frame with wide base and rubber foot pads.
 - b. Tubing: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW galvanized tubing.
 - c. Tubing epoxy powder coated safety yellow.
 - 3. Size (Length / Width / Height): Lower rail height is 20 inches (508 mm).
 - a. 54 inch (1372 mm) / 54 inch (1372 mm) / 42 inch (1067 mm).
 - b. 102 inch (2591 mm) / 54 inch (1372 mm) / 42 inch (1067 mm).
 - c. 102 inch (2591 mm) / 102 inch (2591 mm) / 42 inch (1067 mm).
 - d. Custom sizes as indicated on the Drawings.
- E. HatchProtector: Adjustable compression fit design mounts directly to the roof hatch, non-penetrating.
 - 1. Meets OSHA Requirements: 1910.23(a) (4) and 1926.501(b) (4).
 - 2. Frame: Galvanized steel corner frame and base.
 - 3. Rails: Telescoping 1-5/8-inch (41mm) O.D. by 0.065 in. (2.7 mm) wall HREW galvanized tubing for outer tubes.
 - 4. Self-closing steel gate
 - 5. Top rail height: 42 in.
 - 6. Mid rail height: 20 in.
 - 7. Grab Bars: **[Mini stairway- 1 or 2 required] [Deluxe Stairway- 1 or 2 required] [Ladder- 2 required]**
 - 8. Size: **[30 in. by 36 in.] 36 in. by 36 in.] [30 in. by 54 in.] [30 in. by 96 in.] [36 in. by 54 in.] [36 in. by 96 in.] [42 in. by 42 in.] [48 in. by 48 in.] [48 in. by 60 in.] [Custom sizes as indicated on drawings].**
 - 9. Finish: **[galvanized] [Epoxy powder coated safety yellow] [Epoxy powder coated color as selected by Architect].**

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

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 instructions.
- B. Before installation, inspect all parts to insure no damaged parts are used.
- C. Secure CageGuard Skylight Protector to the base with securing pins.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION