

SECTION 08 67 13

ROOF OPENING PROTECTION SYSTEMS

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\*\* NOTE TO SPECIFIER \*\* Garlock Safety Systems; Roof Edge and Opening Protection products.
This section is based on the products of Garlock Safety Systems, which is located at:
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Plymouth, MN 55447
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Email:[request info (sales@garlockequip.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Garlock+Safety+Systems&coid=43032&rep=&fax=763-553-1093&message=RE:%20Spec%20Question%20(05520gar):%20%20&mf=)
Web:[garlocksafety.com](http://garlocksafety.com)

[[Click Here](http://www.arcat.com/arcatcos/cos43/arc43032.cfm)] for additional information.

Since 1959, Garlock Safety Systems has been recognized as the leading manufacturer of quality roofing equipment and fall protection equipment for the commercial flat-industrial roofing market. Located in Plymouth, Minnesota. Garlock's manufacturing facility features a highly skilled workforce utilizing many of the latest technology based machining centers used in the manufacture of our products. Garlock has also been recognized as the leading innovator of industrial tools, specializing in fall protection equipment, that roofing contractors use every day to build their business and protect their client's building assets.

In 1980, Garlock Safety Systems developed the Railguard 200 portable railing system. Originally developed to protect roofers working on commercial projects, the Railguard 200 product line quickly developed into a multi-faceted, cross-functional product that is used throughout industrial plants and commercial facilities around the world. The Railguard 200 system is a completely freestanding guardrail system that meets or exceeds all OSHA requirements for fall protection railings. There are no holes to drill, no tools or fasteners required. The system sets up virtually in minutes with the strength and security that comply with OSHA requirements. Multiple railing lengths are available along with swinging gates, transport carts, custom paint colors and finishes.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project. Add others as required.

* + 1. CageGuard Skylight Protector.
		2. SkyDome Skylight Protector.
		3. ScreenGuard Skylight Protector.
		4. SkyGuard Skylight Protector.
		5. HatchProtector Roof Hatch Safety System.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. OSHA 29 CFR 1926.502(b).
		2. OSHA 29 CFR 1910.23(a) Occupational Health and Safety Standards for General Industry, Subpart Guarding floor and wall openings and holes.
		3. OSHA 29 CFR 1910.29 - Occupational Health and Safety Standards for General Industry, Subpart Manually propelled mobile ladder stands and scaffolds (towers).
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00.
		2. [Product Data](http://www.arcat.com/arcatcos/cos43/arc43032.cfm): 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.
		3. 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.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum of 15 years experience manufacturing portable railing systems.
		2. Installer Qualifications: Minimum 2 person crew capable of positioning base plates and installing portable railing systems according to manufacturers instructions.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
1. PRODUCTS
	1. MANUFACTURERS
		1. Provide products as manufactured by Garlock Safety Systems, Plymouth, MN, [www.garlocksafety.com](http://www.garlocksafety.com), Email: sales@garlockequip.com

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.
	1. PERFORMANCE REQUIREMENTS
		1. Structural Performance: Comply with requirements of applicable local, state, and federal codes.
		2. 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.
		3. Structural performance of railing infill:
			1. Capable of withstanding a horizontal concentrated load of 200 pounds (90.6 kg), applied to one foot (30.5mm) 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. EQUIPMENT
		1. 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.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two base types and delete the one not required. System is wind rated to 114 mph and 200 mph rated models are also available. Contact the manufacturer for additional information.

\*\* NOTE TO SPECIFIER \*\* Include the following optional paragraph if required and delete if not required. Each plated added will add 18 mph of wind rating.

* + - * 1. Slip-on Stack Plate weights. Provide each base with \_\_ plates per base.
				2. Free standing non-penetrating RailGuard 90 lb base. Base is galvanized steel epoxy powder coated safety yellow.

\*\* NOTE TO SPECIFIER \*\* Insert the size(s) required from the following paragraphs. If project requires more than one size indicate size locations on the Drawings.

* + - 1. Size (Height/Width/Length):
				1. \_\_ inch (\_\_\_ mm) by \_\_ inch (\_\_\_ mm) by \_\_ inch (\_\_\_ mm).
		1. SkyDome: Temporary non-penetrating skylight protection system.
			1. Meets OSHA 1910.23(a)(4) and 1926.501(b)(4).
			2. Material:
				1. Tubing: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW tubing.
				2. Mesh Cover: Galvanized steel welded wire mesh welded to frame.

\*\* NOTE TO SPECIFIER \*\* Select the following optional paragraphs if required and delete if not required.

* + - * 1. Provide with Hurricane tether.
			1. Finish: **[Epoxy powder coated safety yellow] [Epoxy powder coated color as selected by Architect]**.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete the one not required.

\*\* NOTE TO SPECIFIER \*\* Select the size required from the following paragraphs. If project requires more than one size indicate size locations on the Drawings. Delete the sizes not required. Standard sizes are listed below, custom sizes are available.

* + - 1. Size (Overall Height/Base Width/Base Length/Curb Height):
				1. 20 inch (508 mm) / 41 inch (1441 mm) / 41 inch (1441 mm) / 10 inch (254 mm)
				2. 9 inch (229 mm) / 30 inch (762 mm) / 54 inch (1372 mm) / 2 inch (51 mm)
				3. 15 inch (381 mm) / 33 inch (838 mm) / 56 inch (1422 mm) / 7 inch (178 mm)
				4. 23 inch (584 mm) / 36 inch (914 mm) / 36 inch (914 mm) / 11 inch (279 mm)
				5. 12 inch (305 mm) / 41 inch (1441 mm) / 41 inch (1441 mm) / 2 inch (51 mm)
				6. 19 inch (483 mm) / 44 inch (1118 mm) / 44 inch (1118 mm) / 8 inch (203 mm)
				7. 25 inch (635 mm) / 48 inch (1219 mm) / 48 inch (1219 mm) / 10 inch (254 mm)
				8. 28 inch (711 mm) / 48 inch (1219 mm) / 109 inch (2769 mm) / 16 inch (406 mm)
				9. 33 inch (838 mm)/ 52 inch (1321 mm) / 90 inch (2286 mm) / 20 inch (508)
				10. 31 inch (787 mm) / 54 inch (1372 mm)/ 54 inch (1372 mm) / 16 inch (406 mm)
				11. 23 inch (584 mm) / 55 inch (1397 mm) / 92 inch (2337 mm) / 9 inch (229 mm)
				12. 29 inch (737 mm) / 55 inch (1397 mm) / 97 inch (2464 mm) / 16 inch (406 mm)
				13. 25 inch (635 mm) / 56 inch (1422 mm) / 76 inch (1930 mm) / 11 inch (279 mm)
				14. 19 inch (483 mm) / 57 inch (1748 mm) / 57 inch (1748 mm) / 5 inch (127 mm)
				15. 23 inch (584 mm) / 58 inch (1473 mm) / 104 inch (2642 mm) / 9 inch (229 mm)
				16. 28 inch (711 mm)/ 59 inch (1499 mm) / 127 inch (3226 mm) / 13 inch (330 mm)
				17. 29 inch (737 mm) / 60 inch (1524 mm) / 60 inch (1524 mm) / 11 inch (279 mm)
				18. 25 inch (635 mm) / 60 inch (1524 mm) / 103 inch (2616 mm) / 10 inch (254 mm)
				19. 30 inch (762 mm) / 64 inch (1626 mm) / 109 inch (2769 mm) / 14 inch (356 mm)
				20. 30 inch (762 mm) / 64 inch (1626 mm / 113 inch (2870 mm) / 14 inch (356 mm)
				21. 28 inch (711 mm)/ 69 inch (1753 mm) / 81 inch (2057 mm) / 11 inch (279 mm)
				22. 29 inch (737 mm) / 74 inch (1880 mm) / 119 inch (3023 mm) / 10 inch (254 mm)
				23. 35 inch (889 mm) / 84 inch (2134 mm) / 84 inch (2134 mm) / 14 inch (356 mm)
				24. 34 inch (864 mm) / 90 inch (2286 mm) / 90 inch (2286 mm) / 12 inch (305 mm)
				25. Custom sizes as indicated on the Drawings.
		1. 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.

\*\* NOTE TO SPECIFIER \*\* Select the size required from the following paragraphs. If project requires more than one size indicate size locations on the Drawings. Delete the sizes not required. Custom sizes are available.

* + - 1. Size (Overall Dome Height / Width / Length):
				1. 7 inch (178 mm) / 24 inch (610 mm) / 24 inch (610 mm).
				2. 8 inch (203 mm) / 28 inch (711 mm / 28 inch (711 mm).
				3. 8 inch (203 mm) / 28 inch (711 mm / 52 inch (1321 mm).
				4. 10 inch (254 mm) / 36 inch (914 mm) / 36 inch (914 mm).
				5. 10 inch (254 mm) / 36 inch (914 mm) / 52 inch (1321 mm).
				6. 10 inch (254 mm) / 42 inch (1067 mm) / 76 inch (1930 mm).
				7. 12 inch (305 mm) / 42 inch (1067 mm) / 42 inch (1067 mm).
				8. 12 inch (305 mm) / 42 inch (1067 mm) / 80 inch (2032 mm).
				9. 14 inch (356 mm) / 52 inch (1829 mm) / 52 inch (1829 mm).
				10. 14 inch (356 mm) / 52 inch (1829 mm) / 76 inch (1930 mm).
				11. 14 inch (356 mm) / 52 inch (1829 mm) / 96 inch (2438 mm).
				12. Custom sizes as indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Select one of the following load rating paragraphs as required for the project. Delete paragraphs not applicable.

* + - 1. Load Rating:
				1. 24 inch (610 mm) / 24 inch (610 mm) - 500 lbs.
				2. 24 inch (610 mm) / 36 inch (914 mm) - 500 lbs.
				3. 36 inch (914 mm) / 36 inch (914 mm) - 500 lbs.
				4. 36 inch (914 mm) / 48 inch (1219 mm) - 500 lbs.
				5. 48 inch (1219 mm) / 48 inch (1219 mm) - 500 lbs.
				6. 48 inch (1219 mm / 60 inches (1524 mm) - 500 lbs.
				7. 48 inch (1219 mm / 72 inches (1829 mm) - 500 lbs.
				8. 48 inch (1219 mm / 94 inches (2398 mm) - 500 lbs.
				9. 48 inch (1219 mm / 96 inches (2438 mm) - 440 lbs.
		1. SkyGuard: Free-standing, modular skylight and hatch protection system.
			1. Meets OSHA Requirements: 1910.23(a) (4) and 1926.501(b) (4)
			2. Material:
				1. Frame: Galvanized steel corner frame with wide base and rubber foot pads.
				2. Tubing: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW galvanized tubing.
				3. Tubing epoxy powder coated safety yellow.

\*\* NOTE TO SPECIFIER \*\* Select the size required from the following paragraphs. If project requires more than one size indicate size locations on the Drawings. Delete the sizes not required. Standard sizes are listed below, custom sizes are available.

* + - 1. Size (Length / Width / Height): Lower rail height is 20 inches (508 mm).
				1. 54 inch (1372 mm) / 54 inch (1372 mm) / 42 inch (1067 mm).
				2. 102 inch (2591 mm) / 54 inch (1372 mm) / 42 inch (1067 mm).
				3. 102 inch (2591 mm) / 102 inch (2591 mm) / 42 inch (1067 mm).
				4. Custom sizes as indicated on the Drawings.
		1. 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].**
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
		2. Before installation, inspect all parts to insure no damaged parts are used.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraph if CageGuard is specified and delete if not required.

* + 1. Secure CageGuard Skylight Protector to the base with securing pins.
	1. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION