SECTION 05520

BALLASTED ROOFTOP GUARDRAIL SYSTEM

Distributed By: Unistrut Service Company

Diversified Fall Protection specializes in the design, engineering, fabrication, installation, and certification of fall protection safety systems. Our team of safety professionals can provide assistance with your facility starting with a hazard analysis site assessment to determine the most effective solution for your specific application.

Diversified Fall Protection also provides complimentary design assistance to architects or general contractors that require permanent fall protection systems. Our team understands the importance of scheduling demands for new construction applications and has been providing unparalleled customer service since 1994.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Ballasted, free-standing guardrail system for:
1. Rooftop Safety
2. Construction Safety
3. Skylight Safety
4. Ladder Access

1.2 REFERENCES

A. Occupational Safety and Health Administration (OSHA)
1. OSHA CFR 1926.500-503 – Fall Protection
2. OSHA 29 CFR 1910.23 – Walking-Working Surfaces

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

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. Product literature, material specifications.
4. Installation details and methods.
5. Dimensions of product components.

C. Shop Drawings: Complete details of entire guardrail layout, including:
1. Member sizes and part identification.
2. Fasteners.
3. Fittings and Connections.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications:
1. Provide products from a manufacturer that specializes in the design, fabrication, and

installation of portable guardrail systems with a minimum of ten years of documented experience. Companies such as miscellaneous steel fabricators that do not normally design and fabricate ballasted guardrail components are not acceptable.

2. Manufacturer shall carry specific liability insurance (products and completed operations) in an amount not less than $5,000,000 to protect against product failure.
3. Manufacturer shall provide samples of product for inspection at the request of the owner. Manufacturer shall be compensated for additional product.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.

B. Inspect products prior to installation and replace damage products.

C. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

1.6 SEQUENCING AND COORDINATION

A. Coordinate installation of products that connect to the work of other trades. Deliver such items to the project site in time for installation.

B. General Contractor shall be immediately made aware of any site conditions that may interfere with proper installation and intended use of the portable guardrail system.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install systems under environmental conditions outside manufacturer's recommended limits.

1.8 WARRANY

A. Provide manufacturer’s two (2) year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Lorguard Ballasted Guardrail System by Diversified Fall Protection, LLC which is located at: 24400 Sperry Drive, Cleveland, Ohio 44145; Tel: 440-3348-9460; Fax: 440-348-9455; Email: info@fallprotect.com; Web :www.fallprotect.com

B. Substitutions: Not permitted.

2.2 DESIGN REQUIREMENTS

A. Structural Performance: Comply with requirements of applicable local, state, and federal OSHA regulatory requirements.

B. Structural performance of top rail and mid rail:
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 concentrated load of 150 pounds (67.95 kg), applied in any downward or outward direction at any point along the mid rail.

3. System shall be wind rated at 150 mph.

2.3 MATERIALS

A. Guardrail Sections.
1. Rails: 1-5/8 inch (41 mm) O.D. tubing, free of sharp edges and snag points.
2. Height: 42 inches (1067 mm) above finished roof.
3. Mid-rail: Weld to posts at 21 inches (533 mm) below top rail.
4. Finish: Hot dipped galvanized.
5. Finish: Epoxy powder coated safety yellow (or specify other custom color).
6. Finish: Stainless steel.

B. Base Plates.
1. Material: Mild Steel
2. Size: 10 inches x 30 inches x 0.625 inches with hand hole and radius corners.
3. Weight: Shall not exceed 60 pounds per base plate.
4. Base Plate Receivers: Two, built in to accept guardrail sections secured by stainless steel set screws. Receivers shall have drain holes
5. Finish: Hot dipped galvanized.
6. Finish: Epoxy powder coated safety yellow (or specify other custom color).
7. Integrated skid resistant rubber roof protection base plate pads.

C. Toe Boards.

** NOTE TO SPECIFIER ** Specify Toe Boards where there is a danger of falling materials onto employees working below and there is not an existing barrier such as a parapet wall or minimum 4 inch curb stop.
1. Capable of withstanding without failure, a force of at least 50 pounds applied in any downward or outward direction at any point along the toeboard.
2. Material: 3.5 inch minimum height with note more than ¼ inch clearance above the walking/working surface.
3. Attachment: Toe boards shall be integrated into baseplate receivers for a no-drill installation.

D. Gate System.
1. Rails: 1-5/8 inch (41 mm) O.D. tubing.
2. Length: 4 feet (1219 mm).
3. Length: As required per project drawings.
4. Length: 10 feet (3048 mm).
5. Height: 42 inches (1067 mm).
6. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
7. Finish: Hot dipped galvanized.
8. Finish: Epoxy powder coated safety yellow (or specify other custom color).
9. Support wheel: positive locking mechanism with ability to swing right or left.

E. Ladder Guards.
1. Rails: 1-5/8 inch (41 mm) O.D. tubing.
2. Rail Length: As Required to span from ladder side rails to adjacent guardrail to form a closed guardrail system adjacent fixed ladder egress.
3. Rail Height: 42 inches (1067 mm).
4. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
5. Ladder Connectors: With fittings as required for connection to fixed ladder side rails.
6. Finish: Hot dipped galvanized.
7. Finish: Epoxy powder coated safety yellow (or specify other custom color).

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Inspect and prepare substrates for compliance with ballasted guardrail base plate requirements using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.

B. Do not proceed with installation until substrates comply with methods recommended by the manufacturer and deviations from manufacturer's recommendations are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions and approved shop drawings.

B. Before installation, inspect all parts to ensure no damaged parts are used.

C. Guardrail sections must be secured to base with manufacturer furnished set screws.

D. Use a Lorguard outrigger at any interruption in continuous guardrail sections. Outrigger assembly consists of a 6 foot guardrail with base plate placed 90 degrees away from danger side of continuous guardrail.

E. System only to be installed on flat surfaces not to exceed ½ : 12 pitch.

F. Remove all loose gravel and/or materials in the vicinity of guardrail base plates; bases plates must be placed on sound substrate.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION