



SECTION 05520

PORTABLE RAILING SYSTEM

Peak 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. Peak Fall Protection's in-house installation and fabrication teams provide a certified installation and system training for your employees. The entire process is managed by our engineering team and documentation is provided as required by applicable OSHA/ANSI standards.

Peak Fall Protection also provides complimentary design assistance to architects or general contractors that require permanent safety systems and rooftop fall protection. Our team understands the importance of scheduling demands for new construction applications and has been providing unparalleled customer service since 2004. Allow us to serve you as a turnkey fall protection provider on your next project.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Portable, free-standing guardrail system for:
 - 1. Roof Railings
 - 2. Industrial Safety
 - 3. Loading Dock Safety
 - 4. Construction Safety
 - 5. Public Safety
 - 6. Skylight Safety
 - 7. Roof Hatches
 - 8. Crowd Control
 - 9. 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 railing layout, including:
 - 1. Member sizes and part identification.
 - 2. Fasteners.

3. Anchors.
4. Fittings.
5. Evidence of compliance with structural performance requirements.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Provide products for a manufacturer that specializes in the design, fabrication, and installation of portable railing systems with a minimum of fifteen years of documented experience. Companies such as miscellaneous steel fabricators that do not normal design and fabricate portable railing 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 or outside agency testing at the request of the owner. Manufacturer shall be compensated for additional product.

B. Installer Qualifications:

1. Installation contractor shall be trained or qualified by manufacturer.
2. The fall protection install contractor shall maintain appropriate insurances as applicable for the installation of fall protection systems. Installer shall have specific liability insurance (products and completed operations) in an amount not less than \$5,000,000. Proof of these insurance listings shall be supplied with the submittals listed in herein.
3. Minimum 1-2 person crew capable of positioning base plates and installing portable railing systems according to manufacturer's instructions.

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 railing 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Peak Fall Protection, Inc. which is located at: 1230 Perry Rd.; Apex, NC 27502; Toll Free Tel: 866-387-9965; Fax: 919-387-9914; Email: info@peak-fp.com; Web: www.peak-fp.com

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 DESIGN REQUIREMENTS

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

2.3 MATERIALS

- A. Railing Sections.
 - 1. Rails: 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW tubing.
 - 2. ASTM A513
 - 3. Height: 42 inches (1067 mm).
 - 4. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
 - 5. Finish: Hot dipped galvanized.
 - 6. Finish: Epoxy powder coated safety yellow (or specify other color).
 - 7. Finish: Stainless steel.
- B. Base Plates.
 - 1. Material: cast iron class 20B.
 - 2. Size: 1 foot 9-1/2 inches by 1 foot 9-1/2 inches (546 by 546 mm).
 - 3. Carrying handles: built in with a center carrying hook for base transporter.
 - 4. Toeboard receptacles: two, built in.
 - 5. Capacity: two railing sections and be able to accommodate adapter to support three or four intersecting rails on the same base.
 - 6. Holes: Holes for permanent mounting and round holes for pins securing base to rail.
 - 7. Bottom of base must have a concave recess no less than 125 sq. inches (806 sq.cm) to reduce rocking on uneven surfaces.
 - 8. Base plate must provide no less than 5 inches (127 mm) of leading edge substrate contact as concentrated load is applied to base.
 - 9. Finish: Hot dipped galvanized.
 - 10. Finish: Epoxy powder coated safety yellow (or specify other color).
 - 11. Four adhesive pads with directional non-skid resistant ridge pattern and minimum 28 sq. inches (180 sq.cm) of substrate contact each: shall be adhered to the bottom of base plate to resist slippage on hard surfaces.
- C. Speed Boards.

1. Material: 4 inches (102 mm) wide, zinc plated steel.
 2. Attachment: Boards shall telescope to fit into toe board brackets on base plate and pinned to the base toe board brackets.
- D. Gate System.
1. Rails: 1-5/8 inch (41 mm) O.D. by 0.120 inch (2.7 mm) wall HREW tubing.
 2. Length: 4 feet (1219 mm).
 3. Length: 5 feet (1524 mm).
 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 color).
 9. Support wheel: positive locking mechanism with ability to swing right or left.
- E. LadderGuards.
1. Rails: 1-5/8 inch (41 mm) O.D. by 0.120 inch (2.7 mm) wall HREW tubing.
 2. Rail Length: 5 feet (1524 mm).
 3. Rail Height: 42 inches (1067 mm).
 4. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
 5. Base Plates: 3 inch (76 mm) wide, hot rolled steel (HRP).
 - a. Two-Post Base: 54 inch (1372 mm) long, DOMT posts.
 - b. Six-Post Base: 51 inch (1295 mm) long, DOMT posts.
 6. Holes: Holes for permanent mounting and round holes for pins securing base to rail.
 7. Upright Posts: 1-5/8 inch (41 mm) O.D. by 0.120 inch (2.7 mm) wall HREW tubing.
 8. Ladder Connectors: 18.5 inch (470 mm) long steel custom shape with hardware.
 9. Finish: Hot dipped galvanized.
 10. Finish: Epoxy powder coated safety yellow (or specify other color).
- F. Securing Pins.
1. Material: 1038H cold rolled steel.
 2. Lock: Klick-pin attached to chain to lock into pin shaft.
 3. Finish: Electroplate and zinc dichromate dipped.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Inspect and prepare substrates for compliance with portable railing 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 have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances and conditions that will be detrimental to the portable railing system 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 insure no damaged parts are used.
- C. Railing must be secured to base with securing pins.

- D. Use a Railguard 200 outrigger at any interruption in continuous railing sections. Outrigger assembly consists of a 5 foot railing (1.52 m) with base plate pinned to railing and placed 90 degrees away from danger side of continuous railing.
- 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 railing system; bases 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