SECTION 11 13 33
LOADING DOCK FALL PROTECTION

PART 1 GENERAL

1.1 SUMMARY: Section includes permanent, free-standing loading dock guardrail systems and swing gates.

A. Safety Guardrail system.

B. Manual-closing swing gates.

C. VersaGate self-closing gate system.

D. SentryGuard single opening and split opening gate systems.

1.2 RELATED SECTIONS

A. Section 05 52 17 - Safety Railings

B. Section 13 44 13 - Mezzanine and Rack System Safety Gates.

1.3 REFERENCES

A. 29 CFR 1926 - Safety and Health Regulations for Construction, Subpart M-Fall Protection.

B. 29 CFR 1910.29 - Occupational Health and Safety Standards for General Industry, Subpart Manually propelled mobile ladder stands and scaffolds (towers).

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

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. Certification: Provide manufacturer's certifications that the ultimate strength of the fall protection system is equal to or greater than those specified.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: minimum of 15 years experience manufacturing portable railing systems.

B. Installer Qualifications: 1-2 person crew capable of positioning mounting plates and installing portable railing systems according to manufacturers instructions.

1.6 DELIVERY, STORAGE, AND HANDLING

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Substitutions: Not permitted.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 DESIGN REQUIREMENTS

A. Structural Performance: Comply with requirements of applicable local, state, and federal codes including:
   1. OSHA: 29 CFR 1926 - Safety and Health Regulations for Construction, Subpart M-Fall Protection.
   2. OSHA: 29 CFR 1910.23 - Occupational Health and Safety Standards for General Industry.

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 (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.

2.3 EQUIPMENT

A. Safety Guardrail: Permanent, free-standing loading dock guardrail system.
   1. Meets OSHA 1910.23(c).
   2. Railing
      a. Rails: 16 gauge, 1-5/8 inch (41 mm) O.D. by 0.065 inch (2.7 mm) wall HREW tubing.
      b. Length: **[5 feet (1524 mm)] [7 feet 6 inches (2286 mm)] [10 feet (3048 mm)] [Custom length].**
      c. Height: 42 inches (1067 mm).
      d. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
      e. Finish: **[Epoxy powder coated safety yellow] [Hot dipped galvanized] [Architect specified custom powder coat color].**
   3. Mounting Bases
      a. Box Mounts: Steel wrap over type with adjustability in rail base positioning. Provided with holes for permanent mounting and round holes for pins securing base to rail.
      b. Flush Mounts: Steel flush mounting type. Provided with holes for permanent mounting and round holes for pins securing base to rail.
      c. Wrap Over Mount: Steel wrap over type. Provided with holes for permanent mounting and round holes for pins securing base to rail.
      d. Capacity: two railing sections and be able to accommodate adapter to support

intersecting rails on the same plate.
e. Anchor Bolts: 1/2 inch (12.5 mm) by 4-1/2 inch (114 mm) expansion bolts.
f. Finish: **[Epoxy powder coated safety yellow] [Hot dipped galvanized] [Architect specified custom powder coat color].**

4. Securing Pins.
   a. Material: 1038H cold rolled steel.
   b. Lock: Klick-pin attached to chain to lock into pin shaft.
   c. Finish: Electroplate and zinc dichromate dipped.

B. Manual-Closing Swing Gate System: Gates with lengths of 4 feet to 12 feet wide used in conjunction with RailGuard 200 systems. Tool-free installation.
1. Meets OSHA 1910.23(a)(2).
2. Rails: 1-5/8 inch (41 mm) O.D. by 0.120 inch (2.7 mm) wall HREW tubing.
3. Length: **[4 feet (1219 mm)] [5 feet (1524 mm)] [10 feet (3048 mm)]** [**12 feet (3657 mm)] [Custom length (specify)]**.
4. Height: 42 inches (1067 mm).
5. Mid-rail: weld to posts at 21 inches (533 mm) below top rail.
6. Finish: **[Epoxy powder coated safety yellow] [Hot dipped galvanized]**.
7. Integrated support wheel: positive locking mechanism with ability to swing right or left.

C. VersaGate Self-Closing Gate System: Adjustable two-piece gate with spring loaded hinge.
1. Meets OSHA 1910.23(a)(2).
2. Universal right/left clamp mounting to square or round post.
3. Adjustable Widths: **[24 - 30 inches] [30 - 36 inches)] [36 - 42 inches] [42 - 48 inches] [custom size].**
4. Height: 42 inches (1067 mm).
5. Finish: **[Epoxy powder coated safety yellow] [Hot dipped galvanized] [Architect specified custom powder coat color]**

D. SentryGuard: Open loading dock and mezzanine fall protection, manual or pneumatic operation, single gate or split gates.
1. Meets OSHA 1910.23(c).
2. Rails: 1-3/4 inch (44.5 mm) O.D. by 0.083 inch (2 mm) wall EWSQT tubing.
3. Length: **[Standard 12 feet] [Custom length (specify)]**.
4. Standard Single Opening Style: Overall Length: 125.5 inch (3188 mm) fits 8 foot overhead door - opens right or left. Open height 161 inches (4089 mm).
5. Standard Split Opening Style: Overall Length: 154 inch (3912 mm) fits 12 foot (3.66 m) dock - opens half the length to the right and half the length to the left. Open height 109 inches (2769 mm).
6. Custom Single Opening Style: Overall Length: minimum 65.5 inches (1664 mm) up to maximum 110 inches (2794 mm). Overall length equals rough opening plus 29.5 inches (749 mm). Open height equals rough opening plus 65 inches (1651 mm).
7. Custom Split Opening Style: Overall Length: minimum 106 inches (2692 mm) up to maximum 240 inches (6096 mm) overall length equals rough opening plus 10 inches (254 mm). Open height equals one-half rough opening plus 37 inches (940 mm).
8. Height: 42 inches (1067 mm).
9. Mid-rail: 21 inches (533 mm) below top rail.
10. Operation: **[Manual] [Pneumatic]**.
11. Single Opening Pneumatic Operation: Dual gas assist struts with positive locking mechanism to hold gate fully open or closed. Can be installed to open to right or left. Can be padlocked.
12. Split Opening Cantilevered Pneumatic Operation: Dual gas assist struts with positive locking mechanism to hold gate fully open or latched closed in the center. Can be padlocked.
13. Finish: **[Epoxy powder coated safety yellow] [Hot dipped galvanized] [Architect specified custom powder coat color]**.

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. Railing must be secured to base with securing pins.

D. Install base mounts spaced to receive rail sections.

E. Anchor base mounts to concrete substrate with expansion bolts or to steel edge angles with appropriate threaded anchors.

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