



SECTION 05522

METAL GUARDRAIL AND ROOFTOP FALL PROTECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roof Edge Fall Protection.

1.2 RELATED SECTIONS

- A. Section 05500 – Metal Fabrications: Associated metal supports.
- B. Section 05510 – Metal Stairs and Ladders.

- C. Section 07400 - Membrane Roofing: Coordination of roof edge protection installation.
- D. Section 07411 – Membrane Roof Panels: Coordination of roof edge protection installations.

1.3 REFERENCES

- A. American Welding Society: AWS D1.1 - Structural Welding Code - Steel.
- B. American Welding Society: AWS D1.3 - Structural Welding Code – Sheet Steel.
- C. Occupational Safety & Health Administration (OSHA): 29 CFR 1910.23 - Guarding Floor and Wall Openings and Holes.
- D. Occupational Safety & Health Administration (OSHA): 29 CFR 1910.27 - Fixed Ladders.
- E. Occupational Safety & Health Administration (OSHA): 29 CFR 1926.500 - Scope, Application, and Definitions Applicable to this Subpart.
- F. Occupational Safety & Health Administration (OSHA): 29 CFR 1926.501 - Duty to Have Fall Protection.
- G. Occupational Safety & Health Administration (OSHA): 29 CFR 1926.502 - Fall Protection Systems Criteria and Practices.
- H. Occupational Safety & Health Administration (OSHA): 29 CFR 1926.503 - Training Requirements.
- I. California Occupational Safety & Health Administration (CAL OSHA)

1.4 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. Installation methods.
- C. Shop Drawings: Drawings showing plans, elevations, sections and details of components. Show member sizes and part identification, fasteners, anchors, fittings and evidence of compliance with structural performance requirements.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns
- E. Manufacturer's Certificates:
 - 1. Certify that products are made in USA. Provide steel mill and foundry certificates for verification prior to shipment.
 - 2. Manufacturer must be American Welding Society Welding Certified for Welding Standards AWS D1.1 & AWS D1.3. Third party qualification documentation required prior to shipment.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site in good condition and adequately protected against damage as handrails are a finished product.
- B. Inspect rail sections for damage before signing the receipt from the trucking company. Truck driver must note damaged goods on the bill of lading if damaged product is found
- C. Store products in manufacturer's unopened packaging until ready for installation.
- D. Products to be palletized and labeled by roof level or designated drop zone.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication.

1.7 WARRANTY

- A. Warranty: Provide manufacturer's limited two year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: *Edge Fall Protection, LLC*, which is located in Minneapolis, MN 55419. Contact: E-mail: info@edgefallprotection.com Website: www.edgefallprotection.com Toll Free/Fax: 844-314-1374.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 ROOF EDGE FALL PROTECTION

- A. Roof Edge Protection: Provide freestanding pedestrian egress barrier system on roof, including railings, bases, and hardware by *EDGE Fall Protection, LLC*. Contact: info@edgefallprotection.com; TF/Fax: 844-314-1374.
 - 1. ACCU-FIT Traditional Mobile Safety Rail System, : EDGE ACCU-FIT Designer Mobile Safety Rail System
 - a. System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.23 (a)(2).
 - b. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1926.502.
 - 2. Height: 42 inches (1067 mm), nominal.

3. Pipe Railings: 1-1/4 inch I.D. or optional 1-1/2 inch I.D. schedule 40 pipe by 21 foot length, to be assembled free of sharp edges and snag points. Field trim pipes to fit application on corners or terminations.
 - a. Connections; Join pipe railing lengths together with approved splice fittings. Tighten all set screw connections to 29 ft. lbs.
 - b. Modular Pipe Fittings to be cast iron fittings manufactured to the requirements of ASTM A 47-77-32510
 - c. Stanchions:
 - 1) Curved Architectural Stanchions 1-1/4 inch I.D. schedule 40 pipe by 42 inches tall in base.
 - (a) Optional 1-1/2 inch I.D. Schedule 40
 - 2) Traditional straight stanchions 1-1/4 inch I.D. 1.66 O.D. Schedule 40 pipe by 42 inches tall in base.
 - (a) Optional 1-1/2 inch I.D. Schedule 40
 - 3) Designer series stanchions.
 - d. Mounting Bases: Freestanding 104 lb (Galvanized) Class 30 gray iron material cast with four receiver posts.
 - 1) Provide rubber pads on bottom of bases.
 - 2) Metal deck mounting plates mechanically fastened to roof for Standing Seam metal roofs.
 - 3) Metal deck mounting plates mechanically fastened to roof for R-Panel panel roofs.
 - 4) Metal deck mounting plates mechanically fastened to roof for Corrugated Panel metal roofs.
 - e. Receiver Posts: Stanchion shall be pinned into base plate with 3 inch Z-pin
4. Securing Pins: 1010 carbon steel, zinc plated and yellow chromate dipped. Pins shall consist of collared pin and latch that connects to lynch pin.
5. Rail Accessories:
 - a. Toe Board Brackets: Provide toe board brackets as required
 - b. Finishing Rail: D-shaped railing extension for ladder landings, length of rail section and D-loop as indicated on the Drawings.
 - c. Ladder Spanner Brackets: Provide brackets at ladder transition points as required.
6. Roof Accessories:
 - a. Roof Pads: Provide EPDM Roof Pad under each base to protect roof membrane.
 - b. Base Mover: Provide Base Mover, Part #400062 two-wheeled steel cart to transport one base unit.

B. Finish: Steel surfaces

1. Hot Dip Zinc Galvanized Railing
2. Factory finished powder coat paint.
3. Hot Dip Zinc Galvanized & Factory finished powder coat paint.
4. Color:
 - a. None
 - b. Safety Yellow.
 - c. Color Specified 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.

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