

SECTION 11 2429.13

HORIZONTAL FALL PROTECTION – RAIL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide direct to roof, rooftop horizontal rail fall protection system for rooftop access including attachment carriage, attachment plates, joints, corners, end stops, and specialty components for exposed and concealed conditions.
- B. System designed for [] simultaneous users maximum.

1.2 RELATED REQUIREMENTS

- A. Division 07: Roofing, flashing, and sealant requirements.

1.3 REFERENCE STANDARDS

- A. OSHA 1926.502 Fall Prevention Systems and Criteria and Practices
- B. ANSI A 10.32 - Requirements for Safety Belts, Harnesses, Lanyards, Lifelines- Construction and Demolition
- C. ANSI Z 359 - Fall Protection Code

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the design and installation of horizontal rail fall protection system with structural supports and finish materials.

1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data and product information indicating the sizes, descriptions, capacities, test certifications, and other descriptive data showing in sufficient detail that the product complies with the contract requirements.
- C. Shop Drawings: For fabrication showing the complete fall protection system. Layout drawings of each system in relation to the supporting structure indicating the locations of properly labeled components.
- D. Furnish proof of installer's certification approval by manufacturer in the form of the installer's current certificate issued by the manufacture.
- E. Product Certificate: Containing the manufacturer's serial number, name and part number of each individual component used in the systems.
- F. Designer's Qualifications Statement.
- G. As-Built Drawings: A copy of as-built drawings shall also be included in the systems manual.
- H. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.6 QUALITY ASSURANCE

- A. Design and Engineering of System to be performed by Diversified Fall Protection, 24400 Sperry Rd. Westlake, OH 44145, (440)-348-9460 www.fallprotect.com
- B. Submit design and calculations to a under a Professional Engineer experienced in design of this type of work and licensed in the State of_____.
- C. Installation of fall protection system to be performed Diversified Fall Protection, 24400 Sperry Rd. Westlake, OH 44145, (440)-348-9460 www.fallprotect.com
- D. No Substitutions
- E. Install fall protection system by manufacturer's authorized, trained, and certified personnel.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original unopened packaging.
- B. Store materials in original protective packaging.
- C. Prevent soiling, physical damage, or moisture.

- 1.8 PROJECT CONDITIONS
- A. Coordinate layout and installation of framing and reinforcements for fall protection system anchors.
- 1.9 WARRANTY
- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
 - B. Correct defective Work within a one year period after Date of Substantial Completion.
 - C. Provide lifetime manufacturer warranty.

PART 2 - PRODUCTS

- 2.1 MANUFACTURERS
- A. Capital Safety
3833 SALA Way, Red Wing, MN 55066 800-328-6146
 - B. Basis of Design: DBI-SALA® UniRail™ System.
 - C. No Substitutions:
- 2.2 SYSTEM DESCRIPTION
- A. Allow users to walk uninterrupted the entire length of the system and provide secure anchorage to arrest a fall.
 - B. Prepare system layout, design analysis, and calculations certified by a Licensed Professional Engineer.
 - C. Allow for multiple users, based on required system calculations.
 - D. Fall protection system can be used by multiple workers, based on required system calculations.
 - E. Do not use system as a tieback anchor for façade maintenance.
 - F. Maximum allowable force on anchors: 12 kN (2,698lbf).
- 2.3 COMPONENTS
- A. Rail: discrete profile 32mm x 32mm (1 ¼" x 1 ¼").
 - B. Rail joint: joins ends of two rails.
 - C. Corners: Additional bends and forms available to a radius of 200mm (7.88").
 - 1. 90°
 - 2. 90° external
 - 3. 90° internal
 - 4. 45°
 - 5. 45° external
 - 6. 45° internal
 - D. System stop: prevents the rail from coming out of end anchorage bracket.
 - E. Molded end: protects exposed edge of end rail.
 - F. Tamper-proof carriage stop: prevents the carriage from coming off the end of the system.
 - G. Removable carriage stop: prevents the carriage from coming off the end of the system but can be removed to allow the carriages to be taken off.
 - H. Attachment carriage: stainless steel parking lock for work positioning tasks and aluminum, nylon coated wheels. A stainless steel shackle with carabiner hook and pivots for any angle of take off. Min strength 15kN (3,372lbf).
 - I. Sidewall Components:
 - 1. End anchor: secures the end of the rail to the structure and controls rail movement in the event of a fall.
 - 2. Intermediate anchor: secures the rail to the structure at intervals to suit the work site and structure.

3. Concealed End anchor: secures the end of the rail to the structure and controls rail movement in the event of a fall.
 4. Concealed Intermediate anchor: secures the rail to the structure at intervals to suit the work site and structure. (Tapped versions available.)
- J. Fabricated supports: Carbon steel with corrosion resistant finish.
1. Steel Plates, Shapes, and Bars: ASTM 36.
 2. Steel Tubing: ASTM A 500, cold formed.
 3. Welding rods and bare electrodes: Select according to AWS specifications for metal alloy welded.

2.4 MATERIALS

- A. Primary cable assembly components: Stainless steel: ASTM A 666, Type 316.
- B. Connectors: Comply with OSHA regulation 1926.502.

2.5 FABRICATION

- A. Fabricate anchoring devices as recommended by the manufacturer to provide adequate support for intended use. Shop fabricate required anchorage posts using structural steel with material test certificates for full material traceability.
- B. Welding: AWS structural specification D1.1 by certified welders and inspected by an AWS certified welding inspector.
- C. Fabricate joints in a manner to discourage water accumulation. Provide weep holes to drain any water, which could accumulate in the exposed joints.
- D. Finishes:
 1. Stainless Steel: Electropolished for corrosion resistance.
 2. Structural Steel: Zinc Galvanized for corrosion resistance.
 2. Aluminum: Anodized.
 3. Aluminum: Powder coated.

2.6 ACCESSORIES

- A. Fasteners: Designed to support a load on the system of 2 times the maximum design load without failure.
- B. Signage: Provide signs and system identification tags.
- C. Flashing and Sealants: Comply with requirements of Division 07 for roofing and flashing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of fall protection equipment.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordinate location of fall protection equipment indicated to be attached to structural substrate or surface of roofing system, and furnish anchoring devices with templates, diagrams, and instructions for their installation.

3.3 INSTALLATION

- A. Installation of fall protection system to be performed Diversified Fall Protection, 24400 Sperry Rd. Westlake, OH 44145, (440)-348-9460 www.fallprotect.com
- B. No Substitutions
- C. Install according to approved shop drawings and manufacturer's instructions.
- D. Install anchorage and fasteners in accordance with manufacturer's recommendations to obtain the allowable working loads published in the product literature and in accordance with this specification.
- E. Exposed work shall be true to line and level with accurate angles, surfaces and with straight square edges. Coordinate anchorage system with supporting structure.
- F. Do not load or stress system until materials and fasteners are properly installed and

ready for service.

3.4 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Provide manufacturer's field representative to inspect installed fall protection system.

Edit testing procedures as necessary for regulatory requirements.

- C. Test fall protection system for compliance with the following requirements:
 - 1. Ensure that system components operate as specified.

3.5 ADJUSTING

- A. Adjust fall protection components to function smoothly and safely.

3.6 CLEANING

- A. Clean components of any deleterious coatings or compounds.
- B. Remove loose materials, crating, and packing materials from site.

3.7 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate operation of system to Owner's personnel.
 - 1. Use operation and maintenance data as reference during demonstration.
 - 2. Briefly describe function, operation, and maintenance of each component.
- B. Training: Train Owner's personnel on operation and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of two hours of training.
 - 3. Location: At project site.
 - 4. Training to take place at the completion of the installation.
- C. Recertification: Coordinate an annual recertification program per the manufacturers recommendation
 - 1. Recertification to be performed by Diversified Fall Protection, 24400 Sperry Rd. Westlake, OH 44145 (440) 348-9460 www.fallprotect.com

END OF SECTION

