SECTION 07 72 00
ROOFTOP FALL PROTECTION AND ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

Free-standing modular rooftop fall protection systems. (RoofGuard Classic)

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 07 40 00 - Membrane Roofing: Coordination of roof edge protection installation.

C. Section 07 42 00 - Wall Panels.

1.3 REFERENCES

A. Americans with Disabilities Act Accessibility Guidelines (ADA).

B. American National Standards Institute (ANSI):
1. A 21.1 - Safety Requirements for Floor and Wall Openings, Railings and Toe Boards.
2. A 58.1 - Minimum Design Loads in Buildings and Other Structures.
3. A 117.1 - Accessible and Usable Buildings and Facilities.

C. ASTM International (ASTM):
1. ASTM A 47 - Standard Specification for Ferritic Malleable Iron Castings.
2. ASTM A 53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
3. ASTM A 153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

D. Occupational Safety and Health Administration (OSHA): 1910.23 - Guarding Floor and Wall Openings and Holes.

E. CSA Z259.18 Counterweighted Guardrail Systems

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. Shop Drawings: Including but not limited to indication of profiles, sizes, connections, sizes and types of fasteners and accessories; showing fabrication and installation of handrails and guardrails including but not limited to plans, elevations, sections, details of components, anchor details, and attachment to adjoining units of work.

1.5 QUALITY ASSURANCE

A. Guardrail Structural Requirements:
   1. Handrail, wall rail and guardrail assemblies and attachments shall withstand a minimum concentrated load of 200 pounds (90.1 kg) applied horizontally or vertically down at any point on the top rail.
   2. Infill area of guardrail system capable of withstanding a horizontal concentrated load of 200 pounds (90.1 kg) applied to one square foot (8165 g/sm) at any point in the system. Load not to act concurrently with loads on top rail of system in determining stress on guardrail.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards. Store materials within absolute limits for temperature and humidity recommended by the manufacturer.

B. Protect finishes from damage.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under adverse environmental conditions outside manufacturer's absolute limits (snow, high winds etc.)

B. Field Measurements: Where handrails and railings are intended to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings.
   1. Where field measurements cannot be made without delaying the railing fabrication and delivery, obtain guaranteed dimensions in writing by the Contractor and proceed with fabrication of products to not delay fabrication, delivery and installation.

C. Coordinate fabrication and delivery schedule of handrails with construction progress and sequence to avoid delay of railing installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: RoofGuard® by Liftsafe Fall Protection Inc., which is located at: 409 Harmony Road, Ayr, ON N0B 1E0; Toll Free Tel: 800-977-2005; Tel: 519-896-2430; Fax: 519-896-2085; Email: info@liftsafeinspections.com Website: www.fallsafetysolutions.com

B. Substitutions: Not permitted.

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

2.2 FREE-STANDING ROOFTOP FALL PROTECTION SYSTEMS (RoofGuard Classic)

A. Free-Standing Rooftop Fall Protection Systems: RoofGuard as manufactured by Liftsafe Fall Protection Inc.
   1. Description: Permanent, modular, free-standing, roof edge railing system that does not penetrate the roofing system;
   2. Provide components including but not limited to horizontal rails, posts, baseplates, counterweight returns, fittings and accessories as indicated or required to match design indicated on Drawings and to provide complete installation.
   3. Compliance:
      a. OSHA Standard 29 CFR 1910.23.
         1) 42 inch (1067 mm) minimum height to provide a pedestrian egress barrier on the roof to withstand a minimum load of 200 lb (90719 g).
      b. OSHA Standard 29 CFR 1926.501.
      c. OSHA Standard 29 CFR 1926.502.
      d. Canadian National Building Code 4.1.10.1(1)(e), 4.1.10.1(2), 4.1.10.1(4).
      e. Ontario Building Code Section 4.1.10.1(1)(b), 4.1.10.1(2), 4.1.10.1(4).
      f. Ontario Reg 213
      g. Ontario Reg 851.
      h. EN ISO 14122: PT3.

   4. System Design: Designed for applications with flat or low slope roof up to 5 degrees.
      a. Railings with single baseplate on leading edge. 6-foot counterweight returns at both ends.
      b. Intermediate tie-backs at 27-foot intervals
         1) Intermediate returns can be either 6-foot return rails (top rail and mid-rail) or Low-Profile counterweight
         2) Baseplates – galvanized steel weights no more than 40lbs each with handle to prevent pinch points
         3) Stainless steel set screws in baseplates
         4) Fittings to be AlMag 535 for corrosion resistance
         5) Top and intermediate rails and posts to be Aluminum pipe to be 1.5” Sch 40, T6061
         6) Fasteners: Type 304 or 305 stainless steel.
         7) Components: As scheduled and indicated on Drawings, as required to match design indicated on Drawings and as required to provide complete installation.

2.3 MATERIALS

A. Pipe – Aluminum 6061-T6 for posts and horizontal rails. 1 ½” SCH 40.

B. Fittings – ALMAG 535 – Aluminum Magnesium Alloy – with high strength and high corrosion resistance

C. Baseplates – mild steel with hot-dip galvanized finish for outdoor corrosion resistance

D. Hardware – 304 or 305 SS set screws. Serrated cone at fitting connections to prevent vibration loosening.

2.4 FABRICATION

A. Components delivered to site in bundles of product type; pipes, fittings, baseplates.

B. Posts to be finished inside fittings or with UV resistance caps to prevent open pipe sections.

C. Assemble components with joints tightly fitted and secured. Accurately form components to suit installation.

PART 3 EXECUTION

3.1 PREPARATION

A. Prepare substrates using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

B. 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 in accordance with manufacturer's instructions including the following:

1. Fit exposed connections accurately together to form tight joints. For all connections with RoofGuard fittings, each set screw is to be tightened to 29 foot pounds (39 N-m) of torque.
2. Perform cutting, drilling, and fitting required for installation of handrails. Set handrails accurately in location, alignment, and elevation, measured from established lines and levels.

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