SECTION 05520 | SECTION 05 52 00

HANDRAILS AND RAILINGS / METAL RAILINGS / PIPE AND TUBE RAILNGS / ALUMINUM RAILINGS

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum handrails, guardrails, and railing systems, including connectors, fasteners, and required accessories including the following types and applications:
   1. Glass baluster railing system.
   2. Glass panel railing system.
   3. Topless glass panel railing system.
   4. Ornamental welded aluminum railing system.
   5. Ornamental component aluminum railing system.
   6. Pre-assembled aluminum and stainless-steel railing system (cable railing).
   7. Handrail system.
   8. Fencing system.
   9. Gates.
   10. Privacy screens.
   11. Wind screens.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 05 51 33 - Metal Ladders.

C. Section 05 73 13 - Glazed Decorative Metal Railings.

D. Section 05 71 00 - Decorative Metal Stairs.

E. Section 06 20 00 - Finish Carpentry.

F. Section 06 43 13 - Wood Stairs.

G. Section _____ - _____: Execution requirements for placement of anchors specified in this section in _____ wall construction.

1.3 DESIGN / PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer, fabricate, and install handrails, guardrails, and

railing systems to withstand the structural loading required by applicable codes.

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:
   1. Show complete layout; plan views, elevations, connections, details for fabrication and attachment to other elements, and other installation details.
   2. Include sealed drawings by the registered engineer responsible for structural design of system.

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. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic cleaning and maintenance of all railing components.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in providing products of the type specified in this section, with minimum of 15 years documented experience with products in use.

B. Installer Qualifications: Company specializing in installing products of the type specified.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver handrails, guardrails, railing systems, and related components in protective packaging.

B. Store components to avoid damage from abrasion and other construction activities.

1.7 SEQUENCING

A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.

1.8 PROJECT CONDITIONS

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

1.9 WARRANTY

A. Manufacturer's Limited 20-Year Residential Warranty: provide manufacturer's standard residential limited warranty for defects in the structure and weld for 20 years; and protection against cracking, peeling, flaking or blistering for 5 years.

B. Manufacturer's Limited 20-Year Commercial Warranty: provide manufacturer's standard commercial limited warranty for defects in the structure and weld for 20 years; and protection against cracking, peeling, flaking or blistering to be determined per project.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Excell Railings Systems Ltd
#306 – 12886 Anvil Way, Surrey, BC V3W 8E7 Canada. Toll Free Tel: 1-866-999-7245. Tel: 604-501-0151. Fax: 604-501-0155. Email: info@excellrailing.com; Website: https://excellrailing.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 HANDRAILS AND RAILINGS

A. General: Provide products free from surface blemishes where exposed to view in the finished installation.

B. Aluminum Handrail and Railing Systems: Excell Railing Systems.
1. Design: Component Picket System.
2. Design: Component Glass System.
3. Design: Welded Picket System.
4. Design: Topless Glass Mirage Post system.
5. Design: Topless Glass PUP Post system.
6. Design: Cable Railing.
7. Design: _____.
8. Color: White.
9. Color: Textured White.
10. Color: Black.
11. Color: Textured Black
12. Color: Rideau Brown.
13. Color: Textured Rideau Brown.
14. Color: Beige.
15. Color: Quartz Grey.
16. Color: Grey.
17. Color: Textured Grey.
18. Color: Sandalwood.
19. Color: Oyster Grey.
20. Color: Premium Wood Grain Finish, color as selected by the Architect.
21. Color: Premium Wood Grain Finish, color ____.
22. Color: Custom: _____.

2.3 COMPONENTS

A. General: Provide all aluminum components of same alloy.

B. Posts: Aluminum, sizes indicated on the Drawings; welded bases.

C. Rails: Aluminum, sizes indicated on approved shop drawings.
   1. Top rails continuous over posts.
      a. Profile: Round.
      b. Profile: Square.
      c. Profile: Port Royal.
      d. Profile: Heritage.
      e. Profile: PUP - No Top Rail.
      f. Profile: Cable Railing with _____.
      g. Profile: _____.

   2. Bottom Rail Profiles: Unspliced lengths between posts.
      a. Profile. Welded Picket.
      b. Profile. Component Glass.
      c. Profile: Fence Bottom Sleeve.
      d. Profile: Glazing Channel.
      e. Profile: _____.

D. Pickets: Aluminum, sizes indicated on the Drawings.

E. Collapsible Pickets: Aluminum:
   1. Height: 36 inches.
   2. Height: 42 inches.
   3. Length: 6 feet.
   4. Length: 8 feet.
   5. Length: 10 feet.

F. Cable and Hardware: 1/8 inch, Type 316 stainless steel cable and fittings.

G. Panels: 1/4 inch (6 mm) tempered glass.
   1. Clear.
   2. _____ tinted.

2.4 ACCESSORIES

A. Screws: Color matched, stainless steel.

B. Screws: Color matched, cadmium plated.

C. Anchors and Inserts: As required to support work specified, in accord with approved shop drawings.

D. Fittings and Fasteners: Same basic material as parts being joined, unless otherwise indicated. Do not use metals corrosive or incompatible with materials being fastened.

2.5 FABRICATION

A. Fabricate handrails and railing systems to comply with manufacturer's printed requirements, project design requirements, details, dimensions, finish and member sizes, including post spacing and anchorage, but not less than the structural requirements to support loading.

B. Clearly mark component units for site assembly and installation.

C. Use connections that maintain structural capacity of joined members.

2.6 FINISH

A. Powder Coated Finish: Factory electrostatically-applied, color as specified.

B. Premium Wood Finish: Factory applied, color as specified. Conforms to AAMA 2604.

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. Prepare surrounding construction to receive railing system installations to comply with manufacturer's requirements.

B. Review and coordinate setting drawings, shop drawings, templates, and instructions for assembly and installation of railing system and related items to be embedded in concrete and masonry.

3.3 INSTALLATION

A. Install railing system and related components in strict accordance with manufacturer's printed installation instructions and approved project shop drawings.

B. Preassemble railing system, including posts, pickets, and panels where shown, in easy to lift sections whenever possible.
   1. Align rails so that variations from level for horizontal members, and from parallel with rake of steps and ramps for sloping members, do not exceed 1/4 inch in 12 feet (6 mm in 3.65 m).
   2. Separate aluminum from building materials where electrolytic action may occur by means of asphaltic paint or other approved method.

C. Adjust, level, and securely install railing system components.

D. Install bottom rails in unspliced lengths between posts.

E. Install posts of continuous sections from mounting base to top rail.

3.4 CLEANING

A. Immediately upon completion of installation, clean all railing system surfaces using clean water and mild soap or detergent.

B. Do not use abrasive agent or harsh chemicals.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION