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METALWORKS EXCALIBUR®

Metal Works® Excalibur® Guide Specification

This section is based on the products of RDI, Egg Harbor City, NJ 08215; (877) 420-7245; www.rdirail.com.

RDI brings you strength and security in our Metal Works® Excalibur® steel railing line. We've taken elements you've loved from our other systems – Endurance-like hidden attachments, Titan-like easy installation with pre-attached brackets – and created a railing line that is sturdy and tough, yet easy to install. Available in textured Satin Black and Hammered Bronze finishes along with accessories to help you customize your install with a deck board top, Excalibur gives you the strength of steel in a traditional and timeless style.

RDI is the number one vinyl railing manufacturer in the US and the leading innovator of low-maintenance, easy to install, quality railing systems, porch post systems, and complete accessory lines.

SECTION 057300 - DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Steel railing system.

1.2 REFERENCES

Specifier: If retaining this optional Article, edit list below to correspond to those references retained in edited specification section.

- A. References, General: Versions of the following standards current as of the date of issue of the project or required by applicable code apply to the Work of this Section.
- B. ASTM International (ASTM):
 - 1. ASTM A123/A123M - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 2. ASTM A307 - Carbon Steel Bolts, Studs, and Threaded Rods 60,000 psi Tensile Strength.
 - 3. ASTM A500/A500M - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's technical literature for each product specified.

1. Include preparation instructions and recommendations.
2. Include storage and handling requirements and recommendations.
3. Include manufacturer's installation instructions.

Specifier: This product is available with load calculation documentation that is individually stamped by a Professional Engineer per state. Contact RDI Customer Service at (877) 420-7245 for documents that pertain to your region. Delete paragraph below if requirement for Delegated Design Submittal is retained.

4. Include load calculation documentation stamped by a Professional Engineer licensed in the jurisdiction in which Project is located.

B. Shop Drawings:

1. Include plans, elevations, sections, and details.
2. Include points of attachment and their corresponding static and dynamic loads imposed on deck and post foundations.

Specifier: Retain "Delegated Design Submittal" Paragraph and related paragraphs under Quality Assurance and Performance Requirements articles when required due to railing size or other exceptional Project requirements.

- C. Delegated Design Submittal: For railings, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

Specifier: Retain both "Samples for Initial Selection" and "Samples for Verification" paragraphs below for two-stage Samples.

- D. Samples for Initial Selection: For each finish product and finish specified, sets of color chips representing manufacturer's full range of available colors.

- E. Samples for Verification: For each material and for each color, in manufacturer's standard size.

1.4 QUALITY ASSURANCE

A. Qualification Data:

1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this Section with minimum five years documented experience.
2. Installer Qualifications: Railing manufacturer, or experienced Installer with a record of successful installations of similar type and size to that specified.

Specifier: Retain below for delegated design requirement.

- B. Professional Engineer Qualifications: Documented experience with providing delegated-design engineering services of the kind required by this Section, including documentation that engineer is licensed in the jurisdiction in which Project is located.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Transport, handle, store and protect railing components so they are in undamaged condition when installed.

- B. Store railing components in manufacturer's unopened packaging.

- C. Store railing components off the ground in a dry, protected, covered and secure area.

1.6 WARRANTY

- A. Special Warranty: On manufacturer's standard form in which manufacturer agrees to repair or replace components which fail in materials or workmanship within specified warranty period.

Specifier: RDI offers a limited 15-year warranty for this product for single-family residential installations and 10-year warranty for other building types.

1. Warranty Period: [15 years] [10 years] from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Requirements: Engineer railings to withstand live and dead loads according to authorities having jurisdiction and information indicated within limits and under conditions indicated, without material failure or permanent deformation of structural members.

Specifier: Retain paragraph below if retaining requirement for delegated design by Contractor. Custom engineering is available via authorized Metal Works Excalibur railing dealers.

- B. Delegated Design: Design railing to withstand design and operational loads.

2.2 MANUFACTURER

- A. Basis of Design: [Metal Works® Excalibur®](#) railing manufactured by RDI; Egg Harbor City, New Jersey 08215; (877) 420-7245; www.rdirail.com.

Specifier: Retain one of the following two paragraphs.

1. Substitutions: Not permitted.
2. Substitutions: Submit request for substitution according to [Instructions to Bidders and] Division 01 General Requirements.

2.3 RAILING SYSTEM

- A. Use manufacturer's standard components.
- B. System Description: All components minimum G60 galvanized steel.
- C. Railings:
 1. Height: [36 inches] [42 inches].
 2. Length: [72 inches] [96 inches] [120 inches] [As indicated on the Drawings].

Specifier: Colors below refer to RDI proprietary finishes. Satin Black and Hammered Bronze are mechanically textured finishes. All components and assemblies are powder coated after galvanizing. Silver is exclusively available in Canada.

3. Colors: [Satin Black] [Hammered Bronze] [Silver].

- D. Top Rail: 1 by 1 inch, 0.07 inch thickness.
- E. Bottom Rail: 1 by 1 inch, 0.07inch thickness.
- F. Posts:
 - 1. Blank, Line, Corner, and End Posts: 2 by 2 inch steel tubes, 0.10 inch thickness.
 - 2. Post-to-Post Rail Systems. 3 by 3 inch steel tubes, 0.08 inch thickness.
 - 3. Base Plates: 3.8 by 3.8 inch by 1/4-inch thick. Weld to posts.
- G. Infill:
 - 1. Balusters: 5/8 by 5/8 inch, 0.05-inch thickness.
 - 2. Patterns: Manufacturer's standard infill pattern in the following pattern:

Specifiers: Patterns below refer to RDI proprietary patterns. See RDI website to view patterns.

- a. [Traditional] [Serpentine] [Mosaic].

- H. Brackets: Manufacturer's standard brackets in the following style:

Specifiers: Patterns below refer to RDI proprietary styles. See RDI website to view styles.

- 1. [Scrollwork] [Imperial].

- I. Accessories: Include post tops, bracket covers, trim rings, and all accessories required for a complete installation.

2.4 MATERIALS

- A. Steel Components: All steel components and assemblies galvanized and with powder-coated factory finish.

- 1. General: Provide steel free from pitting, seam marks, roller marks, stains, discolorations, and other imperfections where exposed to view on finished units.
- 2. Steel Rails and Balusters: ASTM A500/A500M, Grade A cold-rolled steel tubing with G-60 zinc coating on both inside and outside surfaces in accordance with ASTM A123/A123 hot-dipped electroplating process
- 3. Posts: Square formed and welded with welded steel base plate.

- B. Fasteners:

- 1. Stainless steel fasteners, concealed upon installation.
- 2. Attachment to Wood Decking: 3/8-inch diameter A307 bolts for through bolt attachment.
- 3. Attachment to Concrete: Comply with manufacturer's instructions.

2.5 FINISHES

- A. Finish Coating: Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with manufacturer's written instructions.

- 1. Components and Welded Assemblies: Minimum G60-coating.

2. Prepare galvanized metal with non-petroleum solvent followed by application of sealing zinc phosphate coating to comply with resin manufacturer's instructions.
3. Apply two-step powder finish coating immediately after sealing, minimum 3 mil average film thickness.

2.6 FABRICATION

- A. Factory pre-assemble and weld railing and infill panels into full units prior to site delivery. Pre-attach level brackets.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine railing system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of railing system.
 1. Inspect substrate that will support railing system to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to railing system manufacturer.
- B. Proceed with railing installation once out-of-tolerance work and other deficient conditions are corrected.

3.2 RAILING INSTALLATION

- A. General: Install railing system in accordance with approved shop drawings and manufacturer's written instructions.
- B. Support Installation: Install blocking and other supports at locations, spacings, and with fasteners recommended by manufacturer.
- C. Install components in sequence recommended by manufacturer.

3.3 CLEANING AND PROTECTION

- A. Clean finished surfaces as recommended by railing system manufacturer.
- B. Replace damaged or discolored components that cannot be restored by field repair.

END OF SECTION