ALUMINUM ADA HANDRAIL Guide Specification

This section is based on the products of RDI Railing, an Oldcastle® APG brand, Atlanta, GA 30346; (877) 265-2220 www.rdirail.com.

Aluminum ADA Handrail is the perfect solution for applications where durable, low maintenance, graspable metal handrail is desired. Strong, metal-to-metal connections ensure dependable safety and security for any stair or ramp that requires ADA code compliance.

Oldcastle® APG, a CRH Company, is North America's leading provider of innovative outdoor living solutions that enable customers to Live Well Outside. The manufacturer's portfolio of premier building products inspires endless possibilities while providing enduring outdoor spaces where people can connect, reflect and recharge.

SECTION 05 73 00 ORNAMENTAL ALUMINUM RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Ornamental aluminum guardrail components

1.2 DEFINITIONS

A. Railings: Guards, handrails, and similar devices used for protection of occupants at open-sided floor areas and for pedestrian guidance and support, visual separation, or wall protection.

1.3 REFERENCES

A. ANSI/CABO A117.1 – American national Standard for Building and Facilities; Providing Accessible and Usable Building and Facilities; Council of American Building Officials

B. ASTM B 221 – Standard Specification for Aluminum and Aluminum – Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.

C. ASTM E 935 – Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Building.

D. ASTM E 985 – Specification for Permanent Metal Railing and Rails for Buildings.

E. ASNI Z 07.1 – Glazing Material used in Building Safety Performance Specifications and method of test.

F. ASTM E 894 – Anchorage of Permanent Metal Railing Systems and Rails for buildings.

G. Section 1607.7 of 2018 International Building Code (IBC)

H. AAMA – 2604-13 Voluntary, Performance Requirements and test procedures for high performance organic coatings on aluminum extrusions and panels.

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

J. American Society for Testing and Materials (ASTM) E 935 - Standard Test Method for Performance of Permanent Metal Railing Systems and Rails for Buildings.

K. American Society for Testing and Materials (ASTM) E 985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings

L. AAMA – 2604-13 Voluntary, Performance Requirements and test procedures for high performance organic coatings on aluminum extrusions and panels

1.4 DELEGATED DESIGN REQUIREMENTS

A. Delegated Engineering Responsibility: Require ornamental aluminum railings installer to employ a professional engineer, licensed in the state where the project is located, to provide an engineering design for connections of the railings to adjacent building construction required to meet concept expressed in the Contract Documents that includes the following:

1. Comprehensive engineering analysis indicating location, type, magnitude, and direction of loads imposed on building construction.
2. Preparation of engineering calculations, shop drawings, and other submittals with professional seal affixed according to respective jurisdictional licensing regulation.

1.5 PERFORMANCE REQUIREMENTS

A. Structural Requirements:

1. Aluminum Hand Rail systems performance meets or exceeds design loading specified in Chapter 16 of the IBC, Section R301 of IRC, and UBC Chapter 16.

B. Structural Performance: Comply with performance requirements specified, as determined by testing of manufacturer's aluminum railings representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction

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

1. Handrails:
   a. Uniform Load: 50 lbf/lin ft applied in any direction.

b. Concentrated Load: 200 lbf applied in any direction.

2. Load Assumption: Loads need not be assumed to act concurrently.

1.6 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

B. Shop Drawings: Include plans, elevations, sections, and attachment details.

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

C. Samples for Initial Selection: For products involving selection of color, texture, or design, including mechanical finishes.

D. Samples for Verification: For each type of exposed finish required in manufacturer's standard size

1.7 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: All products listed in this section should be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as 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

PA RT 2 PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: Aluminum Hand Rail manufactured by RDI Railing; Atlanta, GA 30346; (877) 265-2220; www.rdirail.com.

2.2 MATERIALS

A. Aluminum Components:

1. General: Provide aluminum free from pitting, seam marks, roller marks, stains, discolorations, and other imperfections where exposed to view on finished units.
2. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.

    a. Extruded Bar and Tube: ASTM B 221 (ASTM B 221 M), alloy 6063-T5/T52
    b. Extruded Structural Pipe and Tube: ASTM B 429, alloy 6063-T832.
    c. Plate and Sheet: ASTM B 209 (ASTM B 209M), alloy 6061-T6.
    d. Die and Hand Forgings: ASTM B247 (ASTM B 247 M), alloy 6061-T6
    e. Castings: ASTM B 26/B 26M, alloy A356-T6.

B. Physical dimensions of aluminum railing components:

1. Length: [80″][104″][120″][As indicated on the Drawings].
2. Height: must be installed between 34″ and 38″ installed heights.
3. Rails: Circular shaped 1-1/2″ in diameter.

C. Fasteners: systems include stainless steel fasteners.

2.3 FINISHES

A. Appearance of Finished Work:

1. Variations in appearance of abutting or adjacent units are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same unit are not acceptable.
2. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

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

1. Material: AAMA 2604 - Polyester powder coating, 3 mil average film thickness.
2. Colors: [White] [Matte Black] [Hammered Bronze] [Matte Bronze]

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Install Hand Rail in locations shown in compliance with manufacturer's written instructions. During installation, aluminum components shall be carefully handled and stored to avoid contact with abrasive surfaces. Install components in sequence as recommended by railing manufacturer.

3.2 CLEANING

A. Remove all traces of dirt and soiled areas

B. Clean by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.

3.3 PROTECTION

A. Protect railings from damage during construction period with temporary protective coverings. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field.

END OF SECTION