SECTION 06 6313

PLASTIC RAILINGS (WOLF RAIL)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cellular PVC reinforced with aluminum extrusions:

1. Handrails.

2. Stair railings.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Placement of supports and blocking for anchors in wood stud walls.

1.03 REFERENCE STANDARDS

A. ASTM B429 – Standard Specification for Aluminum Alloy Extruded Structural Pipe and Tube.

B. ASTM D1784 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds; 2011.

C. ASTM D7032 - Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails; 2017.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

C. Samples: Submit two, 12 inch long samples of handrail. Submit two samples of connecting balusters, and post caps.

D. Manufacturer's Qualification Statement.

E. Installer's Qualification Statement.

F. Manufacturer's Instructions.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with at least five years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

B. Comply with manufacturer's recommendations. Handle materials to avoid damage.

1.07 WARRANTY

**(Note to Writer: Use the following paragraph for single family residences)**

A. Single Family Residences:

1. Manufacturer's Product Warranty: Provide manufacturer’s limited lifetime warranty.

a. Warranty Period: Lifetime.

b. Warranty shall include defects in manufacturing that cause products to:

1) Rot.

2) Corrode.

3) Delaminate.

4) Splinter or split.

5) Structural damage from termites or fungus.

6) Excessively swell from moisture.

**(Note to Writer: Use the following paragraph for all Project except single family residences.)**

B. Buildings other than Single Family Residences::

1. Manufacturer's Product Warranty: Provide manufacturer’s limited lifetime warranty.

a. Warranty Period: 30 Years

b. Warranty shall include defects in manufacturing that cause products to:

1) Rot.

2) Corrode.

3) Delaminate.

4) Splinter or split.

5) Structural damage from termites or fungus.

6) Excessively swell from moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Railings indicated on the Drawings and specified in this specification are based on Wolf Rail as distributed by Wolf Home Products; other equivalent products will be acceptable.

2.02 PLASTIC AND ALUMINUM RAILING SYSTEM

A. Performance Requirements:

1. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction.

2. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction.

3. Design Requirements:

a. Allow for expansion and contraction of members and building movement without damage to connections or members.

b. Provide anchors and other components as required to attach to structure; where exposed fasteners are unavoidable provide flush countersunk fasteners.

2.03 RAILING COMPONENTS

**(Note to Writer: Edit Paragraphs A. through E. to match Project design intent.)**

A. Rail Profiles: Top and bottom rails shall be pre-routed with holes to receive selected baluster material or un-routed if Deluxe Series balusters are selected by the Architect.

1. Traditional Style

2. Designer Profile

B. PVC Colors: White, Almond, Khaki, Mocha Walnut, Earl Gray, Green Teak

C. Railing Infill Materials:

1. Value Series Baluster Materials:

a. Colonial

b. Square

2. Classic Series Baluster Materials:

a. Round Balusters in selected color.

b. Color: White, Black Bronze, Matte Black, Copper, Rust

3. Deluxe Series Baluster Materials:

a. Scenic Clear View Glass

b. Deckorators Classic

c. Deckorators Baroque

d. Deckorators Arc

D. Post, Post Sleeves, and Trim: Provide posts, trim, and caps as required to complete installation:

1. Structural Posts: Colonial structural post.

2. Post Sleeve Size: As required to fit wood posts.

3. Post Trim: Provide 1 piece post trim unless otherwise indicated on the Drawings.

E. Post Cap Style:

1. Caps With Lighting:

a. Ornamental Low Voltage Cap: .8 watts shines outward.

b. Ornamental Low Voltage Downlight Cap: .8 watts shines downward.

c. Ornamental Low Voltage Combo Cap: 1.6 watts shines downward and outward.

2. Other Cap Designs:

a. New England Classic Cap

b. Federation Cap

c. External Pyramid Cap

F. Rail Brackets and Mounting Hardware: Provide manufacturers mounting brackets to match railing configurations and required to complete the installation. Brackets shall be complete with cover plates and fasteners.

G. Exposed Fasteners: No exposed bolts or screws once trim has been installed.

2.04 MATERIALS

A. Plastic Railing Components: Capped cellular PVC plastic with no cellulose fiber molded into solid shapes in standard railing sizes and profiles.

1. Poly Vinyl Chloride (PVC); lmpact-resistant and ultraviolet (UV) stable extruded product; comply with ASTM D1784.

2. Surface Burning Characteristics: Flame spread index of 200, maximum; when tested in accordance with ASTM E84.

B. Aluminum Reinforcement for Rails:

1. Aluminum extrusions; alloy and temper 6063-T5 or 6063-T6 complying with ASTM B429/B429M.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install according to manufacturer's written instructions and instruction video.

3.02 FLAT RAILINGS

A. Posts:

1. Install all flat railing wood posts to a height of 36 inches above finished floor or deck and check for level and plumb.

2. Install post sleeve by slipping over wood post and attaching it to the post using deck screw.

3. Install trim rings on all posts before installing railing sections.

B. Measuring and Cutting Rails:

1. Cut spacer blocks from scrap of the appropriate height to achieve 36 inch high railing. Coordinate spacer size with manufacturer’s directions based on type of balusters being installed. Place spacers on decking between posts.

2. Place the bottom rail across the opening where the railing is to be installed. Allowing at least 1¼” from the end of the bottom rail to the first picket hole, adjust your measurements until each end is equal.

3. Mark your measurements onto the rail 1/8” short to allow for expansion.

4. Making sure your measurements are correct, transfer your marks onto the top rail by laying the bottom and top rails together with the baluster holes lined up to one another.

5. Using a circular or compound miter saw cut each end of the bottom and top rails to correct length. Top rail includes aluminum reinforcing, cut plastic rail and internal aluminum reinforcing at the same time do not separate.

C. Assembling Railing

1. Place the bottom mounting brackets onto the bottom rail at each end making sure the flat side is facing the mounting surface. For rails 6 foot long and longer install crush blocks in the holes routed in the bottom of the bottom rail. Refer to manufacturer recommendations for the quantity of crush blocks based on rail length.

2. Support bottom rail on top of the spacer blocks, slide the brackets up to the mounting surface of the post. Secure bracket to the post using any 4 holes on the brackets. Pre-drill screw pilot holes is recommended but not required.

3. Insert each baluster into the holes of the bottom rail.

4. Place the mounting bracket onto each end of the top rail, making sure the flat side is facing the mounting surface of the post.

5. Starting at one end of the railing section, insert each baluster into the matching hole of the top rail.

6. Secure the top rail brackets to post in the same manner as bottom rail using the screws provided.

7. Each bracket set contains 2 set screws to secure bracket to aluminum reinforcing in the rail. Pre-drill through the top and one side of each bracket on the bottom rail and through the bottom and one side of each bracket on the top rail. Secure the rail in place using the supplied set screws.

8. Check your installation for accuracy before snapping the decorative screw covers of each bracket into place. Snap decorative covers into place.

(Note to Writer: Delete the following Article if stair railings are not required.)

3.03 STAIR RAILINGS

A. Stair Railing Posts:

1. Install stair wood posts a minimum of 48 inches above the tread and check for level and plumb.

2. Slip PVC sleeve over wood stair post.

3. Attach PVC sleeve to wood post at base using deck screw.

4. Slip trim rings on all posts.

B. Assembling Stair Railing:

1. Temporarily remove aluminum insert from the bottom rail. Lay the rail on the steps beside the posts. Make sure the routs are facing upwards. Measure the distance from the post to the first rout and center rail between posts.

2. Using the side of the posts as a guide, scribe a line on the rail at both the top and bottom of rail, allowing about 1/8” on each end for expansion.

3. Reinsert aluminum insert into bottom rail cut on the scribed lines. The top rail can be cut with aluminum insert inside.

4. Place the bottom mounting brackets onto the bottom rail at each end making sure the flat side is facing the mounting surface. Pay attention to the orientation of the brackets. One is for the top of stairs and one is for the bottom.

5. Place a scrap decking block on stair bull nose to function as spacer.

6. Position the bottom rail between posts. Ensure the distance between the underside of bottom rail and nose of tread does not exceed one inch.

7. Pre-drill each screw hole before securing the bracket in place to the mounting surface using the screws provided.

8. Insert two balusters into the bottom rail at the third rout from post on each end. Do not insert all the balusters at this time.

9. Temporarily remove aluminum insert from top rail and position uncut top rail onto the balusters. Make sure that the balusters are inserted into the same corresponding routs as bottom rail. Using a level, ensure that the balusters are plumb. Scribe top rail to post marking the angle and length of top rail, allow about 1/8” on each end for expansion.

10. After marking the top rail reinsert aluminum insert and cut on the scribed lines. Cut the top with aluminum insert inside.

11. Slide top rail brackets onto top rail in correct orientation (top bracket slopes downward, the bottom of stairs slopes upward).

12. Insert the remainder of the balusters into the bottom rail. Ensure balusters insert fully into the rail and extend all the way to the bottom.

13. Reinstall the cut top rail with aluminum insert by starting at one end of the railing section; insert each baluster into the matching hole of the top rail. Ensure the balusters insert fully into top rail and extend all the way to aluminum insert.

14. Secure the top rail brackets to post in the same manner as bottom rail using the screws provided.

15. Each bracket set contains 2 set screws to secure bracket to aluminum reinforcing in the rail. Pre-drill through the top and one side of each bracket on the bottom rail and through the bottom and one side of each bracket on the top rail. Secure the rail in place using the supplied set screws.

16. Check your installation for accuracy before snapping the decorative screw covers of each bracket into place.

3.04 ATTACHING POST CAPS

A. Apply a dab of silicone on the top four corners of the post sleeve.

B. Allow silicone to cure for 24 hours.

3.05 CLEANING

A. Clean surfaces according to manufacturer's written instructions.

3.06 PROTECTION

A. Protect installed work from subsequent construction operations. Repair damaged surfaces. Remove and replace work which cannot be repaired.

END OF SECTION