FAIRWAY RAILING™

BY Envision OUTDOOR LIVING PRODUCTS

Section 06 63 00

Rigid PVC Railings and Balustrades

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Section 06 Fairway Architectural Railing Solutions Rigid PVC Railing

1.2 RELATED SECTIONS

A. Section 06-4300 - Wood Stairs and Railings

B. Section 06-6500 – Structural Plastic

C. Section 06-6000 – Plastic Fabrications

1.3 REFERENCES

A. 1. ASTM D256 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics

2. ASTM D4216 Standard Specification for PVC and Related PVC Building Products Compounds.

3. ASTM D4226 Standard Test Methods for Impact Resistance A&B

4. ASTM D638 Standard Test Method for Tensile Properties of Plastics

5. ASTM D638 Standard Test Method for Modulus of Elasticity in Tension

6. ASTM D648 Standard Test Method for Deflection Temperature under load

7. ASTM D696 Standard Test Method for Coefficient of Linear Thermal Expansion

8. ASTM D790 Standard Test Method for Flexural Properties

9. ASTM E84 Standard Test Method for Surface Burning Characteristics

10. ASTM D695 Standard Test Method for Compressive Properties

11. ASTM D792 Standard Test Method for Density and Specific Gravity by displacement

12. ASTM B221-14 Aluminum Alloy / Temper 6105-T5

1.4 DESIGN / PERFORMANCE REQUIREMENTS

1. Test Report Data:

1. Code Compliant Research Report CCRR-0153 (V210, V220)

A. 2018, 2015 International Building Code® (IBC)

B. 2018, 2015 International Residential Code® (IRC)

C. 2017 Florida Building Code® (FBC) – Excluding High Velocity Hurricane Zone (HVHZ)

2. Code Compliance Research Report CCRR-0382 (V110)

A. 2018 International Building Code® (IBC)

B. 2018 International Residential Code® (IRC)

C. 2020 Florida Building Code (FBC)

3. ICC-ES Evaluation Criteria (V410, V510)

A. 2006 International Building Code® (IBC)

B. 2006 International Residential Code® (IRC)

1.5 SUBMITTALS

B. Submit under provisions of Section 01300

C. Product Data: Submit manufacturer's product data for each product required, including installation requirements.

D. Shop Drawings: Provide complete details of entire railing system showing layout, components, fasteners and anchors.

E. Verification Samples: For each finished product specified, two samples, minimum size 6" long, representing actual product, color, and patterns.

F. Test Reports: Submit manufacturer's test reports of railings from independent testing agency to support load test requirements.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section.

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

C. Obtain guardrail accessories, fittings and fasteners from a Fairway Architectural Railing Solutions dealer to ensure consistent quality standards are maintained throughout the project.

D. Mock Up: Provide mock-up using acceptable products and manufacturer approved installation methods. Verify owner and architect's acceptance of product and workmanship.

1. Install one railing section of each type required.

2. Maintenance: Maintain mock-up during construction for workmanship comparison.

3. Removal: Remove and legally dispose of mock-up when no longer needed.

4. Incorporation: Incorporate mock-up into final construction.

E. Pre-Installation Conference: Conduct pre-installation conference.

1. Prior to commencing installation, meet at project site to review material selections, installation procedures, and coordination with other trades.

2. Mock-ups shall be reviewed during the pre-installation conference.

3. Pre-installation conference shall include the contractor, installer, Fairway Architectural Railing Solutions Representative, Architect and any other relevant parties.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Handling: Store materials in clean, dry area away from other construction activities. Maintain material in original packaging until installation.

1.8 WARRANTY

A. Project Warranty: Refer to conditions of the Contract for project warranty provisions used with their permission. The manufacturer is responsible for technical accuracy.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty documents executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

C. Warranty: Limited Warranty against defective workmanship and materials, when subject to normal and proper use, it is further warranted against surface peeling, rot, ground insects, splitting, corrosion, flaking, rusting and blistering, abnormal weathering and discoloration under conditions of normal use and service.

D. Warranty: Metal and Glass Balusters- Limited Warranty for a period of 10 years beginning from date of purchase under normal conditions of use and exposure.

E. Warranty: Grand View Railing Acrylic In-fill and Cable Railing – Warranty coverage period limited to 10-year limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products by: Fairway Architectural Railing Solutions

53 Eby Chiques Road, Mount Joy, PA 17552.

1914 South Grant Ave., York, NE 68467

2075 East State Street Extension, Trenton, NJ 08619

B. Substitutions: Not permitted under Division 01.

2.2 MATERIALS

A. PVC guardrail systems manufactured with mono-extruded PVC profiles with virgin vinyl compound. The compound is comprised of PVC (Polyvinyl Chloride) resin, UV stabilizers, impact modifiers and other specialty modifiers to provide the highest quality profiles. PVC guardrails systems provide safe, decorative and low maintenance components for use on stairs, porches, balconies, and decks.

B. **V110 Vinyl Guardrail System** (36" or 42" Level and Stair)

1. Top Rail: 1 ¾" high X 3" wide by .065" wall thickness T-Shaped vinyl extrusion

2. Top Rail Aluminum Insert: 1 ½" high X 2 ¾" wide by .063" wall thickness 6063/T6 aluminum extrusion

3. Bottom Rail: 2 ¼" high X 1 ¾" wide by .070" wall thickness vinyl extrusion

4. Bottom Rail Aluminum Insert: 2" high X 1 ½" wide by .055" wall thickness H-Insert 6063/T6 aluminum extrusion

5. Balustrade:

A. 1 3/8" X 1 3/8" Square PVC Baluster, .070" wall thickness

B. 1 3/8" X 1 3/8" Turned PVC Baluster, .070" wall thickness

C. ¾" Round by .050" wall aluminum extrusion baluster 6063-T5

D. 1/8" Horizontal 316 Stainless Steel Cable Infill

6. Surface Mount Rail Support – 1 3/8" X 4" vinyl extrusion installed at mid-span of bottom rail

7. Cast Aluminum Mounting Brackets – 2 ¼" tall X 1 7/8" wide X 1 1/8" deep aluminum mounting brackets

1. Stainless Steel screws mount aluminum brackets to posts and to top and bottom aluminum inserts during installation

8.Top Rail Bracket Covers: 3 ¼" high X 2 ¼" wide X 1 ¼" deep PVC snap around bracket cover

9. Bottom Rail Bracket Covers: 1 ¾" high X 2 ¼" wide PVC snap around bracket cover

10. Bracket Adapters: PVC 22.5 degree, 45 degree and round column adapter brackets

C. **V200 Series Vinyl Guardrail System (36" or 42" Level and Stair)**

1. Top Rail: V210 – 3 1/2" high X 2" wide by .090" wall thickness vinyl extrusion

2. Top Rail: V220 – 2 ¼" high X 3" wide by .090" wall thickness bread loaf shape vinyl extrusion

3. Top Rail Aluminum Insert: V210 – 3.1” High X 1.7” wide by .090” wall thickness H-Insert 6105/T5 aluminum extrusion

4. Top Rail Aluminum Insert: V220 – 2” high X 2.7” wide by .075” wall thickness 6105/T5 aluminum insert

5. Bottom Rail V210, V220 – 3 1/2” high X 2” wide by .090” wall thickness vinyl extrusion

6. Bottom Rail Aluminum Insert: V210, V220 - 3.1” High X 1.7” wide by .090” wall thickness H-Insert 6105/T5 aluminum extrusion

7. Balustrade:

A. 1 3/8” X 1 3/8” Square PVC Baluster, .070” wall thickness

B. 1 ¼” X 1 ¼” Turned PVC Baluster, .070” wall thickness

C. ¾” Round by .050” wall aluminum extrusion baluster 6063-T5

D. 1/8” Horizontal 316 Stainless Steel Cable Infill

E. ¼” acrylic panel infill

8. Rail Support: Not required for V200 Series Guardrails

9. Top Rail Mounting Brackets: V210 – 2 ¾” High X 3.1” wide by .87” deep rigid PVC Mounting bracket and 5” high X 3 3/8” wide X 1” deep PVC Trim Cover

10. Top Rail Mounting Brackets: V220 – 1.3” High X 2.9” wide by 1” deep rigid PVC mounting bracket and 3” high X 3 ¼” wide X 1 ¼” deep PVC Trim Cover

11. Bottom Rail Mounting Brackets: V210, V220 – 2 ¾” High X 3.1” wide by .87” deep rigid PVC Mounting bracket and 5” high X 3 3/8” wide X 1” deep PVC Trim Cover

1. Stainless Steel screws mount PVC brackets to posts and to top and bottom rail aluminum inserts during installation

12. Bracket Adapters: PVC 22.5 degree, 45 degree and round column adapter brackets

13. Deck Board Cap Rail Brackets: (V210 Only) 4 – 3 ½” long X 1 ¼” wide by 1/8” thick and screws to attach a deck board to the V210 top rail.

D. **V400 Series Vinyl Guardrail System (36” or 42” Level and Stair)**

1. Top and Bottom Rail: 3 ¼” High X 4 ½” wide by .115” wall thickness bread loaf PVC rail profile

2. Top and Bottom Rail Aluminum Insert: 3” High X 4.1” Wide by .070” wall thickness ”A” shaped 6063/T5 extruded aluminum insert

3. Balustrade:

A. 1 ¾” X 1 ¾” Square PVC Balusters, .065: wall thickness

B. 2 5/8” X 2 5/8” Turned PVC Balusters, .065” wall thickness

4. Rail Support: Not required for V400 Series Guardrails

5. Mounting Brackets: External PVC Socket Bracket 4.1” High X 4.8” wide X 1.85” deep

1. Stainless Steel screws mount PVC brackets to posts and to top and bottom rail aluminum inserts during installation

6. Bracket Adapters: 45 Degree and Round Column Adapters

E. **V500 Series Vinyl Guardrail System (36 or 42” Level and Stair)**

1. Top and Bottom Rail: 4 ½” High X 6 ½” wide by .140” wall thickness bread loaf PVC rail profile

2. Top and Bottom Rail Aluminum Insert: 4 ¼” High X 4.9” Wide by .070” wall thickness “A” shaped 6063/T5 extruded aluminum insert

3. Balustrade:

A. 3 ¾” X 3 ¾” Turned PVC Balusters, .090” wall thickness

4. Rail Support: Not required for V500 Series Guardrails

5. Mounting Brackets: External PVC Socket Bracket 5.3” High X 6.2” Wide X 2 ½” deep

1. Stainless Steel screws mount PVC brackets to posts and to top and bottom rail aluminum inserts during installation

6. Bracket Adapters: 45 Degree and Round Column Adapters

2.3 ACCESSORIES

A. 4” vinyl post sleeves in 38”, 39”, 48”, 96”. 108” lengths (.115” wall thickness)

B. 5” vinyl post sleeves in 48” and 96” lengths (.150” wall thickness)

C. 6” vinyl post sleeves in 108” length (.150” wall thickness)

D. 6 ½” vinyl post sleeves in 108” and per foot lengths up to 16’ (.150” wall thickness)

E. 8” vinyl post sleeve in 38”, 54”, and 120” lengths (.150” wall thickness)

F. 4” vinyl turned newel posts in 38” and 54” (.115” wall thickness)

G. 6” vinyl newel and recessed posts in 38” and 54” (.150” wall thickness)

H. 8” vinyl recessed panel newel post in 38” and 54” (.150” wall thickness)

I. Vinyl Post Caps available for 4”, 5”, 6”, 8” caps

A. Cap Profiles: Classic, Gothic, Ball, New England, Solar Carriage, Harbor, Internal, External, Newport

J. Structural Post Mounts – Standard and Heavy Duty

K. Cable Rail Structural Post Mounts – Pass Through and Termination

L. 12V LED Lighting

1. 4” and 12V LED Post Caps
2. 12V LED Post Sconce
3. 12V LED Light Strip
4. 12V LED In Deck Light
5. LED Extension Cables
6. 120 Watt Transformer

I. 1 ½” ADA Handrail

1. 1 ½” X 8’ 8” handrail
2. 1 ½” End Cap
3. 1 ½” P-loop Return
4. 3” Mounting Bracket
5. Straight rail aluminum connector
6. Adjustable Angle aluminum connector
7. 5, 32 and 38 degree radius
8. Quick Return Brackets
9. Inside/Outside corner brackets

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are properly prepared to receive installation of guardrails.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not begin until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install handrail and accessories according to applicable manufacturer’s instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects.

C. Install railings using manufacturer’s supplied mounts, fasteners, and hardware.

D. Structural post mounts shall be attached to concrete surfaces or wood structure using hardware recommended by local building codes, engineers, or architects.

E. Install caps with appropriate PVC Adhesive.

3.2 CLEANING

A. Clean railing promptly after installation in accordance with manufacturer's instructions.

B. Remove labels and temporary protective coverings.

C. Do not use harsh cleaning material or methods that could damage finish.

D. Remove construction debris from project site and legally dispose of debris.

END OF SECTION