SECTION 062020
EXTERIOR PVC RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and other Contract Documents, listed in the agreement between the Owner and Contractor, apply to this Section.

1.2 SUMMARY
   A. Section Includes:
      1. Exterior PVC railings.

1.3 ACTION SUBMITTALS
   A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, and colors and include construction and application details.
   B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
   C. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.
   D. Samples for Verification:
      1. For cellular PVC railing components, with half of exposed surface finished; 50 sq. in.
   E. Delegated-Design Submittal: For railing systems, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS
   A. Evaluation Reports: For the following, from ICC-ES:
      1. Cellular PVC.
   B. Warranties: Provide sample warranties.

1.5 QUALITY ASSURANCE
   A. Engineer PVC railing system to withstand design loads indicated on Drawings.
1.6 DELIVERY, STORAGE, AND HANDLING
   A. Store materials flat with spacers between bundles to provide air circulation. Protect materials with waterproof covering.
   B. Do not store packaging materials in direct sunlight to prevent heat build up.

1.7 FIELD CONDITIONS
   A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed.
   B. Do not install PVC materials that are damaged.

1.8 WARRANTY
   A. Manufacturer's Warranty for Cellular PVC Railings Systems: Manufacturer agrees to replace components that fail due to defects in manufacturing within specified warranty period.
      1. Warranty Period: Limited Lifetime Warranty. Refer to manufacturer’s website for details.

PART 2 - PRODUCTS

2.1 MANUFACTURER
   A. INTEX Millwork Solutions, LLC; 20 Bogden Blvd., Millville, NJ 08332; Tel: (856) 293-4100, Fax: (856) 293-4102.

2.2 HAMPTON EXTRUDED RAIL SYSTEM
   A. Cellular PVC: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized, rigid material.
      1. Basis of Design Product: Subject to compliance with requirements, provide the following: Intex Millwork Solutions; Hampton Extruded Rail System.
   B. Top Rail Base: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.
   C. Bottom Rail: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.
   D. Aluminum Reinforcing Insert: 1 inch high by 1-3/4 inch wide 6063-T5 extruded aluminum “C” section (0.12 inch thick web; 0.06 inch thick flanges) with four raceway channels running the entire length. Used in top and bottom rail of all systems.
   E. Balusters: Model # RS40BAL-42. 1-1/4 in square extruded rigid cellular PVC pickets.
F. Newel Caps and Trim: Model # RS40PYCAP5 (Pyramidal cap), and #RS40BT5-WM75 (Base trim ring).

G. Decorative Panels: Manufacturer’s [standard] [custom] design.

H. Support Block: 1-1/4 in square extruded rigid cellular PVC picket cut to length and secured to the underside of the bottom rail.

I. Rail to Post Connection: Manufacturer’s standard.

J. Support Post: Preservative-treated wood (Southern Pine) 4 by 4 inches.

2.3 DARTMOUTH EXTRUDED RAIL SYSTEM

A. Cellular PVC: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized, rigid material.

1. Basis of Design Product: Subject to compliance with requirements, provide the following: Intex Millwork Solutions; Dartmouth Extruded Rail System.

B. Top Rail Base: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

C. Bottom Rail: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

D. Aluminum Reinforcing Insert: 1 inch high by 1-3/4 inch wide 6063-T5 extruded aluminum “C” section (0.12 inch thick web; 0.06 in thick flanges) with four raceway channels running the entire length. Used in top and bottom rail of all systems.

E. Balusters: Model # RS40BAL-42. 1-1/4 in square extruded rigid cellular PVC pickets.

F. Newel Caps and Trim: Model # RS40PYCAP5 (Pyramidal cap), and #RS40BT5-WM75 (Base trim ring).

G. Decorative Panels: Manufacturer’s [standard] [custom] design.

H. Column Wraps: Manufacturer’s “Flat Panel” in height and width as indicated on Drawings.

I. Support Block: 1-1/4 in square extruded rigid cellular PVC picket cut to length and secured to the underside of the bottom rail.

J. Rail to Post Connection: Manufacturer’s standard.

K. Support Post: Preservative-treated wood (Southern Pine) 4 by 4 inches.

2.4 LIBERTY EXTRUDED RAIL SYSTEM

A. Cellular PVC: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized, rigid material.
1. Basis of Design Product: Subject to compliance with requirements, provide the following: Intex Millwork Solutions; Dartmouth Extruded Rail System.

B. Top Rail Base: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

C. Bottom Rail: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

D. Aluminum Reinforcing Insert: 1 inch high by 1-3/4 inch wide 6063-T5 extruded aluminum “C” section (0.12 inch thick web; 0.06 in thick flanges) with four raceway channels running the entire length. Used in top and bottom rail of all systems.

E. Balusters: Model # RS40BAL-42. 1-1/4 in square extruded rigid cellular PVC pickets.

F. Newel Caps and Trim: Model # RS40PYCAP5 (Pyramidal cap), and #RS40BT5-WM75 (Base trim ring).

G. Decorative Panels: Manufacturer’s [standard] [custom] design.

H. Column Wraps: Manufacturer’s “Flat Panel” in height and width as indicated on Drawings.

I. Support Block: 1-1/4 in square extruded rigid cellular PVC picket cut to length and secured to the underside of the bottom rail.

J. Rail to Post Connection: Manufacturer’s standard.

K. Support Post: Preservative-treated wood (Southern Pine) 4 by 4 inches.

2.5 NAUTILUS MILLED RAIL SYSTEM

A. Cellular PVC: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized, rigid material.

1. Basis of Design Product: Subject to compliance with requirements, provide the following: Intex Millwork Solutions; Nautilus Milled Rail System.

B. Top Rail Base: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

C. Bottom Rail: 1-1/2 inch high by 2-15/16 inch wide extruded rigid cellular PVC contoured rail profile.

D. Aluminum Reinforcing Insert: 1 inch high by 1-3/4 inch wide 6063-T5 extruded aluminum “C” section (0.12 inch thick web; 0.06 in thick flanges) with four raceway channels running the entire length. Used in top and bottom rail of all systems.

E. Balusters: Model # RS40BAL-42. 1-1/4 in square extruded rigid cellular PVC pickets.

F. Newel Caps and Trim: Model # RS40PYCAP5 (Pyramidal cap), and #RS40BT5-WM75 (Base trim ring).
G. Decorative Panels: Manufacturer’s [standard] [custom] design.

H. Column Wraps: Manufacturer’s “Flat Panel” in height and width as indicated on Drawings.

I. Support Block: 1-1/4 in square extruded rigid cellular PVC picket cut to length and secured to the underside of the bottom rail.

J. Rail to Post Connection: Manufacturer’s standard.

K. Support Post: Preservative-treated wood (Southern Pine) 4 by 4 inches.

2.6 MISCELLANEOUS MATERIALS

A. Fasteners for PVC Railing Components: Provide manufacturer’s recommended fasteners.

1. (A) Rail Bracket Screws: #8 x 1-1/4 inches Flat Head Square Drive.
2. (B) Rail Attachment Screws: #10 x 3 inches Slot Hex Washer Head.
3. Top Rail Cap Attachment Screws:
   a. (C) #8 x 1-3/4 inches Flat Head Square Drive (RS40 Flat Cap ONLY).
   b. (D) #8 x 2-1/4 inches Flat Head Square Drive (RS40 Peaked Cap ONLY).
4. (E) Baluster Screws: #8 x 2-1/2 inches Flat Head Square Drive.
5. (F) Baluster Lock Screws: #8 x 1-1/2 inches Flat Head Square Drive.
6. (G) Rail Attachment Screws: #12 x 4 inches Slot Hex Washer Head. For level sections greater than 8 ft. long and all stair rails.

B. Adhesive for Cellular PVC: Product recommended by manufacturer.

C. Sealants: Type as recommended by manufacturer and complying with ASTM C 834 and with applicable requirements in Division 07 Section "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine PVC materials before installation. Reject materials that are damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.
3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound or warped.
   1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials.
   1. Scribe and cut PVC components to fit adjoining work.
   2. Coordinate PVC components with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 INSTALLATION - GENERAL

A. Install PVC railing systems in strict accordance with manufacturer’s written installation instructions, and detailed shop drawings.

B. Refer to manufacturer’s website for latest information and installation videos.

3.5 ADJUSTING

A. Replace PVC components that is damaged or does not comply with requirements. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean exposed and semiexposed PVC surfaces.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace PVC materials that are damaged.

END OF SECTION