

# BLACKLINEHHP TECHNICAL SPECIFICATION SHEET

## Section 02826 - Black Colored Ornamental Fence & Railing

### PART 1 – GENERAL

#### 1.01 General Description

This specification covers the manufacture and installation of black fence and railing systems for use in residential, commercial, institutional and industrial settings where the appearance of ornamental wrought iron and the low maintenance qualities of vinyl are required. The systems shall meet all the applicable building codes.

#### 1.02 Scope of Work

A. Installation of fence sections, railings, fence posts, and caps.

B. Installation of gates and related hardware C. Handrails

#### 1.03 Related Work

- A. Concrete
- B. Cleanup
- C. Handrails

#### 1.04 Quality Assurance

- A. Manufacturer's Quality Assurance Procedures Manual.
- B. Installation shall be by a manufacturer's licensed distributor/installer.

#### 1.05 References (ASTM Standards)

Specific Gravity	ASTM D792
Tensile Strength	ASTM D638
Tensile Modulus	ASTM D638
Elongation	ASTM D638
Flexural Modulus	ASTM D790
Rockwell Hardness	ASTM D785
Izod Notched Impact Strength	ASTM D256
Heat Distortion Temperature	ASTM D648
Coefficient Of Linear Thermal Expansion	ASTM D696

#### 1.06 Submittals

- A. Installer shall submit layout drawings and product data.
- B. Installer shall submit product samples as requested below.
- C. Installer shall submit manufacturer's instructions for fence and gate installation.

#### 1.07 Product Delivery and Storage

- A. Installer shall inspect the product for damage upon delivery to the job site and make appropriate arrangements to replace damaged material.
- B. Product shall be stored flat on the shipping pallets in an area free of construction traffic and high heat surfaces.
- C. Product shall not be unwrapped or unstrapped prior to installation. Product shall not be stood on end and leaned against walls or other structures.

#### 1.08 Warranty

BlacklineHHP warrants its products to be free from defective workmanship and materials, when subject to proper and normal use: it is further warranted against peeling, flaking, rusting, blistering and abnormal weathering. See warranties for specific details.

### PART 2 – PRODUCTS

#### 2.01 Manufacturers

- A. BlacklineHHP, LLC  
1325 Marietta Ave.  
Bellingham, WA 98226  
(360) 398-1824  
www.blacklinehhp.com

#### 2.02 Vinyl Product Production

- A. All profiles shall be extruded using dies designed internally and externally to be the same size and shape as the finished product.
- B. Profiles are only available in black.
- C. Single material profiles and the capstock of mono extruded profiles are formulated.
- D. Extruded vinyl components shall have the ability to resist weather degradation. The color change index ( $\Delta E$ ) shall be less than 3.5 after 2400 hours when tested by the Xenon Arc Lamp apparatus under controlled conditions similar to SAE J1960.
- E. Components of the Rigid Vinyl compound shall not exceed the limits shown:

Polyvinyl chloride resin	45 wt% max.
Carbon black	4 wt% max.
Calcium carbonate	8 wt% max.
Proprietary ingredients	43 wt% max.
- F. Furnished components shall conform to the following minimum properties measured in accordance with the referenced ASTM specification:

Specific Gravity	1.400±.02
Ash Contents (%)	10%±3%
Heat Distortion temp. (°C)	>80°C
Coefficient of Linear Thermal Expansion	< 50 x10 <sup>-6</sup> in/in °C
Rockwell Hardness	>105 on R-Scale
Tensile Strength	> 6,500 psi
Tensile Modulus	> 390,000 psi
Elongation (%)	> 100%
Flexural Modulus	> 400,000 psi
Izod Impact Strength	> 7 ft-lb/in@73.4±3.6°F
Flash Point	> 736°F
Autoignition Temperature	> 849°F
Cell Classification (ASTMD4216)	143343310122

#### 2.03 Vinyl Components

- A. Posts:
  - 1. 5" x 5" Post (0.140 Wall)
  - 2. 4" x 4" Post (0.125 Wall)
  - 3. 3" x 3" Post (0.140 Wall)
- B. Rails:
  - 1. 2" x 2 ½" Rail (0.130 Wall)
  - 2. 2" x 3 1/2" Rail (0.130 Wall)
  - 3. 1 ½" x 5 ½" Ribbed Rail (0.125 Wall)
- C. Pickets:
  - 1. 1" x 1" Picket (0.105 Wall)
  - 2. 7/8" x 3" Picket (0.060 Wall)
  - 3. 7/8" x 6" Picket (0.060 Wall)
- D. Picket Caps: The installer shall submit catalog cuts of the manufacturer's full line of picket caps for the architect's selection.
- E. Post Caps: The installer shall submit catalog cuts of the manufacturer's full line of picket caps for the architect's selection.
- F. Gates: Residential gates shall be made to match the rail selection and the various gate widths and heights shown on the drawings. The installer shall submit shop fabrication details prior to fabricating gates.

#### 2.04 Aluminum Components

- A. Aluminum components shall be extruded to the manufacturer's design profile with 6063 alloy and annealed to T-6 requirements.
- B. Aluminum Inserts (inserts shall be installed in bottom rails only, unless specified otherwise):
  - 1. 1.40"x1.70" Guard Rail Stiffener at 0.72 lb/ft
  - 2. 1.66"x2.16" Guard Rail Stiffener at 0.79 lb/ft
  - 3. 1.40" x 1.70" Fence Stiffener at 0.44 lb/ft

- 4. 1.66" x 2.16" Fence Stiffener at 0.66 lb/ft
- 5. 4" x 4" Gate Post Insert at 1.28 lb/ft
- 6. 5" x 5" Gate Post Insert at 1.07 lb/ft

#### 2.05 Galvanized Steel Components

- A. All galvanized components shall be 14 gage material.
- B. Galvanized inserts (Inserts shall be installed in 3" x 3" Posts, unless specified otherwise):
  - 1. 3"x3" Gate and Line Post Stiffener

**2.06 Aluminum Inserts Applications:** Aluminum guardrail stiffeners or post inserts shall be used for industrial applications, or other applications where specified and shall be installed in accordance to the manufacturer's recommendations. The installer is referred to the manufacturer's approved shop drawings for all approved applications.

**2.07 Galvanized Inserts Applications:** Galvanized post or rail inserts shall be used for commercial applications and shall be installed in accordance to the manufacturer's recommendations. The installer is referred to the manufacturer's approved shop drawings for all approved applications.

**2.08 Fence Assembly Capacity:** Fence bottom rail shall be provided with an aluminum insert to support the dead weight of the vinyl assembly. Insert shall not buckle or suffer permanent deformation under the following and vertical loads:

Vinyl Railing	Spacing	Load (1)	Load (2)	Load (3)	Load (4)
2" x 2½"	8'	200	400	240	480
2" x 2½"	6'	270	540	325	650

Load (1) Capacities shown are for aluminum fence stiffener in the bottom rail only.

Load (2) Capacities shown are for aluminum fence stiffener in the top and bottom rail

Load (3) Capacities shown are for aluminum guard rail stiffener in the bottom rail only.

Load (4) Capacities shown are for aluminum guard rail stiffener in the top and bottom rail.

### PART 3 – EXECUTION

#### 3.01 Storage and Handling

- A. Store product on pallets off the ground and lying flat.
- B. Do not unwrap product until ready to install.

**3.02 Installation:** Install fence and gates in the locations shown on the drawings and in accordance with manufacturer's instructions and recommendations.

#### 3.03 Clean up:

- A. Installed rail shall be wiped down and all scuffmarks shall be buffed out to produce a uniform appearance as detailed in the manufacturer's installation specifications prior to acceptance of the installation.
- B. Installer shall remove all component packing material and related installation debris.