Full Fencing Solutions

Master Halco distributes a broad range of fencing solutions for commercial and residential applications, including:

- Chain-link
- Ornamental fence (steel and aluminum)
- Welded wire
- Wood
- PVC
- Composite

For more information about Master Halco products and services, call 1.888.MH.FENCE toll-free or visit us online at www.FenceOnline.com.

Heritage & Commitment

Since 1961, Master Halco has grown to become the largest manufacturer and distributor of fencing materials in the world, servicing thousands of the best installers and retailers across the United States and Canada.
Monumental Iron Works

The Finest Ornamental Iron

Ornamental iron fences and gates have been the architectural choice for attractive security worldwide on public, commercial, industrial, and residential properties for hundreds of years. Monumental Iron Works’ fences and gates from Master Halco add beauty and security to properties throughout the country. Combining modern technology with traditional elegance and craftsmanship, Master Halco is able to offer a unique, modern ornamental solution with the look of fencing forged by the hands of master blacksmiths.

Monumental Iron Works fences and gates bring a combination of aesthetic elegance and security to residential, commercial, industrial, and institutional properties. Satisfy your architectural goals with a wide variety of options, designs, and styles crafted for outstanding value. The quality of our materials manufactured to our high specification requirements allow us to provide a durable, cost-effective fence system that will last for many years.

Crafted Elegance & Construction

Monumental Iron Works is a modular system, made up of many component parts designed to support each other. When completely assembled, these parts create one of the strongest ornamental fence systems on the market. Using industrial rivets, the constructed panels have the solid look and feel of authentic ornamental iron. Because there are no welds, red rust problems that typically destroy the integrity of other fence systems and detract from the beauty of ornamental designs are virtually eliminated. Also gone are the semi-annual maintenance costs associated with repainting a welded system. Monumental Iron Works utilizes a duplex coating of polyester resin over hot-dipped galvanized steel for corrosion protection, durability and a great appearance that lasts for years. A 15-Year Limited Warranty reinforces peace of mind in knowing you’ve selected the finest ornamental fence system available.

We offer a wide variety of modular products, including preassembled panels, gates, posts, finials, and tops in our standard black color. Select your Monumental Iron Works style and Master Halco will deliver the finest quality and highest value in ornamental picket fencing. Pre-assembled panels and matching gates are available in 2, 3 or 4 rail systems ranging in heights from 3 feet to 8 feet. Choose from the traditional Imperial Styles or the classic Estate Styles. Monumental Iron Works ornamental picket fences and gates complement any architectural design and provide elegance, distinction, and security.

Top 3 Reasons to Buy Monumental Iron Works

1. In-Stock
   - Ready for quick delivery to your local Master Halco distributor branch

2. Labor & Time Savings
   - Pre-assembled panels for faster installations
   - Patent pending Pro-Arc™ brackets adjust 30 degrees up/down/left/right for easy field installation tolerances

3. Low Maintenance
   - UV and weather resistant powder coating applied to individual pieces BEFORE assembly to better resist cracking, flaking and peeling at the panel’s pivot points associated with welded systems

1.1 SCOPE: This specification covers materials and construction requirements for Ornamental Picket Fence.

1.2 MATERIALS:

A. PICKETS: Galvanized square steel tubular members manufactured per ASTM A 787, having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft² (0.27 kg/M²). Space pickets 3-15/16” maximum (100 mm) face to face. The size and wall thickness are listed below.

<table>
<thead>
<tr>
<th>Size</th>
<th>Wall Thickness</th>
<th>Wgt. Per Ft²</th>
<th>Yield Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4” Sq.</td>
<td>16 ga.</td>
<td>0.580 lbs</td>
<td>45,000 psi</td>
</tr>
</tbody>
</table>

B. RAILS: 1-1/2” (38 mm) x 1-3/8” (35 mm) x 1-1/2” (38 mm), 11 gauge (0.120” 3.05 mm) wall thickness steel “U” channel per ASTM A 653 having a 50,000 psi (344 Mpa) yield strength and G90 zinc coating 0.90 oz/ft² (0.27 kg/M²).

C. POSTS: Galvanized square steel tubular members manufactured per ASTM A 787 having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft². The size and wall thickness are listed below.

<table>
<thead>
<tr>
<th>Size</th>
<th>Wall Thickness</th>
<th>Wgt. Per Ft²</th>
<th>Yield Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2” Sq.</td>
<td>14 ga.</td>
<td>2.639 lbs</td>
<td>45,000 psi</td>
</tr>
<tr>
<td>3” Sq.</td>
<td>12 ga.</td>
<td>3.596 lbs</td>
<td>45,000 psi</td>
</tr>
<tr>
<td>4” Sq.</td>
<td>12 ga.</td>
<td>5.293 lbs</td>
<td>45,000 psi</td>
</tr>
</tbody>
</table>

D. RAIL BRACKETS: Die cast of zinc (ZAMAK #3 alloy) per ASTM B86-83Z 335.21. Ball and socket design capable of 30° swivel (up/down/left/right). Bracket to fully encapsulate rail end for complete security.

E. FINIALS (Estate F and G): Cast aluminum.

F. RINGS (Imperial D and D-Modified): Cast aluminum.

1.3 ASSEMBLY:

A. All panels are pre-assembled.

B. Rails are attached to posts by means of rail brackets. Rail brackets are attached to posts using a 1/4” bolt and lock nut. Rails are attached to brackets using 1/4” industrial drive rivets.

1.4 COATING: Monumental Iron Works utilizes a duplex coating system of polyester resin over hot-dipped galvanized steel for maximum corrosion protection on all posts, pickets and rails. Fence sections are coated unassembled. (Coating of assembled sections is unacceptable).

All fence sections and components are given a 4-stage “Power Wash” pre-treatment process that cleans and prepares the metal substrate to assure complete adhesion of the powder coated finish.

Stage 1 - All metal substrate is CLEANED and PHOSPHATE treated simultaneously to form an AMORPHOUS STRUCTURE on the metal substrate for SUPERIOR POWDER COATING ADHESION.

Stage 2 - All metal substrate is given a thorough WATER RINSE to prepare the phosphate-coated metal substrate for the SEAL RINSE.

Stage 3 - All metal substrate is given a NON-CHROMATED seal for added corrosion protection and improved adhesion.

Stage 4 - All metal substrate is then baked dry, prior to the application of the POWDER COATING.

All metal substrate is given a polyester resin based powder coated finish applied by the electrostatic spray process to a minimum thickness of 2.5 (0.653 mm) mils. The polyester resin finish is cured in a 250 degree F (122°C) metal temperature for 20 minutes.

STANDARD COLOR - Black.

1.5 SPECIAL WARRANTY: Provide manufacturer’s standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of 15 years from date of purchase.

| Note: Weight Per Foot provided for reference only. |
Estate Gates (Cont.)

Estate K

- Single
- Double

Estate L

- Single
- Double

Partial List of MIW Installation Sites

Colleges and Universities:
- Yale University
- Harvard University
- Stanford University
- Drexel University
- Johns Hopkins University
- West Point
- Air Force Academy
- Georgia Tech
- University of Alabama
- University of Maryland
- University of Pennsylvania
- University of Toledo
- Old Dominion University
- William & Mary College
- Holyoke College

Municipal and Government Projects:
- FBI Headquarters
- Social Security Administration
- U.S. Post Office
- Library of Congress
- National Arboretum
- World Trade Center, Baltimore
- Federal Hill Park
- Chicago Parks
- Oriole Park at Camden Yards
- V.A. Cemeteries
- Philadelphia Naval Yards
- Aberdeen Proving Grounds
- HUD Housing Projects
- JFK Airport
- Philadelphia Airport
- Newark Airport
- Tampa Airport

Estate Properties:
- Custom Built Homes
- Executive Homes
- Residential Homes

Other Institutions:
- The Church of Jesus Christ of Latter Day Saints
- Cleveland Plain Dealer
- Baltimore Sun News Papers
- Glaxo
- Eli Lilly
- Ameriflora
- Max and Erma’s Restaurants
- Marion Merrel Dow

Shown: Imperial D Modified style with ball post caps and two single arch gates

Shown: Estate F style with quad-flair finials and ball post caps

Shown: Imperial D Modified style with flat post caps
Superior Construction & Strength

A leading university’s independent lab tested our fence’s strength. They found, before failure, we held up to:
- 2,022 lbs. of vertical download
- 1,021 lbs. of horizontal load

Industrial Drive Rivets

To increase panel strength, industrial drive rivets with 1,100 lbs. of holding power and 1,500 lbs. of sheer strength fasten each picket to the rails giving the system the solid look and feel of traditional ornamental iron. Fastening each picket to the rails creates an integral structure that provides fixed-point loading and spreads any vertical or horizontal force over the entire section. This avoids the possible drawbacks of welding, such as weakened metal that can cause pickets to tear away from the rails or the burn-off of galvanized coating which can lead to rust.

Coating

A duplex coating of polyester resin over hot-dipped galvanized steel ensures a long, low-maintenance life. Coating before assembly-instead of after-provides an even, smooth finish that resists cracking, flaking and peeling at the panel’s pivot points. This gives a full measure of protection in the areas where moisture accumulates and rust begins.

Pro-Arc™ Brackets

The patented bracket fastens panels to the posts using a bolt-thru design for added strength and security. By swiveling 30° in any direction it allows for grade and layout changes. The fully enclosed bracket is very user-friendly allowing for field installation tolerances while providing a finished look from unsightly rail cuts, short sections, and biased panels.
Pickets
Steel pickets are 3/4 inch square and have a 16 gauge wall thickness. Every fence panel has nineteen pickets and each picket is riveted to the rail for maximum strength. For design flexibility and to customize your fence, choose from three picket tops.

Posts
Factory pre-drilled mounting holes permit fast field installation while maintaining the integrity of the powder-coated finish. Steel posts are available in several sizes for almost any application. Posts can be flange-mounted on walls and concrete pads, or set into sleeves.

Rails
Exceptionally strong, polyester coated 11 gauge 1-1/2 inch x 1-3/8 inch x 8 foot galvanized steel “U” rails hold up in high traffic areas. The self-draining “U” design prevents moisture from collecting, offering maximum protection against rust. Pre-punched slotted rail holes allow for speedy alignment and easy rivet attachment of the rail to the Pro-Arc bracket.

Configurations & Options

Picket Tops
Choose from Flush Top, Picket Top or Spear Top pickets.

Post Caps
Choose from Flat, Ball or Acorn.

Posts
Available in 2-1/2”, 3” and 4” square.

Color
Black
The design of our Imperial style is based on traditional iron picket fences dating back to 1892. Long accepted as an outstanding value because of their quality construction, durability, numerous options and affordable pricing, Imperial fences and gates by Monumental Iron Works® provide an exceptional ornamental picket fence system where elegant simplicity is desired. With pickets spaced 3-15/16 inches apart, Monumental Iron Works fences offer a high degree of security while preserving the practicality and charm of a traditional picket fence. Imperial style is an ideal choice where a combination of strength and classic appearance is desired.
The design of our Imperial style is based on traditional iron picket fences dating back to 1892. Long accepted as an outstanding value because of their quality construction, durability, numerous options and affordable pricing, Imperial fences and gates by Monumental Iron Works® provide an exceptional ornamental picket fence system where elegant simplicity is desired. With pickets spaced 3-15/16 inches apart, Monumental Iron Works fences offer a high degree of security while preserving the practicality and charm of a traditional picket fence. Imperial style is an ideal choice where a combination of strength and classic appearance is desired.

Shown: Imperial D-Modified style with ball post caps

Imperial Style Panels and Gates

Imperial A

Imperial A

Imperial B

Imperial B

Imperial D

Imperial D

Imperial D-Modified

Imperial D-Modified

Imperial D

Imperial D

Imperial D

Imperial D

Imperial A

Single

Double

Single

Double

Single

Double

Single

Double
Pickets
Steel pickets are 3/4 inch square and have a 16 gauge wall thickness. Every fence panel has nineteen pickets and each picket is riveted to the rail for maximum strength. For design flexibility and to customize your fence, choose from three picket tops.

Posts
Factory pre-drilled mounting holes permit fast field installation while maintaining the integrity of the powder-coated finish. Steel posts are available in several sizes for almost any application. Posts can be flange-mounted on walls and concrete pads, or set into sleeves.

Rails
Exceptionally strong, polyester coated 11 gauge 1-1/2 inch x 1-3/8 inch x 8 foot galvanized steel “U” rails hold up in high traffic areas. The self-draining “U” design prevents moisture from collecting, offering maximum protection against rust. Pre-punched slotted rail holes allow for speedy alignment and easy rivet attachment of the rail to the Pro-Arc bracket.

Configurations & Options

Estate A and B
Monumental Iron Works® Estate style with spear top pickets are reminiscent of very early English and European ironwork. The style is contemporary in design and noted for its spear like appearance. The spear top pickets add attractive security and distinction to any architectural design.

Estate F and G
Estate style with finial top options is one of the more ornate styles offered by Monumental Iron Works. The three distinctively ornate finials, triad, quad-flair and fleur-de-lis, add old world charm and dignity to any property.

Estate K and L
Estate style with picket top is the most contemporary and classic look offered in the Estate series.

Good looking and long lasting, these styles will enhance the beauty and value of any property. Every Monumental Iron Works fence provides lasting beauty and performance. All components are engineered for strength, security and low maintenance.

Shown: Estate F style with triad finials and acorn post caps

Picket Tops
Choose from Flush Top, Picket Top or Spear Top pickets.

Finials
Choose from Triad, Quad-Flair or Fleur-de-lis finials.

Posts
Available in 2-1/2”, 3” and 4” square.

Color
Black

Shown: Estate F style with triad finials and acorn post caps
The patented bracket fastens panels to the posts using a bolt-thru design for added strength and security. By swiveling 30° in any direction it allows for grade and layout changes. The fully enclosed bracket is very user-friendly allowing for field installation tolerances while providing a finished look from unsightly rail cuts, short sections, and biased panels.

**Superior Construction & Strength**

Snap-lock cap fully encloses rail for a professional look

Pro-Arc™ Brackets

The patented bracket fastens panels to the posts using a bolt-thru design for added strength and security. By swiveling 30° in any direction it allows for grade and layout changes. The fully enclosed bracket is very user-friendly allowing for field installation tolerances while providing a finished look from unsightly rail cuts, short sections, and biased panels.

A leading university’s independent lab tested our fence’s strength. They found, before failure, we held up to:

- 2,022 lbs. of vertical download
- 1,021 lbs. of horizontal load

Industrial Drive Rivets

To increase panel strength, industrial drive rivets with 1,100 lbs. of holding power and 1,500 lbs. of sheer strength fasten each picket to the rails giving the system the solid look and feel of traditional ornamental iron. Fastening each picket to the rails creates an integral structure that provides fixed-point loading and spreads any vertical or horizontal force over the entire section. This avoids the possible drawbacks of welding, such as weakened metal that can cause pickets to tear away from the rails or the burn-off of galvanized coating which can lead to rust.

Coating

A duplex coating of polyester resin over hot-dipped galvanized steel ensures a long, low-maintenance life. Coating before assembly-instead of after-provides an even, smooth finish that resists cracking, flaking and peeling at the panel’s pivot points. This gives a full measure of protection in the areas where moisture accumulates and rust begins.

**Estate A**

**Estate B**

**Estate F**

**Estate G**

**Installation**

All posts and rails are pre-drilled for fast, user-friendly assembly and installation. This also reduces the chance of errors that result from drilling holes during field installation.
Estate Gates (Cont.)

Partial List of MIW Installation Sites

Colleges and Universities:
- Yale University
- Harvard University
- Stanford University
- Drexel University
- Johns Hopkins University
- West Point
- Air Force Academy
- Georgia Tech
- University of Alabama
- University of Maryland
- University of Pennsylvania
- University of Toledo
- Old Dominion University
- William & Mary College
- Holyoke College

Municipal and Government Projects:
- FBI Headquarters
- Social Security Administration
- U.S. Post Office
- Library of Congress
- National Arboretum
- World Trade Center, Baltimore
- Federal Hill Park
- Chicago Parks
- Oriole Park at Camden Yards
- V.A. Cemeteries
- Philadelphia Naval Yard
- Aberdeen Proving Grounds
- HUD Housing Projects
- JFK Airport
- Philadelphia Airport
- Newark Airport
- Tampa Airport

Estate Properties:
- Custom Built Homes
- Executive Homes
- Residential Homes

Other Institutions:
- The Church of Jesus Christ of Latter Day Saints
- Cleveland Plain Dealer
- Baltimore Sun News Papers
- Glaxo
- Eli Lilly
- Ameriflora
- Max and Erma’s Restaurants
- Marion Merrel Dow
Monumental Iron Works

The Finest Ornamental Iron

Ornamental iron fences and gates have been the architectural choice for attractive security worldwide on public, commercial, industrial, and residential properties for hundreds of years. Monumental Iron Works® fences and gates from Master Halco add beauty and security to properties throughout the country. Combining modern technology with traditional elegance and craftsmanship, Master Halco is able to offer a unique, modern ornamental solution with the look of fencing forged by the hands of master blacksmiths.

Monumental Iron Works fences and gates bring a combination of aesthetic elegance and security to residential, commercial, industrial, and institutional properties. Satisfy your architectural goals with a wide variety of options, designs, and styles crafted for outstanding value. The quality of our materials manufactured to our high specification requirements allow us to provide a durable, cost-effective fence system that will last for many years.

Crafted Elegance & Construction

Monumental Iron Works is a modular system, made up of many component parts designed to support each other. When completely assembled, these parts create one of the strongest ornamental fence systems on the market. Using industrial rivets, the constructed panels have the solid look and feel of authentic ornamental iron. Because there are no welds, rust problems that typically destroy the integrity of other fence systems and detract from the beauty of ornamental designs are virtually eliminated. Also gone are the semi-annual maintenance costs associated with repainting a welded system. Monumental Iron Works utilizes a duplex coating of polyester resin over hot-dip galvanized steel for corrosion protection, durability and a great appearance that lasts for years. A 15-Year Limited Warranty reinforces peace of mind in knowing you’ve selected the finest ornamental fence system available.

We offer a wide variety of modular products, including preassembled panels, gates, posts, finials, and tops in our standard black color. Select your Monumental Iron Works style and Master Halco will deliver the finest quality and highest value in ornamental picket fencing. Pre-assembled panels and matching gates are available in 2, 3 or 4 rail systems ranging in heights from 3 feet to 8 feet. Choose from the traditional Imperial Styles or the classic Estate Styles. Monumental Iron Works ornamental picket fences and gates complement any architectural design and provide elegance, distinction, and security.

Basic Specifications

1.1 SCOPE: This specification covers materials and construction requirements for Ornamental Picket Fence.

1.2 MATERIALS:

A. PICKETS: Galvanized square steel tubular members manufactured per ASTM A 787, having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft² (0.27 kg/M²). Space pickets 3-15/16” maximum (100 mm) face to face. The size and wall thickness are listed below:

<table>
<thead>
<tr>
<th>SIZE</th>
<th>WALL THICKNESS</th>
<th>WTG. PER FT.</th>
<th>YIELD STRENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot; Sq.</td>
<td>16 ga.</td>
<td>0.580 lbs.</td>
<td>45,000 psi</td>
</tr>
<tr>
<td>1&quot; Sq.</td>
<td>12 ga.</td>
<td>4.980 lbs.</td>
<td>50,000 psi</td>
</tr>
<tr>
<td>1-1/2&quot; Sq.</td>
<td>14 ga.</td>
<td>7.140 lbs.</td>
<td>55,000 psi</td>
</tr>
<tr>
<td>2&quot; Sq.</td>
<td>12 ga.</td>
<td>10.800 lbs.</td>
<td>45,000 psi</td>
</tr>
</tbody>
</table>

B. RAILS: 1-1/2" (38 mm) x 1-3/8" (35 mm) x 1-1/2" (38 mm), 11 gauge (0.120” 3.05 mm) wall thickness steel "U" channel per ASTM A 653 having a 50,000 psi (344 Mpa) yield strength and G90 zinc coating 0.90 oz/ft² (0.27 kg/M²).

C. POSTS: Galvanized square steel tubular members manufactured per ASTM A 787 having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft². The size and wall thickness are listed below:

<table>
<thead>
<tr>
<th>SIZE</th>
<th>WALL THICKNESS</th>
<th>WTG. PER FT.</th>
<th>YIELD STRENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2&quot; Sq.</td>
<td>14 ga.</td>
<td>2.639 lbs.</td>
<td>45,000 psi</td>
</tr>
<tr>
<td>3&quot; Sq.</td>
<td>12 ga.</td>
<td>3.956 lbs.</td>
<td>45,000 psi</td>
</tr>
<tr>
<td>4&quot; Sq.</td>
<td>12 ga.</td>
<td>5.293 lbs.</td>
<td>45,000 psi</td>
</tr>
</tbody>
</table>

D. RAIL BRACKETS: Die cast of zinc (ZAMAK 3 alloy) per ASTM B86-85Z 33521. Ball and socket design capable of 30° swivel (up/down/left/right). Bracket to fully encapsulate rail end for complete security.

E. FINIALS (Estate F and G): Cast aluminum.

F. RINGS (Imperial D and D-Modified): Cast aluminum.

1.3 ASSEMBLY:

A. All panels are pre-assembled.

B. Rails are attached to posts by means of rail brackets. Rail brackets are attached to posts using a 1/4" bolt and lock nut. Rails are attached to brackets using 1/4" industrial drive rivets.

1.4 COATING: Monumental Iron Works utilizes a duplex coating system of polyester resin over hot-dipped galvanized steel for maximum corrosion protection on all posts, pickets and rails. Fence sections are coated unassembled. (Coating of assembled sections is unacceptable).

All fence sections and components are given a 4-stage "Power Wash" pretreatment process that cleans and prepares the metal substrate to assure complete adhesion of the powder coated finish.

Stage 1 - All metal substrate is CLEANED and PHOSPHATE treated simultaneously to form an AMORPHOUS STRUCTURE on the metal substrate for SUPERIOR POWDER COATING ADHESION.

Stage 2 - All metal substrate is given a thorough WATER RINSE to prepare the phosphate-coated metal substrate for the SEAL RINSE.

Stage 3 - All metal substrate is given a NON-CROMATED seal for added corrosion protection and improved adhesion.

Stage 4 - All metal substrate is then baked dry, prior to the application of the POWDER COATING.

All metal substrate is given a polyester resin based powder coated finish applied by the electrostatic spray process to a minimum thickness of 2.3 (0.655 mm) mils. The polyester resin finish is cured in a 250 degree F (122°C) metal temperature for 20 minutes.

STANDARD COLOR: Black.

1.5 SPECIAL WARRANTY: Provide manufacturer’s standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of 15 years from date of purchase.

Top 3 Reasons to Buy Monumental Iron Works

1. IN-STOCK - Ready for quick delivery to your local Master Halco distributor branch

2. LABOR & TIME SAVINGS - Pre-assembled panels for faster installations

3. LOW MAINTENANCE - UV and weather resistant powder coating applied to individual pieces BEFORE assembly to better resist cracking, flaking and peeling at the panel’s pivot points associated with welded systems

* Note: Weight Per Foot provided for reference only.
Full Fencing Solutions

Master Halco distributes a broad range of fencing solutions for commercial and residential applications, including:

- Chain-link
- Ornamental fence (steel and aluminum)
- Welded wire
- Wood
- PVC
- Composite

For more information about Master Halco products and services, call 1.888.MH.FENCE toll-free or visit us online at www.FenceOnline.com.

Heritage & Commitment

Since 1961, Master Halco has grown to become the largest manufacturer and distributor of fencing materials in the world, servicing thousands of the best installers and retailers across the United States and Canada.

Master Halco operates from locations across North America, with a vast network of distribution centers supported by our delivery fleet.