

Illusions[®]

Vinyl Railing System

Classic, Color, & Woodgrain Vinyl Railing Products



Check Out Our Aluminum Railing On Page 24!

Eastern
**Ornamental
RAILING**
EASTERNORNAMENTALRAILING.COM

CERTIFIED
ICC-ES AC174
2012 INTERNATIONAL RESIDENTIAL CODE (IRC)
2012 INTERNATIONAL BUILDING CODE (IBC)
1999 BOCA NATIONAL BUILDING CODE
Illusions[®] Vinyl Railing System™
meets the highest building
codes in the nation!



Why Illusions Vinyl Railing System?

Because Your Home Deserves the Very Best!

Why would you settle for less from your railing? You wouldn't. That's why the Illusions Vinyl Railing System® is the perfect fit for your next railing installation. It's got everything you need all rolled up into a simple and affordable package.

Part of the Eastern Fence Family, our company is based on Long Island, NY, and we have been manufacturing and distributing fence and railing products for almost 50 years. We're sure you've heard of the incredibly popular "Illusions Vinyl Fence" brand of color and woodgrain PVC vinyl fence products. Well the railings are great too! Nobody, but nobody has more PVC color and woodgrain PVC vinyl railing & fence options.

Designed with the sole purpose of allowing your creativity to flow, Illusions Vinyl Railing System, Grand Illusions Color Spectrum, and Grand Illusions Vinyl Woodbond Series of color and woodgrain vinyl products are the next step in the evolution of a product. Never before has this been done with such a grand degree of choices.

With 35 principle colors, completely authentic woodgrains, and the ability to match any color of your choosing, you now have the perfect solution for your deck and railing. The Grand Illusions Color Spectrum and Vinyl WoodBond Series both have a low gloss matte finish.

Imagine yourself painting your house tan with a plum trim and burgundy accents. Now you can Mix 'n' Match your Illusions Vinyl Railing with Burgundy Rails, Vintage Wine Posts and Tan Balusters. *The possibilities are endless!*

www.illusionsvinylrailing.com

FRONT COVER IMAGE: **VRFTG/8C-42** - 42" Height Colonial Spindle Picket, Flat T-Rail Top Rail and 2" x 3.5" Bottom Rail in Mahogany and Patio White balusters.
BACK COVER IMAGE: **VRTG/8-42** - 42" Height Traditional Picket 1.5" x 1.5", T-Rail Top Rail and 2" x 3.5" Bottom Rail in Classic Clay.



Illusions[®]

Vinyl Railing System

VRT6/8-3 - 3' Height Traditional Picket 1.5" x 1.5", T-Rail Top Rail and 2" x 3.5" Bottom Rail in Classic White with Majestic 8" x 8" Posts and custom New England Post Caps made from V88NE and V55CM caps. NOTE: The T-Rail X 8" Round Column Adaptor Kit (VRTRRAK) on the far right post.

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Why Illusions Vinyl Railing System?

From the tallest skyscraper to your front porch, Illusions Vinyl Railing System is the perfect choice for your next railing installation. Made of 100% Pure Virgin Vinyl, all styles are available in 35 colors and 5 wood grains.



Vinyl Manufacturer's Association Certified

Being a part of the VMA adds value to the fabricators, distributors, and contractors that become licensed to sell certified products by VMA members.



ICC-ES AC174 Certified

ICC-ES AC174 is the industry accepted criteria for recognition of compliance with the following building codes: 2012 International Residential Code (IRC), 2012 International Building Code (IBC), and 1999 BOCA National Building Code.



ASTM F964-13 Compliant

ASTM F964-13 is considered the most recognized testing specification for vinyl. The purpose of this specification is to establish a recognized standard of quality for exterior vinyl profiles for use in assembling agricultural, commercial, and residential fencing and railing.



Ready to Specify

All Illusions Vinyl Railing System styles are available on www.CADdetails.com to help you immediately specify for commercial and residential installations. Spec sheets, CAD files, PDFs and more are ready to help you get your Illusions Railings installed today!



Made in the U.S.A.

The company manufacturing Illusions Vinyl Railing System has been in the railing and fence manufacturing industry for almost 50 years. Illusions Railing is proudly manufactured in the United States of America.

www.illusionsvinylrailing.com

The Perfect Choice for Commercial Applications!



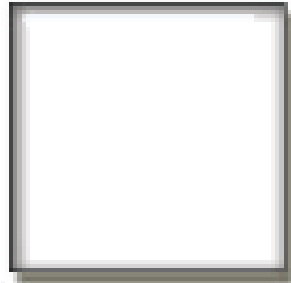
Illusions[®]
Vinyl Railing System

VR6/8-42 42" Height Traditional Picket 1.5" x 1.5", 2" x 3.5" Top and Bottom Rail.

GO COLOR OPTIONS

Classic Series

Looking for something simple and timeless? Check out your 4 Illusions "Classic" color options. White, Beige, Gray, and Clay.



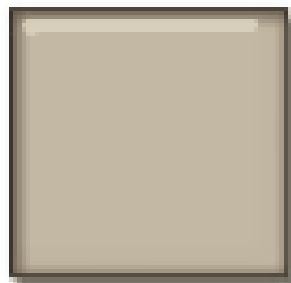
CLASSIC WHITE



CLASSIC BEIGE



CLASSIC GRAY



CLASSIC CLAY (NEW!)

ALL COLORS SHOWN ARE APPROXIMATE. SEE PHYSICAL SAMPLE FOR ACTUAL COLOR.



VRT6-3

3' high Traditional 1/2" x 1-1/2" baluster, T-Rail top rail and 2" x 3.5" bottom rail in 6' wide sections. Also shown, VRTRAK T-Rail x 8" round column adaptor kit. All in Classic White.



All Railing Styles are available in all Classic Series Colors

COLOR OPTIONS

Color Vinyl Railing!

All Illusions Railing Styles are available in ALL colors!

Grand Illusions Color Spectrum™ is the next evolution of a product. Choose from 32 different low gloss colors of vinyl railing. You can even Mix 'n' Match™ your colors to create incredible home accent matching railing installations.



Black



Brown



Hunter Green



Slate Gray

Grand Illusions Color Spectrum Color Vinyl Railing Colors

The above four colors are called “FOCUS COLORS.” They are considered some of the most popular styles in the catalog.

ALL COLORS SHOWN ARE APPROXIMATE. SEE PHYSICAL SAMPLE FOR ACTUAL COLOR.

- 32 Principal Color Choices
- Low Gloss Matte Finish
- Available in All Styles
- Mix 'n' Match™ Your Colors
- Sky2Blue™ Color Protection



VRT6-42 - 6' wide by 42" high Traditional baluster (1-1/2" x 1-1/2"), T-Rail top rail and 2" x 3.5" bottom rail in Hunter Green

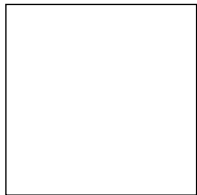


Endless Color Possibilities...

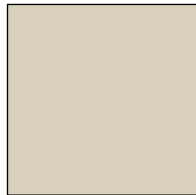
All of these beautiful low gloss Grand Illusions Color Spectrum colors are created to match common home accent colors. You can Mix 'n' Match™ them with any other Illusions colors as well. (These colors are not available through the QuickShip™ program. Ask your local dealer for delivery times.)

ALL STYLES AVAILABLE IN ALL COLORS.

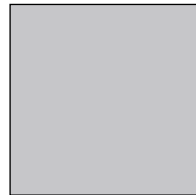
Colors shown are approximate. See physical sample for actual color.



Patio White



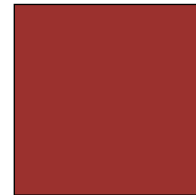
Tan



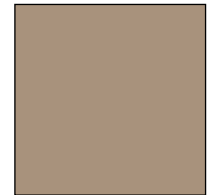
Seacoast Gray



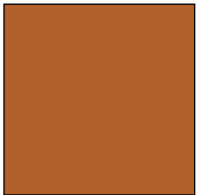
Eastern Green



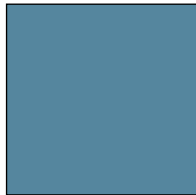
Barn Red



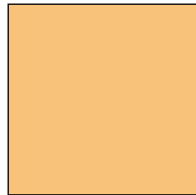
Adobe



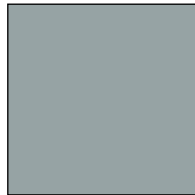
Autumn Orange



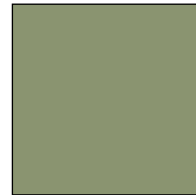
Federal Blue



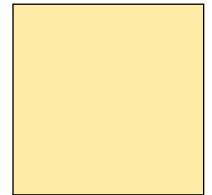
Colonial Yellow



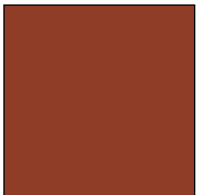
Millennium Gray



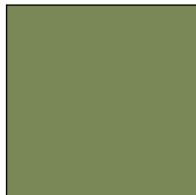
Evergreen



Sahara



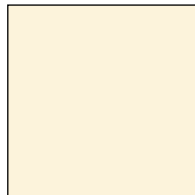
Brick Red



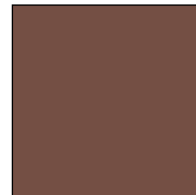
Olive



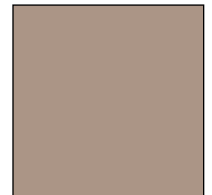
Burgundy



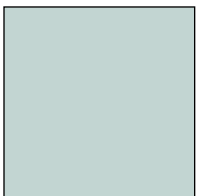
Antique White



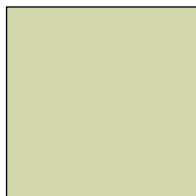
Brownstone



Prairie Dust



Sky Blue



Sage



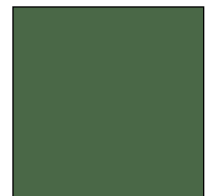
Midnight Blue



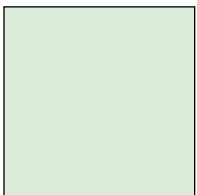
Atlantic Blue



Bordeaux



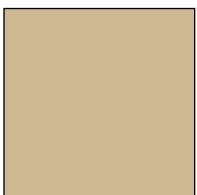
Forest Green



Seafoam Green



Vintage Wine



Desert Sand



Dark Royal Blue

Need a custom color?

Give us a swatch and we'll match it!

The *Grand Illusions Color Spectrum "Designer Series"* allows you to match any color. This creates limitless color possibilities for any railing application.



COLOR OPTIONS

GRAND ILLUSIONS



The Most Authentic Vinyl Woodgrain in the Railing Industry!

"No other product even comes close..."

With the unmatched detail of real wood and the low maintenance advantage of vinyl, you are sure to fall in love with Grand Illusions Vinyl Woodbond woodgrain vinyl railing. It looks just like 5 gorgeous flavors of pre-stained wood railing with a low gloss matte finish. Your friends will be knocking on it asking if it's real.

You can even Mix 'n' Match™ Grand Illusions Vinyl WoodBond with any other Grand Illusions colors or woodgrains to create your own unique fencing creations. No other product even comes close to this versatility.



Mahogany

Walnut

Rosewood

Eastern
White Cedar

Driftwood



Grand Illusions Vinyl WoodBond Grains Are Available in Both 2" x 3.5" Rail and Flat T-Rail Styles with Traditional 1-1/2" x 1-1/2" Balusters

ALL COLOR SWATCHES SHOWN ARE APPROXIMATE. SEE PHYSICAL SAMPLE FOR ACTUAL COLOR.

(ABOVE) Walnut VRFT6/8/10-36/42 - 36" or 42" high traditional baluster (1-1/2" x 1-1/2"), Flat T-Rail top rail and 2" x 3.5" bottom rail in 6', 8', or 10' wide assembled and/or knockdown (boxed) standard and stair rail sections.



Illusions[®]
Vinyl Railing System

www.IllusionsVinylRailing.com

TM

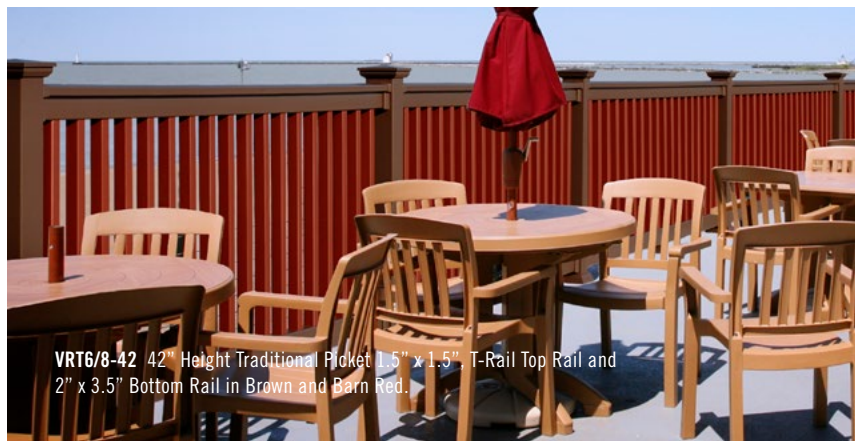
Adjustable
Brackets
Available!



VRT6/8C-42 42" Height Colonial Picket 1.5" x 1.5", T-Rail Top and 2" x 3.5" Bottom Rail with Rail Mounts Bracket T-Rail Adjustable Vertical (VRMTRAV) in Burgundy and Seacoast Gray.



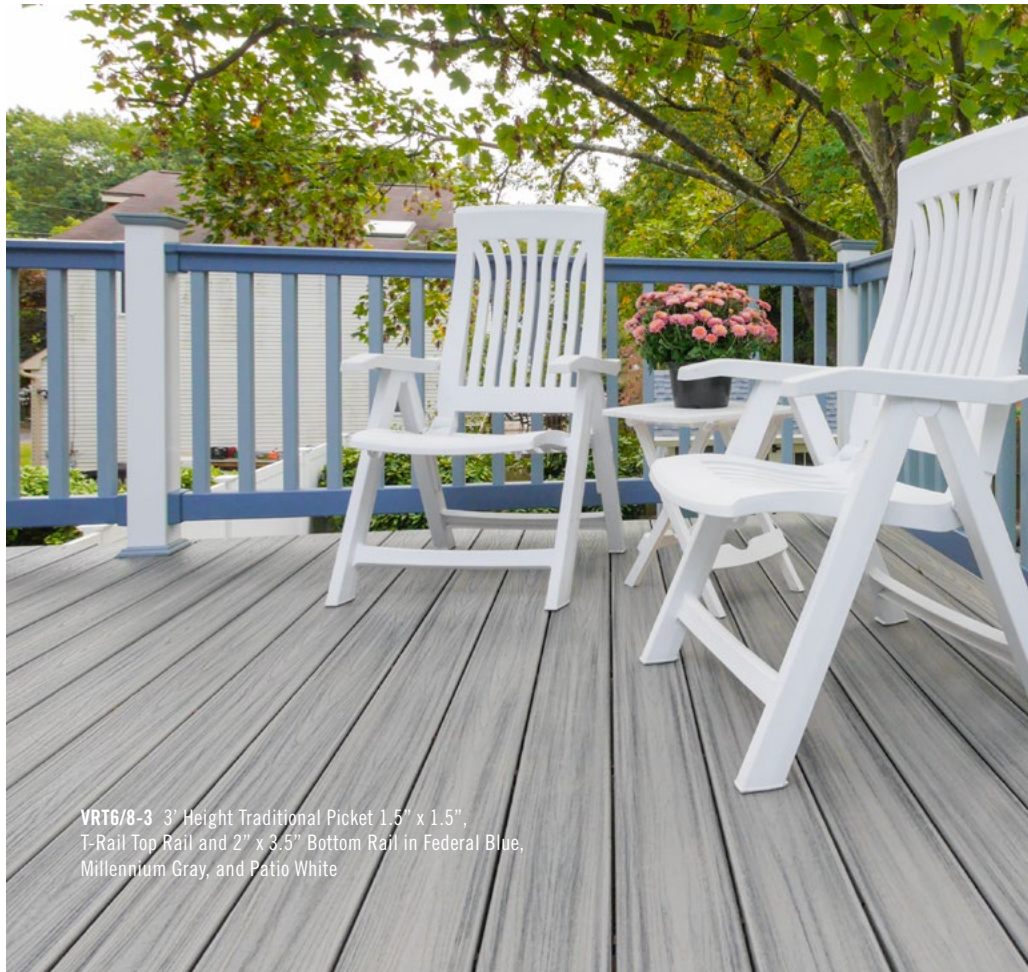
VR6/8-42 42" Height Traditional Picket 1.5" x 1.5", 2" x 3.5" Top and Bottom Rail.



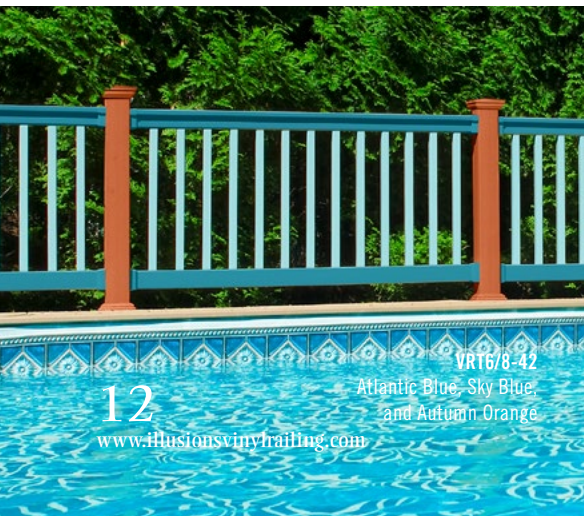
VRT6/8-42 42" Height Traditional Picket 1.5" x 1.5", T-Rail Top Rail and 2" x 3.5" Bottom Rail in Brown and Barn Red.



VR6/8C-3 3' Height Colonial Picket 1.5" x 1.5", 2" x 3.5" Top and Bottom Rail Classic White with Palace Solar Caps (V55P)



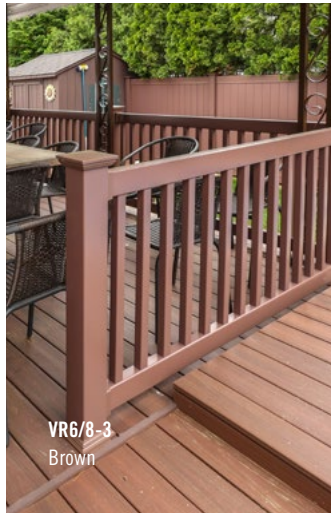
VRT6/8-3 3' Height Traditional Picket 1.5" x 1.5", T-Rail Top Rail and 2" x 3.5" Bottom Rail in Federal Blue, Millennium Gray, and Patio White



VRT6/8-42
Atlantic Blue, Sky Blue,
and Autumn Orange



VR6/8-42
Sahara
Autumn Orange
Vintage Wine



VR6/8-3
Brown



VRT6/8-42 42" Height Traditional Picket 1.5" x 1.5", T-Rail Top Rail and 2" x 3.5" Bottom Rail in Black and Patio White



VR6/8-42 42" Height Traditional Picket 1.5" x 1.5", 2" x 3.5" Top and Bottom Rail in Classic White with curved rails.

Custom
Curves
Available!

Illusions Vinyl Railing System

- 100% Pure Virgin Vinyl
- VMA Certified
- ICC-ES AC-174 Certified
- ASTM F964-13 Compliant
- Perfect for Residential and Commercial Applications
- Available in 35 Colors and 4 Woodgrains
- Meets the Highest Building Codes in the Nation
- Easy Installation

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Illusions[®]
Vinyl Railing System

VRT6/9C-3 3' Height Colonial Spindle Pickets, T-Rail Top Rail and 2" x 3.5" Bottom Rail in Black



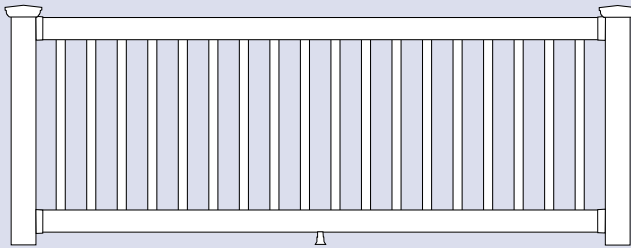
Railing Styles

“Commercial Strength With Residential Beauty”

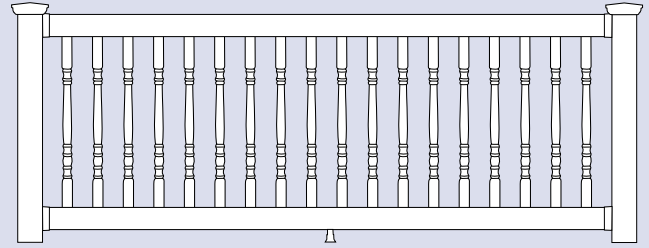
VR6/8-3 or VR6/8-42

Top-Rail Styles

VR6/8C-3 or VR6/8C-42



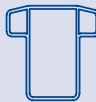
2" x 3.5"
Top Rail



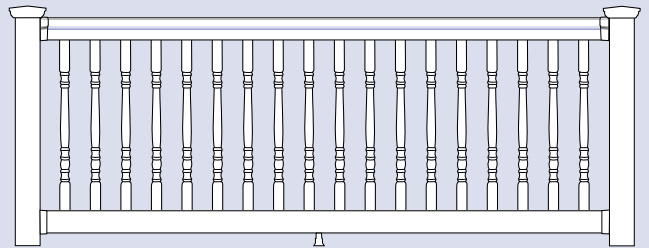
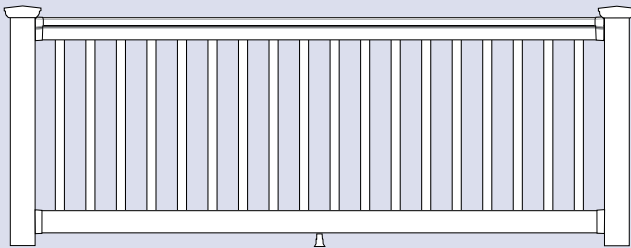
3' or 42" Height Traditional Pkt. 1.5" x 1.5",
2"x3.5" Top and Bottom Rail, 6' or 8' Wide
NOTE: 3' Height Classic White Available in **QuickShip**

3' or 42" Height Colonial Spindle Pkt.,
2" x 3.5" Top and Bottom Rail, 6' or 8' Wide
NOTE: 3' Height Classic White Available in **QuickShip**

VRT6/8-3 or VRT6/8-42



T-Rail
Top Rail



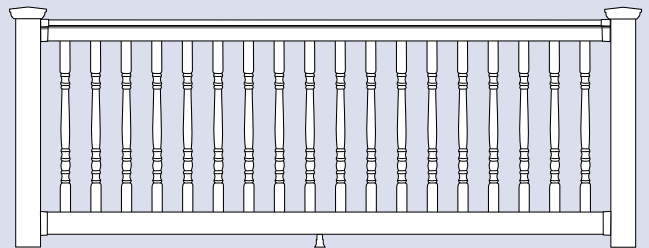
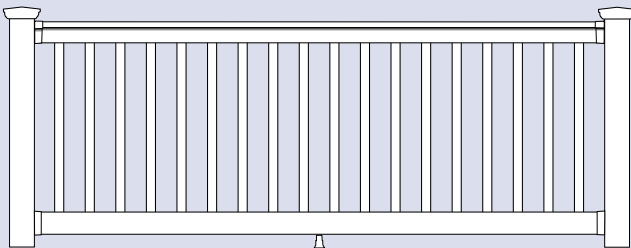
3' or 42" Height Traditional Pkt. 1.5" x 1.5",
T-Rail Top and 2"x 3.5" Bottom Rail, 6' or 8' Wide
NOTE: 3' Height Classic White Available in **QuickShip**

3' or 42" Height Colonial Spindle Pkt.,
T-Rail Top and 2"x 3.5" Bottom Rail, 6' or 8' Wide
NOTE: 3' Height Classic White Available in **QuickShip**

VRFT6/8-3 or VRFT6/8-42

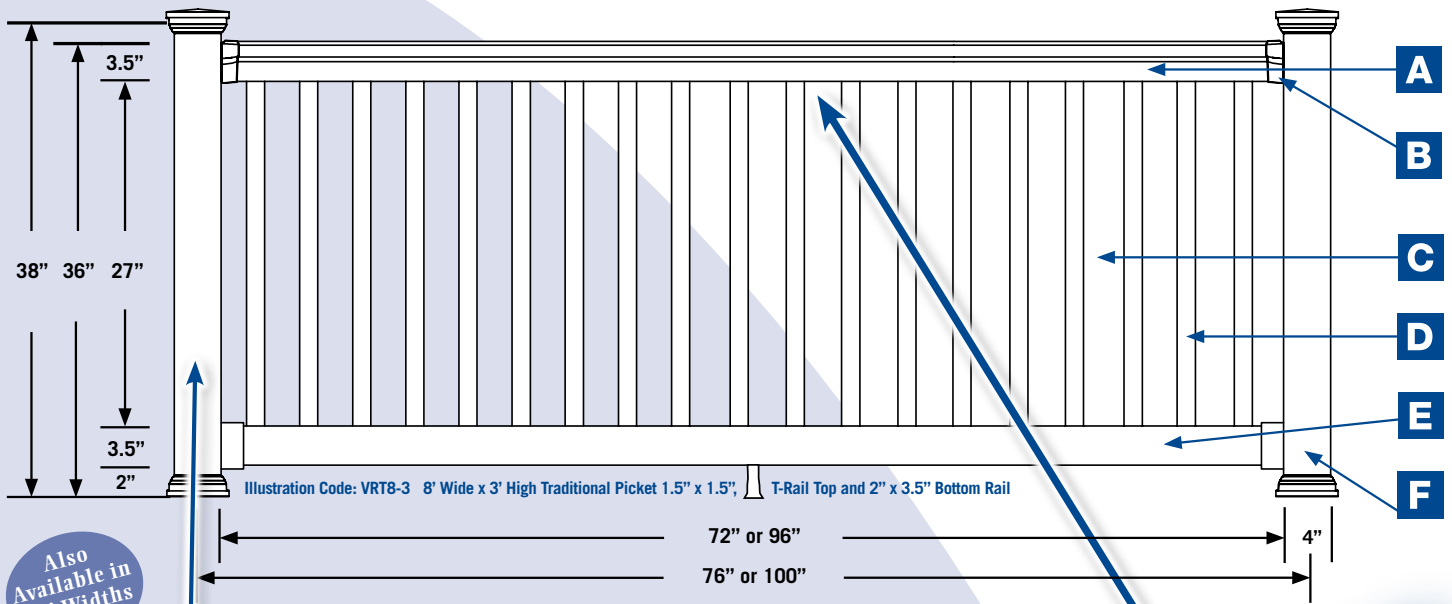


Flat T-Rail
Top Rail



3' or 42" Height Traditional Pkt. 1.5" x 1.5",
Flat T-Rail Top and 2"x 3.5" Bottom Rail, 6' or 8' Wide

3' or 42" Height Colonial Spindle Pkt.,
Flat T-Rail Top and 2"x3.5" Bottom Rail, 6' or 8' Wide



Illusions® Vinyl Railing System™ meets the highest building code standards in the nation. Approved for both commercial and residential applications, it is sure to provide a safe and attractive solution to all of your railing needs.

Certified for the following building codes:
ICC-ES AC174

2012 International Building Code (IBC)
2012 International Residential Code (IRC)
1999 BOCA National Building Code

Available in 36" and 42" Heights

Safety

Aluminum "H" Channel Reinforcement (AHC6/8/10). Included in all top rails. Shown in T-Rail. Also fits 2" x 3.5" tops (Optional for Bottom Rail).

- A** **Top Rail**
 VRT6/8-3 T-Rail Top
 VR6/8-3 2" X 3.5" Top
 VRFT6/8-3 Flat T-Rail Top
- B** **Railing Bracket Kits**
 VR235TRK T-Rail Hand Rail
 VR235K 2" x 3.5" Hand Rail
 VRSTRK T-Rail Stair Rail*
 VRS235K 2" x 3.5" Stair Rail*
 VRFTRK Flat T-Rail Hand Rail
 VRSFTRK Flat T-Rail Stair Rail*
- C** **Picket Spacing**
 20 Spaces of 3.375" (8' Wide)
 15 Spaces of 3.4" (6' Wide)

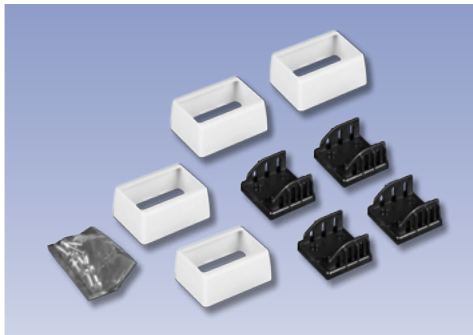
- D** **Pickets**
 19 Pickets (8' Wide)
 14 Pickets (6' Wide)
 of 1.5" x 1.5" or
 Colonial Spindle Style
- E** **Bottom Rail**
 All Styles
 2" X 3.5"
- F** **Posts**
 4" x 4" x 38" (For 36" Height)
 4" x 4" x 44" (For 42" Height)
- G** **Aluminum Reinforcement**
 "H"- Channel (AHC6/8/10)

*(For 30-43 Degree Stairs)

Accessories

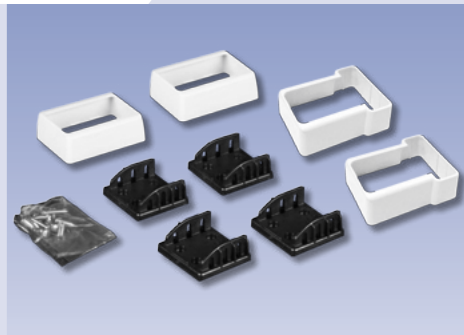


Simple to order matching accessories for your Illusions Vinyl Railing System



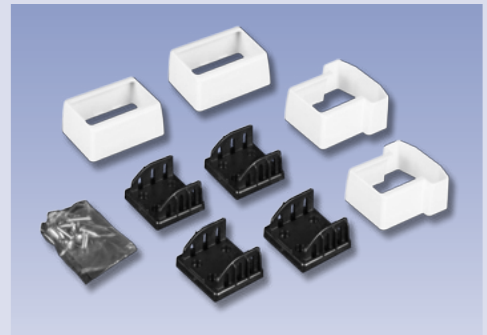
VR235K

2" x 3.5" HAND RAIL KIT



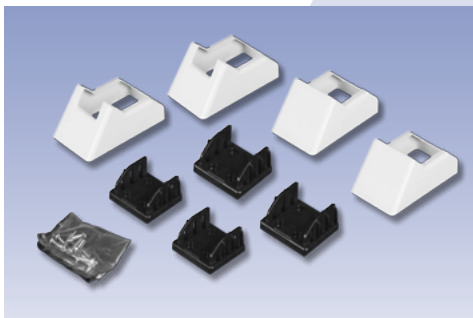
VRFTRK

FLAT T-RAIL HAND RAIL 2" x 3.5" KIT



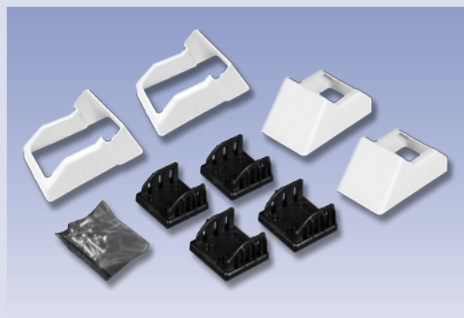
VR235TRK

T-RAIL HAND RAIL 2" x 3.5" KIT



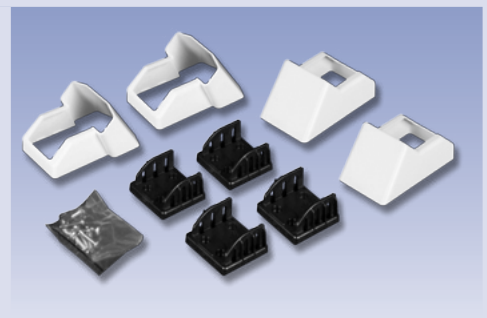
VRS235K

2" x 3.5" STAIR RAIL KIT



VRSFTRK

FLAT T-RAIL STAIR RAIL KIT



VRSTRK

T-RAIL STAIR RAIL KIT



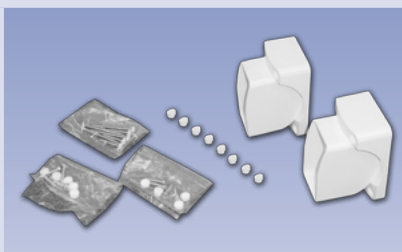
VRM235AH

RAIL MOUNT BRACKETS 2" X 3.5" ADJUSTABLE HORIZONTAL



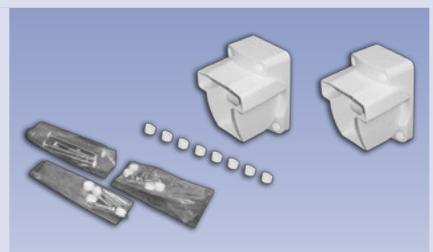
VRMTRAH

RAIL MOUNTS BRACKET T-RAIL ADJUSTABLE HORIZONTAL



VRM235AV

RAIL MOUNT BRACKETS 2" X 3.5" ADJUSTABLE VERTICAL



VRMTRAV

RAIL MOUNTS BRACKET T-RAIL ADJUSTABLE VERTICAL



EXTERNAL FLAT
V44FO



NEW ENGLAND
V44NE



BALL
V44BC



GOTHIC
V44FG



TEARDROP
V44TD



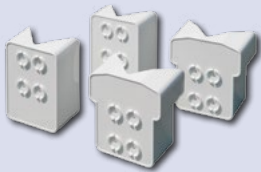
COACHMAN
V44CM



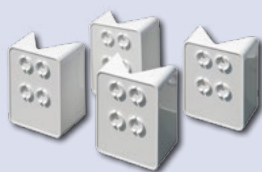
SOLAR
V44SO



PALACE SOLAR
V55P



VRT45AK
T-RAIL 45° ADPT. KIT



VR23545AK
2" x 3.5" 45° ADPT. KIT



VRTRAK

T-Rail X 8" Round Column Adaptor Kit



VR235RAK

2" X 3.5" RL X 8" Round Adaptor Kit

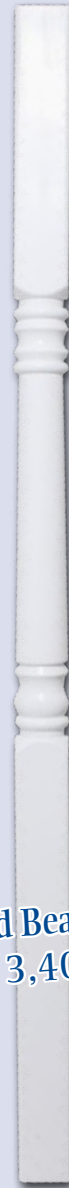


VRSRAK

Stair Rail to 8" Round Adaptor Kit



VRNP44-48
4" x 4" x 48"
NEWEL POST



Load Bearing
up to 3,400 lbs!

VRPP44-108
4" x 4" x 108"
PORCH POST

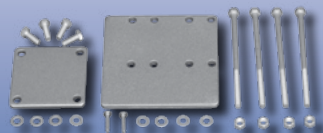


VRPM
RAILING POST MOUNT SYSTEM

VRPM
POST
MOUNT



VRPMHC
HARDWARE-CONCRETE



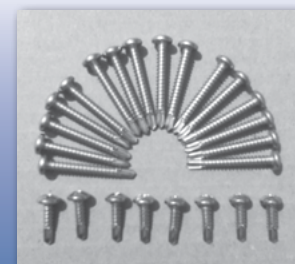
VRPMHW HARDWARE-WOOD



VRFBK
3 PIECE FOOT
BLOCK KIT



V44PS
4" x 4" POST SKIRT



VRSSK
Screw Kit with Instructions
(Required for ICC-ES AC174
Certified Installation)

Certifications



ILLUSIONS® VINYL RAILING SYSTEM™ IS FULLY ICC-ES AC174 CERTIFIED

Evaluation Scope

- Compliance with the following codes:
- 2012 International Building Code® (IBC)
 - 2012 International Residential Code® (IRC)

Properties Evaluated

- Structural
- Durability
- Surface-burning characteristics

*ICC-ES-2995
CCRR-0143*

Uses

The **Illusions Vinyl Railing System™** described in this report is for exterior use as guards for balconies, porches, decks and stairs in buildings of Type V-B (IBC) construction and other types of construction in applications where untreated wood is permitted by IBC Section 1406.3 or in buildings constructed in accordance with the IRC.

Description

The **Illusions® Vinyl Railing System™** is composed of polyvinyl chloride (PVC) which is extruded, in accordance with the approved quality control manual, into prefinished railing system components. The system components are available in white, beige or gray.

The **Illusions® Vinyl Railing System™** is composed of top rails with aluminum “H” shaped inserts, bottom rails, and either square or colonial-shaped balusters. The inserts are 1.73 inches (43.9 mm) wide by 3.18 inches (80.8 mm) deep, and have 0.07-inch-thick (1.78 mm) flanges and a 0.10-inch-thick (2.54 mm) web. The inserts are made of Aluminum Alloy 6005-T5 meeting ASTM B 221. Four styles of **Illusions®** railings are available: Traditional square balusters with rectangular top rails; Traditional square balusters with T-Rail top rails; Colonial Spindle balusters with rectangular top rails; and Colonial Spindle balusters with T-Rail top rails. The rectangular top rails and the bottom rails are 2 inches (51 mm) wide by 3.5 inches (89 mm) deep. The T-Rail top rails have a wider top, resulting in an overall size of 3.5 inches (89 mm) wide by 3.5 inches (89 mm) deep. The **Illusions® Vinyl Railing System™** is recognized for guardrails having a maximum height of 42 inches (107 cm) as shown in Table 1. The railings provide for 3.42-inch-wide (86.9 mm) openings between the 1-1/2 inch (38.1 mm) square sections of the thermoformed hollow PVC Colonial balusters and the co-extruded hollow PVC Traditional balusters. The bottom and top rails have a 0.12-inch (3.05 mm) wall thickness, and the Traditional and Colonial balusters have a 0.08-inch (2.03 mm) wall thickness. See Figure 2 for typical component cross sections.

The top and bottom rails are fastened to the supporting structure using 2.5-inch-tall-by-2.75-inch-wide (64 mm by 70 mm) nylon brackets. The brackets have four screw holes used to fasten the brackets to the supports, a resting flange at the bottom, and a fastening flange on each side with three slotted screw holes each. The brackets are designed for mounting deck railings and stair railings to fixed wall surfaces or to braced columns.

Durability

When subjected to weathering, insect attack and other decaying elements, material used to manufacture the **Illusions® Vinyl Railing System™** is equivalent to preservative-treated or naturally durable lumber when used in locations described in Section 2.0 of this report. The **Illusions® Vinyl Railing System™** has been evaluated for a temperature range of -20°F to 125°F (-29°C to 52°C).

Surface Burning Characteristics

When tested in accordance with ASTM E 84, the **Illusions® Vinyl Railing System™** has a flame-spread index of no greater than 200.

Design and Installation

General: Installation of the **Illusions® Vinyl Railing System™** must comply with this report and the manufacturer's published installation instructions. A copy of these instructions must be available on the jobsite at all times during installation. When the manufacturer's published installation instructions differ from this report, this report governs.

Design: The **Illusions® Vinyl Railing System™** is satisfactory to resist the loads specified in IBC Section 1607.7.1 and IRC Table R301.5, when installed at a maximum edge-of-structure-to-edge-of-structure spacing as prescribed in Table 1 of this report.

Installation: The **Illusions® Vinyl Railing System™** has been evaluated for installation between two fixed points, such as walls or columns. The top rails must be reinforced with aluminum “H” shaped inserts, which are provided with the rails. The rails must be installed using the mounting plates supplied by Eastern Wholesale Fence LLC, mounted on the supports at the appropriate heights for the bottom and top rails, with four No.10 by 1-1/2 inch-long (38.1 mm) panhead, stainless steel screws per bracket supplied by the manufacturer. The rails must be secured to the mounting brackets with two No. 10 by 3/4-inch (19.1 mm) stainless steel, pan head, self-tapping screws, making sure the screws engage and penetrate through the aluminum “H” shaped inserts. At stairs, the rails are installed in the same manner, with the bottom rail installed 2 inches above the risers. The attachment method described above for brackets to supports is for fasteners embedded into a wood substrate having a specific gravity of 0.50 (minimum), to a minimum depth of 1-3/8 inches (34.9 mm). Additional attachment methods are outside the scope of this report and are required to be submitted to the code official for approval. See Figure 1 for typical railing system installation.

Conditions of Use

The **Illusions® Vinyl Railing System™** described in this report complies with, or is a suitable alternative to what

is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

The **Illusions® Vinyl Railing System™** described in this report is limited to exterior use as guards for balconies, porches, decks and stairs in buildings of Type V-B (IBC) construction and other types of construction in applications where untreated wood is permitted by IBC Section 1406.3, or in buildings constructed in accordance with the IRC.

Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. Only those fasteners and fastener configurations described in this report have been evaluated for the installation of the **Illusions® Vinyl Railing System™**. When the manufacturer's published installation instructions differ from this report, this report governs.

The determination of compatibility of the fasteners, metal post mount components and other metal hardware with the supporting construction, including chemically treated wood, is subject to approval by the code official.

5.4 Adjustment factors outlined in the AF&PA National Design Standard and applicable codes must not apply to the allowable capacity and maximum spans for the **Illusions® Vinyl Railing System™**.

5.5 The **Illusions® Vinyl Railing System™** must be fastened directly to supporting construction. Where required by the code official, engineering calculations and construction documents consistent with this report must be submitted for approval. The calculations must verify that the supporting construction complies with applicable building code requirements and is adequate to resist the loads imparted upon it by the products and systems discussed in this report. The documents must contain details of the attachment to the supporting structure consistent with the requirements of this report. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.6 The top rail of the **Illusions® Vinyl Railing System™** must not be permitted to be used as a handrail for stairways or ramps.

5.7 Posts are outside the scope of this report.

5.8 The **Illusions® Vinyl Railing System™** components are produced in Calverton, New York, under a quality control program with inspections by Architectural Testing, Inc. (AA-676).

Evidence Submitted

Data in accordance with the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated May 2012 (editorially revised May 2012).

TABLE 1 – MAXIMUM GUARDRAIL SYSTEM SPANS¹

GUARDRAIL SYSTEM	GUARDRAIL TYPE	APPLICABLE BUILDING CODE ²		MAXIMUM SPAN ^{3,4} (Inches)
		IBC	IRC	
Colonial balusters with maximum 42-inch-high Rectangular or T-Rail top rail	Level	Yes	Yes	92
	Stair	Yes	Yes	87.5
Traditional balusters with maximum 42-inch-high Rectangular or T-Rail top rail	Level	Yes	Yes	92
	Stair	Yes	Yes	87.5

¹ The ability of the supporting construction to resist the reaction from guardrail loads must be justified to the satisfaction of the code official.

² Indicates compliance with the respective building codes.

³ Maximum allowable span has been adjusted for durability. No further increases are permitted.

⁴ Maximum span is measured from edge-of-support-to-edge-of-support. It is recommended that separate specimens be used for each exposure time.

Specifications



WHAT IS ASTM F964-13?

Scope

ASTM F964-13 is considered one of the “end all, beat all” testing specification for vinyl railing and fence quality. The purpose of this specification is to establish a recognized standard of quality for exterior vinyl profiles for use in assembling agricultural, commercial, and residential fencing and railing. This specification covers **Illusions® Vinyl Railing System™** sections and the EverStrong® Profiles used to fabricate them.

Materials

Illusions® Vinyl Railing System™ Products are manufactured using rigid poly vinyl chloride (PVC) compounds for exterior-profile extrusions that meet the requirements of ASTM Specification D4216.

Manufacture

Illusions® Vinyl Railing System™ Products are manufactured to meet cell Class 1-32333-3 as defined in Specification D4216. **Illusions®** compounds have higher cell classification because one or more properties are superior to those used in standard acceptable compounds.

Color/Consistency Testing – The PVC compound in extruded section shall maintain uniform color and be free of any visual surface or structural changes, such as peeling, chipping, cracking, flaking, or pitting after weathering at intervals of six months and one year for white and for six months, one year, and two years for all other colors in hot, dry climate such as Phoenix, AZ; a hot humid climate, such as Miami, FL; and a temperate northern climate, when tested in accordance with ASTM Performance Weathering Requirements (TABLE 1).

Weathering Testing – The PVC compound shall have a minimum impact resistance of 0.6 in.-lb/mil (2670 J/m) after weathering six months and one year in a hot, dry climate such as Phoenix, AZ; a hot, humid climate, such as Miami, FL; and a temperate northern climate, when tested in accordance with ASTM Performance Weathering Requirements. The PVC compound shall have successfully met the weathering requirements prescribed for six months at each climatic testing site prior to use in production of exterior-profile extrusions, when tested in accordance with ASTM Performance Weathering Requirements (TABLE 1).

ASTM Specifications Met

- D256** – To determine Izod impact properties
- D618** – Practice for Conditioning Plastics for Testing
- D635** – Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
- D638** – To determine tensile properties
- D648** – To determine heat distortion temperature
- D696** – Test Method for Coefficient of Linear Thermal Expansion of Plastics Between 030°C and 30°C with a Vitreous Silica Dilatometer
- D790** – To determine flexural properties
- D792** – To determine specific gravity
- D883** – Terminology Relating to Plastics
- D1435** – Practice for Outdoor Weathering of Plastics
- D1600** Terminology for Abbreviated Terms Relating to Plastics
- D1784** – Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- D7032** – Standard Specification for Establishing: Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails)
- D1761** – Standard Test Methods for Mechanical Fasteners in Wood: Used to test rail mounting brackets in PVC sleeved pressure treated wood posts.
- D1898** – Practice for Sampling of Plastics
- D2240** – To determine Shore hardness values
- D2244** – Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- D2565** – Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
- D4216** – Material Class Number 1-32333-3. To establish Cell Classification of PVC material. **Illusions** compounds have higher cell classification because one or more properties are superior to those used in standard acceptable compounds
- D4226** – Test Methods for Impact Resistance of Rigid Poly-(Vinyl Chloride) (PVC) Building Products
- D4726** – Specification for Rigid Poly(Vinyl Chloride) (PVC) Exterior-Profile Extrusions Used for Assembled Windows and Doors
- E-84-04** – Used to determine the flame spread value of PVC material; **Illusions®** burn rate is significantly lower than allowed value

Quality Assurance

Illusions Vinyl Railing System™ Products are run through a series of dimensional and color tests that are performed at least every two hours. Testing includes; flattening, extrusion quality, impact resistance, warp, color comparison with standard color samples, capstock thickness, and bond testing. All will be done at the startup of a production and once per shift thereafter with a minimum of two tests per 24 hours of production.

TABLE 1 - Required Exposures for PVC Extrusions - In Process

Color of PVC Extrusions	Exposure Climate	Required Exposure Times, Months*
White	hot, dry (Phoenix, AZ)	6 and 12
	hot, humid (Miami, FL)	6 and 12
	northern temperate	6 and 12
Any other color	hot, dry (Phoenix, AZ)	6, 12 and 24
	hot, humid (Miami, FL)	6, 12 and 24
	northern temperate	6, 12 and 24

*It is recommended that separate specimens be used for each exposure time.



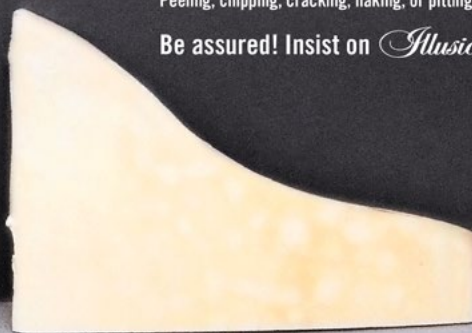
The VMA, (Vinyl Manufacturers Association), is the Voice of the Vinyl Fence and Railing Industry and this is their certification logo. VMA Certified **Illusions Vinyl Fence and Railing** products meet or exceed industry standards.

THESE ARE THE RESULTS FROM AN ACCELERATED WEATHER TESTING CHAMBER IN LABORATORY CONDITIONS

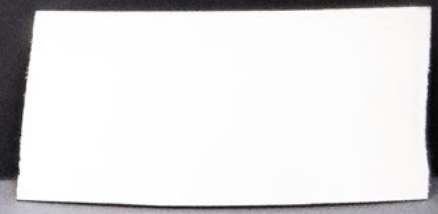
The *Illusions® Vinyl Railing System™* Advantage

This test is run according to ASTM Standard G-155, Cycle #1. All **Illusions® Vinyl Railing** products are guaranteed to be made from 100% Pure Virgin Vinyl and assembled according to ASTM F964. Please note the difference in color retention and be assured, **Illusions® Vinyl Railing System™** will have uniformed color and be free of any visual surface or structural changes such as: Peeling, chipping, cracking, flaking, or pitting after weathering.

Be assured! Insist on *Illusions® Vinyl Railing* Products.



Competitor:
450 Hrs.
(4-5 Years)



Illusions®:
1000 Hrs. 21
(10-11 Years)

ADA Railing

Our **ADA Railing System** allows you to create a continuous code compliant handrail on any stair or ramp. The ADA secondary handrail system can be easily installed on site without any special tools. It can be mounted to any wall surface or railing; vinyl, wood, composites, steel, concrete, or aluminum.

ADA RAILING

Item No.	Description	Item No.	Description
HR00	Rail with Stiffener - 104"	HR06	Post Return (Candy Cane)
HR01	90 Degree Wall Return Kit	HR07	Straight Joiner
HR02	Straight Wall Return Kit	HR08	Adjustable Joiner
HR03	Hand Rail Bracket Kit	HR09	Joint Ring
HR04	90 Degree Corner	HR10	Rail End Cap
HR05	End Loop 18" x 12" x 18"	HR11	Bracket/Wall Return Cover Plate

Illustrations not to scale.

- 1-1/2" O.D. (Outside Dimension) vinyl meets the "Americans with Disabilities Act" graspability requirements.
- Unique adjustable internal joiner accommodates any transition, stair or ramp angle.
- Easy installation.
- Fasteners are hidden creating an improved look over other available ADA systems.
- ADA railing is available in White, Khaki, Black, Almond, and Acorn*.
- The interior rail stiffener is an engineered aluminum providing maintenance free strength and durability.
- Can be installed in any stair or ramp configuration; continuously or interrupted.
- Mounts to any wall surface to provide code compliant graspability.
- Cast aluminum components are color matched powder coated for a durable finish.

*OTHER COLORS AVAILABLE UPON REQUEST

www.illusionsvinylrailing.com



Illusions[®]
Vinyl Railing System

Ornamental Aluminum Railing

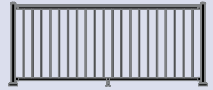
Eastern Ornamental Railing has fast become one of the most respected ornamental aluminum products in the railing industry. Your beautiful new matte finish railing will add the perfect accent to your stoop, deck, patio, or high rise. In accordance to ICC-ES AC273, you can start installing Eastern Ornamental Railing on any floor today.

It's Simple, Attractive, Safe, and Affordable.

- Available in 36" and 42" Heights
- Available in 6' & 8' Widths
- In Accordance to ICC-ES AC273
- Flat Matte Finish
- 3/4" Pickets
- Highly Rackable
- Available for QuickShip Delivery
- 2.5" & 3" Posts Available
- Easy Bracket Install

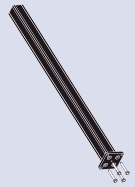
SECTIONS

ITEM NO.	DESCRIPTION
EOR6-36-BK	36" H X 6' W EO RAILING SECTION
EOR8-36-BK	36" H X 8' W EO RAILING SECTION
EOR6-42-BK	42" H X 6' W EO RAILING SECTION
EOR8-42-BK	42" H X 8' W EO RAILING SECTION



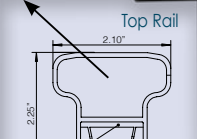
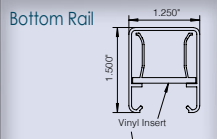
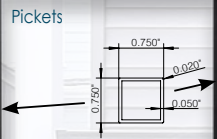
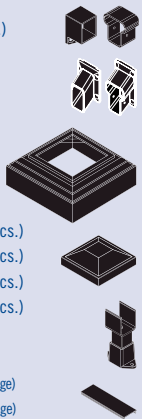
POST KITS

EOR25PK37-BK	2.5" X 37" POST KIT W/ CAP AND BASE
EOR25PA1-BK	2.5" X 41" POST W/ CAP
EOR3PK37-BK	3" X 37" POST KIT W/ CAP AND BASE
EOR3PA1-BK	3" X 41" POST W/ CAP
EOR25PK43-BK	2.5" X 43" POST KIT W/ CAP AND BASE
EOR3PK43-BK	3" X 43" POST KIT W/ CAP AND BASE
EOR25PA7-BK	2.5" X 47" POST W/ CAP
EOR3PA7-BK	3" X 47" POST W/ CAP



ACCESSORIES

EORBKIT-BK	Section Rail Bracket Set (4 pcs.)
EORABKIT-BK	Section Rail Bracket Set ADJUSTABLE (4 pcs.)
EORFSTRK-BK	Stair Rail Fixed Bracket Set (4 pcs.)
EORSTRK-BK	Stair Rail Adjustable Bracket Set (4 pcs.)
EORPS25-BK	2.5" Post Trim Skirt
EORPS30-BK	3" Post Trim Skirt
EORPC25-BK	2.5" Post Cap
EORPC30-BK	3" Post Cap
EORS-BK	Foot Block Support (Each Set Has 3 Parts)
EORPKT636-BK	Single picket and spacer for 6'W x 36"H (2 pcs.)
EORPKT836-BK	Single picket and spacer for 8'W x 36"H (2 pcs.)
EORPKT642-BK	Single picket and spacer for 6'W x 42"H (2 pcs.)
EORPKT842-BK	Single picket and spacer for 8'W x 42"H (2 pcs.)
EORHR-6-BK	6' Top and Bottom Rail (2 pcs.)
EORHR-8-BK	8' Top and Bottom Rail (2 pcs.)
EOR6ST-BK	6'W Stair Rail Conversion Spacer (15 PCS. Per Package)
EOR8ST-BK	8'W Stair Rail Conversion Spacer (20 PCS. Per Package)



www.easternornamentalarailing.com

NOTE: Sections are sold knockdown (unassembled and boxed) and include top and bottom rails, balusters, spacers, and footblock. Posts, brackets, and caps sold separately.

We Make Ornamental Aluminum Railing Too!

AVAILABLE
IN BLACK,
BRONZE,
& WHITE

SPECIFICATIONS

Posts	2.5" x 2.5" x 0.120" wall 3" x 3" x 0.120" wall
Post Base Plate	2.5" Post (4.25" x 4.25") 3" Post (4.75" x 4.75")
Top Rail	2.25"H x 2"W x MAX .090" wall
Bottom Rail	1.5"H x 1.25"W x MAX .050" wall
Pickets	.75" x .75" square x .050" wall
Picket Spacing	3.86" MAX
Heights	36" and 42"
Color	Matte Finish Black, Bronze, and White
MATERIALS	
Posts, Rails, Pickets	6061 T6 Aluminum Alloy
Finish	Interpon Powder Coating Reading, Pennsylvania

Eastern
**Ornamental
RAILING**
EASTERNORNAMENTALRAILING.COM

For stair installs, use the same code as corresponding straight section, then simply order stair-rail brackets and rack the sections to fit.



Low Voltage Lighting

Low Voltage Railing and Deck Lighting Solutions

Illusions Vinyl Railing Low Voltage Lighting Caps and Hardware are made to combine safety and quality with aesthetics. Lighting is one way that customers can add a unique touch to their deck, fence, or railing. Illusions lighting products are constructed with only high grade, commercial components.

Illusions Low Voltage Lighting was created to provide contractors and homeowners LED lighting solutions that are easy to install, reliable, and affordable.

These attractive lighting components will increase the enjoyment of any outdoor living space while also adding ambiance and safety.



VPCL55W

5" Neptune Halo LV Post Cap - White
0.80 Watts

- Simple and Easy to Install
- No wires to cut - plug together wiring harness
- Single power supply for all lights
- No need for an electrician or electrical permits
- Weather resistant connectors and lights
- Long-lasting LED's
- Housings are durable and UV stable
- Low voltage DC power supply
- Dusk to dawn light sensor
- Available with remote dimmer switch



0.80 Watts

VPCL44W

4" Neptune Halo LV Post Cap Light - White



0.80 Watts

VNPCL44W

4" Downward LV Post Cap - White



0.80 Watts

VDPCCL44W

4" Combo LV Post Cap Light



0.80 Watts

VLDOMEW

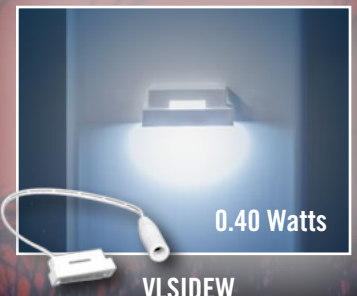
LV Dome Side Light - Scalloped Lens



0.40 Watts

VLSTW

LV Side/Stair Light (Comes with 2 Covers)



0.40 Watts

VLSIDEW

Ornamental LV Side Light



Ornamental Low Voltage Lighting



Code	Description	Finish	Code	Description	Finish
EOLPC2-BK	2" LV Ornamental Cap	Smooth (Fence)	EOLC02-BK	2" Ornamental LV Combo Cap	Smooth (Fence)
EOLPC4-BK	4" LV Ornamental Cap	Smooth (Fence)	EOLC04-BK	4" Ornamental LV Combo Cap	Smooth (Fence)
EORLPC25-BK	2.5" LV Ornamental Cap	Textured (Railing)	EORLC025-BK	2.5" Ornamental LV Combo Cap	Textured (Railing)
EORLPC30-BK	3" LV Ornamental Cap	Textured (Railing)	EORLC030-BK	3" Ornamental LV Combo Cap	Textured (Railing)



EORLDOME-BK
LV Dome Side Light Scalloped Lens
(BLACK)



EORLST-BK (Shown on 4" Post)
LV Side/Stair Light
(BLACK) (Comes with 2 Covers)



EORLSIDE-BK
Ornamental LV Side Light
(BLACK)

Power Supplies (For Use With Both Vinyl & Ornamental)

Illusions and Eastern Ornamental Low Voltage Lighting products are incredibly easy and intuitive to install. Shown here are the available power supply options.

LV12DIM
(OPTIONAL) Dimmer for use with 12 Watt Low Voltage Power Supply (Remote Included)



NOTE: Items on this page are not to scale. | Ornamental fence and railing lights available in black only.

www.illusionsvinylrailing.com | www.easternornamentalfence.com



Professional Railing Dealer

A large white rectangular area intended for a professional railing dealer's name and contact information.

Color Protection By:

