

Pei Evaluation Service is an accredited ISO Standard 17065 Product Certifier, accredited by the IAS. This **Product Evaluation Report** represents a product that **Pei ES** has Evaluated and this product has a Follow-up Service / Inspection Agreement. This **Product Evaluation Report** in no way implies warranty for this product or relieves **USA Vinyl, LLC** of their liabilities for this product. This **PER** is an official document if it is within one year of the Initial or Re-Approval date.

Initial Approval
April, 2013

Re-Approved
March, 2016

See all **Pei ES** Listings at: www.p-e-i.com

Report Owner
USA Vinyl, LLC

5795 Green Pointe Drive
Groveport, OH 43125

Products

WXR-R42-S8	WXR-T3R42-S10
WXR-R42-C8	CXR-R42-E8
WXR-T42-S8	CXR-T42-E8
WXR-T42-S10	CXR-R42-S8
WXR-T42-C8	CXR-R42-C8
WXR-T42-C10	CXR-T42-S8
WXR-T42-A8	CXR-T42-C8
WXR-T42-A10	CXR-T42-A8
WXR-T42-R8	CXR-T42-R8
WXR-T42-R10	CXR-T3R42-S8
WXR-T3R42-S8	

Approved Manufacturing Locations
Premium Building Products, Inc.

265 Congress Street
West Salem, OH 44287

Evaluation Report Information

www.usavinylfence.com

USA Vinyl, LLC contact: Joe Eickholt - 1-888-743-3673

Note:

The second letter in the product code (X) refers to the railing color and will be labeled as follows: W=White, T=Tan, or K=Khaki.

General Details

The **USA Vinyl** guardrails are used for exterior guards for balconies, porches, stairs and decks. The top and bottom railings are manufactured with openings spaced under 4" to accommodate the vertical balusters.

The guardrails have been tested and evaluated for structural strength to meet design loads and requirements of the building codes listed under the Code Compliance section of this **PER**. The PVC material has been tested to ASTM E 84 and has a flame spread rating of well under the maximum allowable 200. The post and post anchorage requirements are outside the scope of this report.

Product Descriptions

The **USA Vinyl** guardrail parts are co-extruded using virgin grade PVC. Three colors are offered, white, tan and khaki. The guardrails are designed for a maximum installed height of 42" with a maximum length of 96" or 120" when measured between posts. Each post is a vinyl sleeve over a 4x4 timber. The top rails are strengthened with .075" or .065" thick extruded aluminum rail reinforcement. The bottom rails are either supported by crush blocks or use the aluminum rail reinforcement. The rails are attached to the posts using a specific bracket and stainless steel screws. The pickets are placed in the pre-cut holes in the rails. The holes are cut for a tight fit. See Figure 1 through Figure 16 for exact specifications and requirements for each model of guardrail.

General Product Usage

1. The **USA Vinyl** guardrail systems shall be installed in accordance with the Straight Bracket and Straight Railing Installation Instructions supplied by USA Vinyl Fence and the conditions of this **PER**. A copy of the Straight Bracket and Straight Railing Installation Instructions shall be made easily available to the installer.
2. All framing, wood posts, beams, joists, stringers and associated connections needed to support the **USA Vinyl** guardrails are outside the scope of this **PER**. All framing shall follow applicable codes or be designed by a licensed Engineer. Stairway handrail shall be designed and constructed in accordance with the applicable codes.
3. All **USA Vinyl** guardrails shall be fastened to wood framing in accordance with the bracket systems described in Table 1 and Figure 1 through Figure 16 accordingly. Crush blocks shall be fastened to the bottom rail and to 1" thick minimum treated lumber deck board using (2) #8 x 1" lg. stainless steel wood screws.
4. The pre-cut holes in the rails shall not be altered or made larger. The tight fit is important to the integrity of the assembly.

Tested to

ASTM D7032-10a - Standard Specification for Establishing Performance Ratings for Wood Plastic Composite Deck Boards and Guardrail Systems

ASTM G 154-00 - Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials

ASTM E 84-03a - Surface Burning Characteristics of Building Materials

Code Compliance for Handrails & Guardrail Systems

2012 International Residential Code		2012 International Building Code		
Section R301.5	Section R312.1	Section 1013.2	Section 1013.3	Section 1013.4
Section R317.4		Section 1013.5	Section 1013.6	Section 1013.7
		Section 1607.8.1		
2015 International Residential Code		2015 International Building Code		
Section R301.5	Section R312.1	Section 1015.2	Section 1015.3	Section 1015.4
Section R317.4	Section R507.3	Section 1015.5	Section 1015.6	Section 1015.7
		Section 1607.8.1	Section 2612	

1. Meets IBC & IRC requirements only if installation is as product was tested. See Table 1 and Figure 1 through Figure 16 for details.
2. Limited to Type V-B construction.

Table 1 - Model Specific Code Compliance

Product Code ^{1,2}	2015		2012		Aluminum Channel in Top Rail Required	Aluminum Channel in Bottom Rail Required ⁴	Brackets Allowed
	IRC	IBC	IRC	IBC			
WXR-R42-S8	X	X	X	X	Yes - .075" or .065"	No	LMT 1520-WP
WXR-R42-C8	X	X	X	X	Yes - .075" or .065"	No	LMT 1520-WP
WXR-T42-S8	X	X	X	X	Yes - .075" or .065"	No	LMT 1520-WP
WXR-T42-C8	X	X	X	X	Yes - .075" or .065"	No	LMT 1520-WP
WXR-T42-A8	X	X	X	X	Yes - .075" or .065"	Yes - .075" or .065"	LMT 1520-WP
WXR-T42-R8	X	X	X	X	Yes - .075" or .065"	Yes - .075" or .065"	LMT 1520-WP
WXR-T3R42-S8	X	X	X	X	Yes - .075" or .065"	No	LMT 1520-WP
WXR-T42-S10	X	X ³	X	X ³	Yes - .075"	No	LMT 1520-WP
WXR-T42-C10	X	X ³	X	X ³	Yes - .075"	No	LMT 1520-WP
WXR-T42-A10	X	X ³	X	X ³	Yes - .075"	Yes - .075" or .065"	LMT 1520-WP
WXR-T42-R10	X	X ³	X	X ³	Yes - .075"	Yes - .075" or .065"	LMT 1520-WP
WXR-T3R42-S10	X	X ³	X	X ³	Yes - .075"	No	LMT 1520-WP
CXR-R42-E8	X		X		Yes - .075"	No	LMT 1520-WP or LMT 1219
CXR-T42-E8	X		X		Yes - .075"	No	LMT 1520-WP or LMT 1182
CXR-R42-S8	X		X		Yes - .075"	No	LMT 1219
CXR-R42-C8	X		X		Yes - .075"	No	LMT 1219
CXR-T42-S8	X		X		Yes - .075"	No	LMT 1182
CXR-T42-C8	X		X		Yes - .075"	No	LMT 1182
CXR-T42-A8	X		X		Yes - .075"	Yes - .075"	LMT 1182
CXR-T42-R8	X		X		Yes - .075"	Yes - .075"	LMT 1182
CXR-T3R42-S8	X		X		Yes - .075"	No	LMT 1182

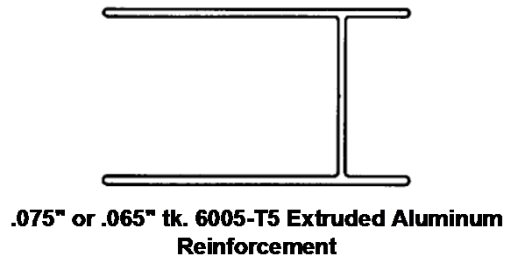
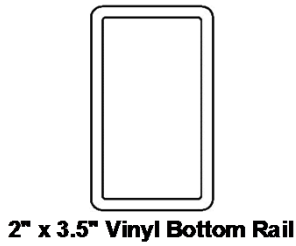
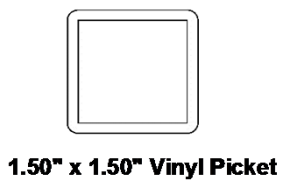
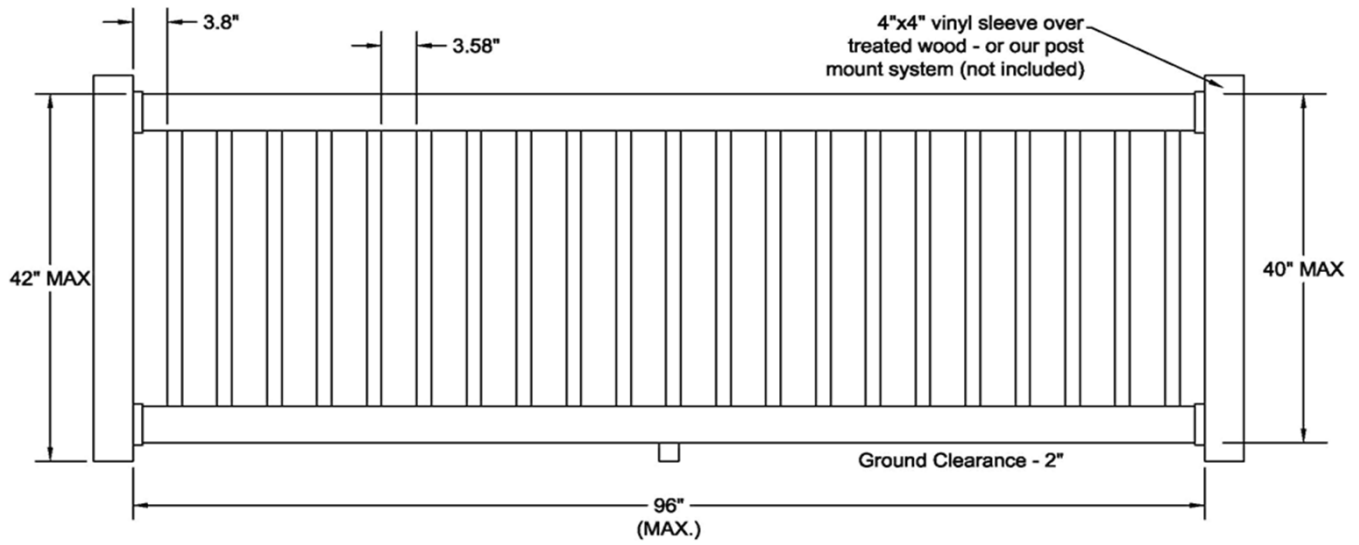
Notes:

1. All railings have been tested at a height of 42-inches. Shorter railings may be installed at the same span length as long as local code requirements for railing height are met. The maximum allowable railing clear span is indicated by the last number in the product code (i.e. "8" = 8ft clear span).
2. The second letter in the product code (X) refers to the railing color and will be labeled as follows: W=White, T=Tan, or K=Khaki.
3. Brackets must be installed with longer #10 x 2" stainless steel screws. These longer screws are not provided with railing kits and must be purchased separately by the installer.
4. Supplied footblocks must be installed for all cases where an aluminum channel is not required in the bottom rail. See Figure 1 through Figure 16 for more details.

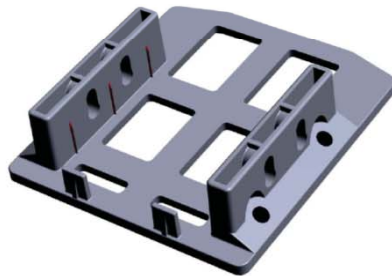
Guardrail System Directory

- | | |
|--|-------------------------|
| Figure 1: WWR-R42-S8 | Figure 8: CWR-R42-E8 |
| Figure 2: WWR-R42-C8 | Figure 9: CWR-T42-E8 |
| Figure 3: WWR-T42-S8 and WWR-T42-S10 | Figure 10: CWR-R42-S8 |
| Figure 4: WWR-T42-C8 and WWR-T42-C10 | Figure 11: CWR-R42-C8 |
| Figure 5: WWR-T42-A8 and WWR-T42-A10 | Figure 12: CWR-T42-S8 |
| Figure 6: WWR-T42-R8 and WWR-T42-R10 | Figure 13: CWR-T42-C8 |
| Figure 7: WWR-T3R42-S8 and WWR-T3R42-S10 | Figure 14: CWR-T42-A8 |
| | Figure 15: CWR-T42-R8 |
| | Figure 16: CWR-T3R42-S8 |

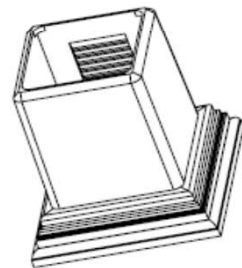
Note: W=White Color Indicated in All Figures. Other acceptable color designations: T=Tan and K=Khaki.



To Meet IRC & IBC use:
 4 - #10x1-1/2\" Screws per Bracket into post. 4 - #10x1\" Screws per Bracket into Rails.

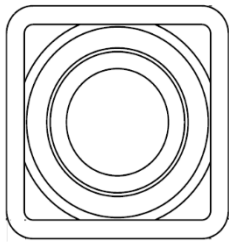
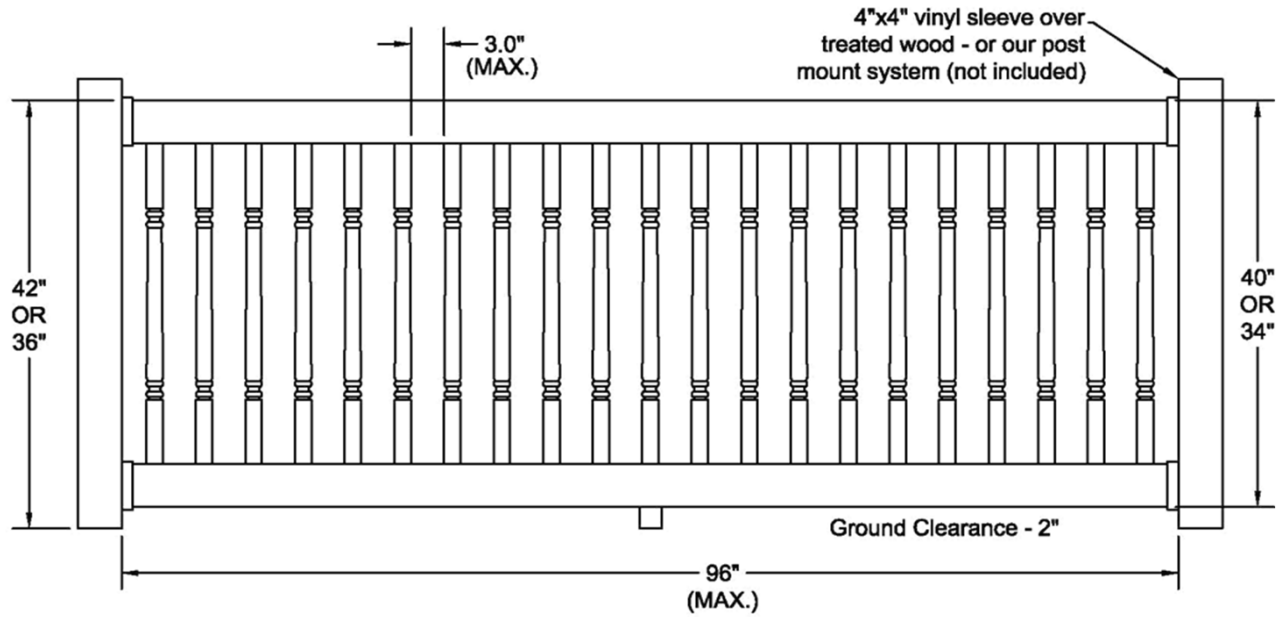


LMT Bracket 1520-WP

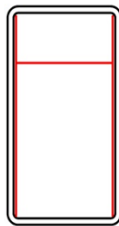


Foot Block
 1 required between posts

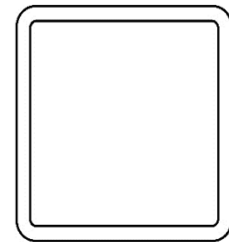
Figure 1 - Product Code: WWR-R42-S8



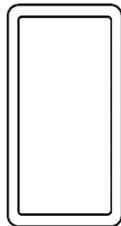
1.50" x 1.50" Thermo-Formed Spindle



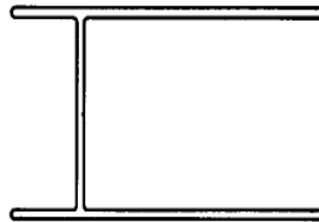
2" x 3.5" Vinyl Top Rail with Aluminum Reinforcement



4" Vinyl Sleeve



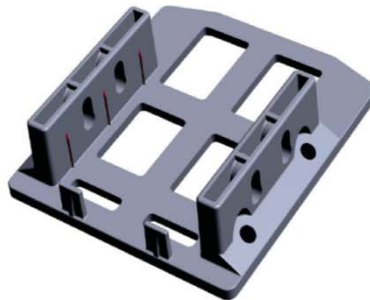
2" x 3.5" Vinyl Bottom Rail



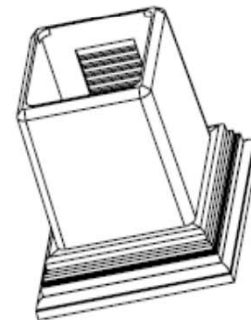
.075" or .065" tk. 6005-T5 Extruded Aluminum Reinforcement



To Meet IBC & IRC use:
 4 - #10 x 1-1/2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

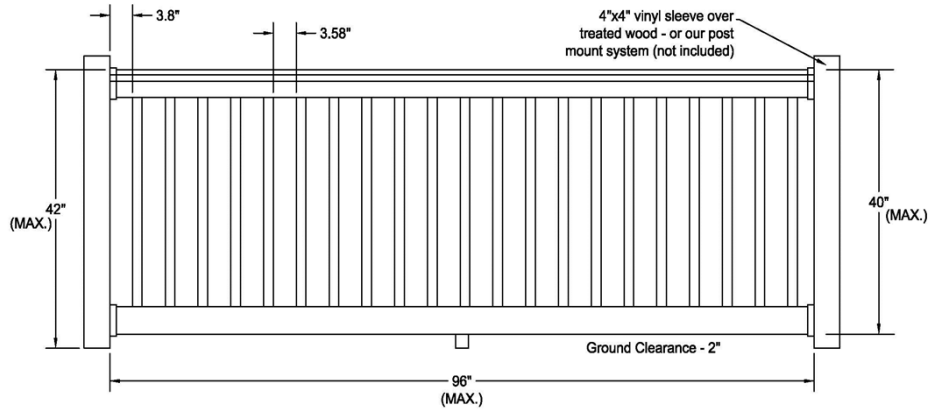


LMT Bracket 1520-WP

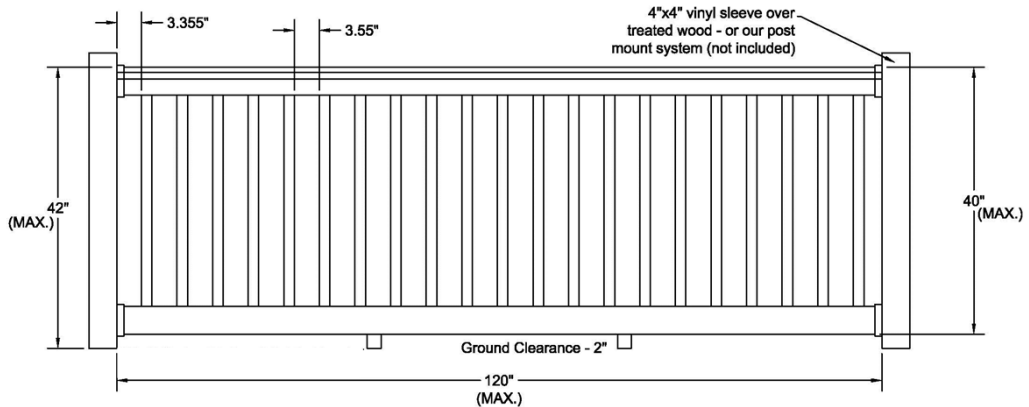


Foot Block
 1 required between posts

Figure 2 - Product Code: WWR-R42-C8



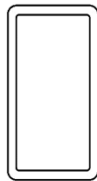
WWR-T42-S8 Installation



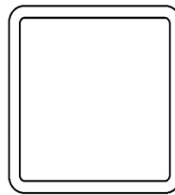
WWR-T42-S10 Installation



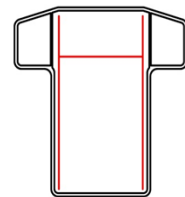
1.50\"/>



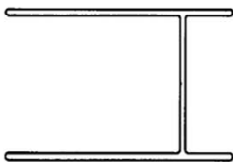
2\"/>



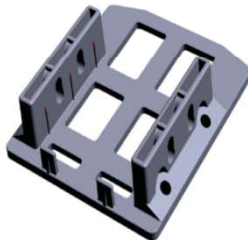
4\"/>



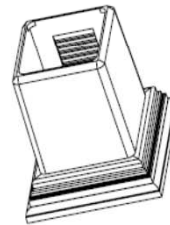
Top T-Rail with Aluminum reinforcement



.075\"/>



LMT Bracket 1520-WP



Foot Block
WWR-T42-S8: 1 required between posts
WWR-T42-S10: 2 required between posts



WWR-T42-S8 for IRC & IBC use:
4 - #10x1-1/2\"/>

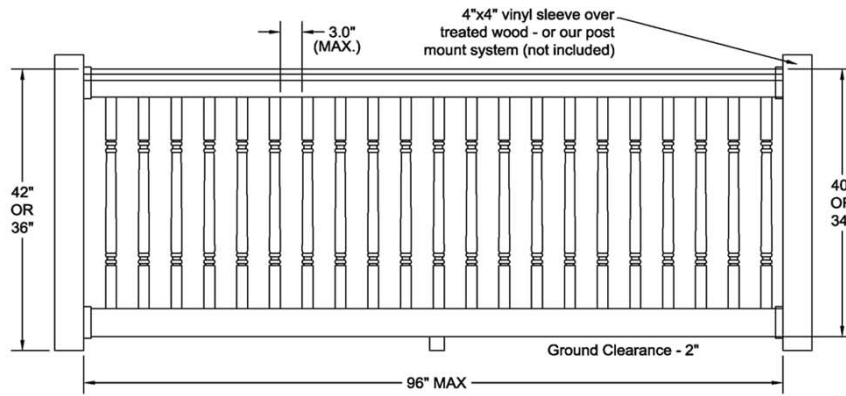


WWR-T42-S10 for IBC use:
4 - #10 x 2\"/>

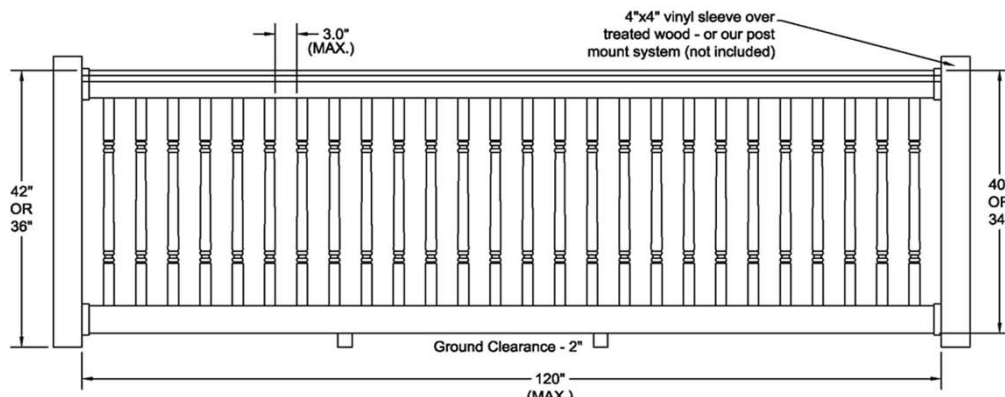


WWR-T42-S10 for IRC use:
4 - #10 x 1-1/2\"/>

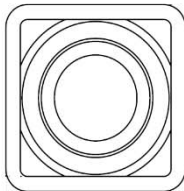
Figure 3 - Product Code: WWR-T42-S8 & WWR-T42-S10



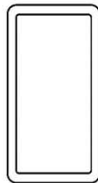
WWR-T42-C8 Installation



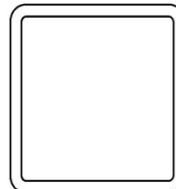
WWR-T42-C10 Installation



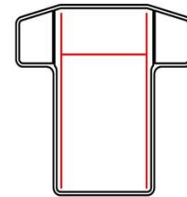
1.50\"/>



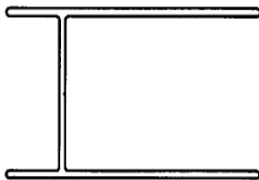
2\"/>



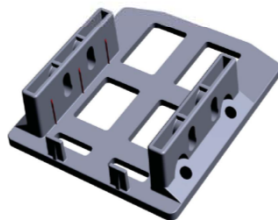
4\"/>



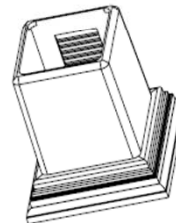
Top T-Rail with Aluminum reinforcement



.075\"/>



LMT Bracket 1520-WP



Foot Block
WWR-T42-C8: 1 required between posts
WWR-T42-C10: 2 required between posts



WWR-T42-C8 for IRC & IBC use:
4 - #10x1-1/2\"/>

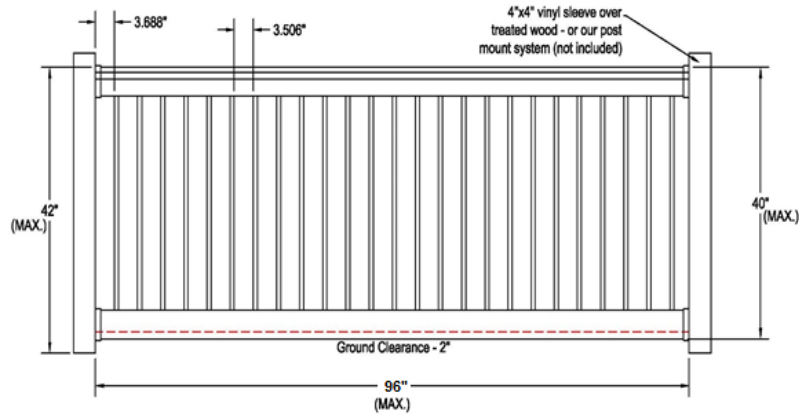


WWR-T42-C10 for IBC use:
4 - #10 x 2\"/>

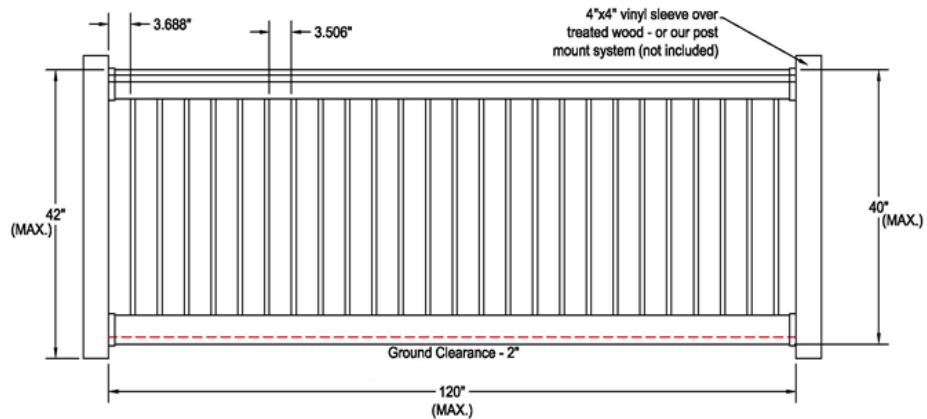


WWR-T42-C10 for IRC use:
4 - #10 x 1-1/2\"/>

Figure 4 - Product Code: WWR-T42-C8 & WWR-T42-C10



WWR-T42-A10 Installation



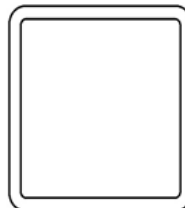
WWR-T42-A10 Installation



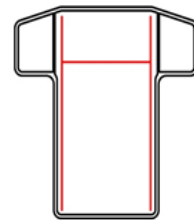
3/4" sq. x .050" tk. Extruded 6063-T6 Aluminum Picket



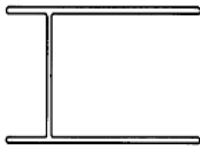
2" x 3.5" Vinyl Bottom Rail with Aluminum reinforcement



4" Vinyl Sleeve



Top T-Rail with Aluminum reinforcement



.075" or .065" tk. 6005-T5 Extruded Aluminum Reinforcement (.075" tk. Required for WWR-T42-A10)



LMT Bracket 1520-WP



WWR-T42-A8 for IRC & IBC use:
4 - #10x1-1/2" Screws per Bracket into post. 4 - #10x1" Screws per Bracket into Rails.

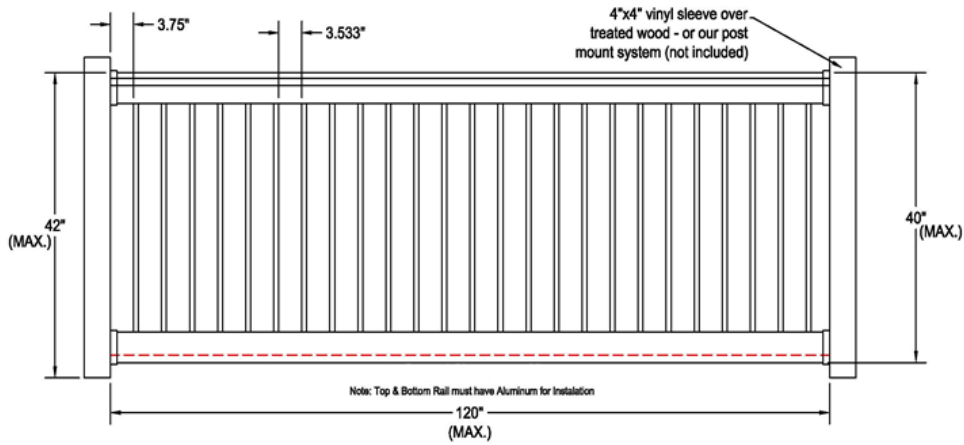
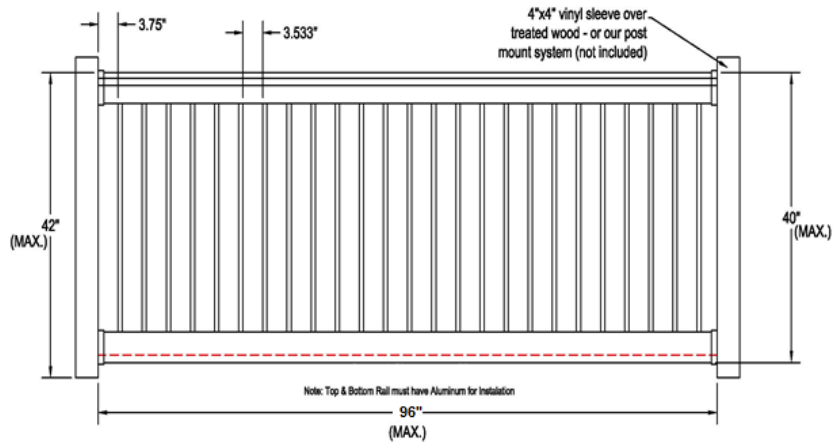


WWR-T42-A10 for IBC use:
4 - #10 x 2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.



WWR-T42-A10 for IRC use:
4 - #10 x 1-1/2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

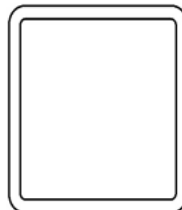
Figure 5 - Product Code: WWR-T42-A8 & WWR-T42-A10



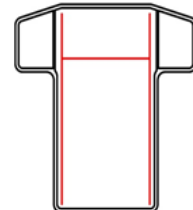
3/4" Dia. x .050" tk. Extruded 6063-T6 Aluminum Picket



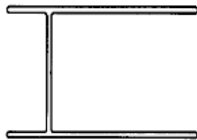
2" x 3.5" Vinyl Bottom Rail with Aluminum reinforcement



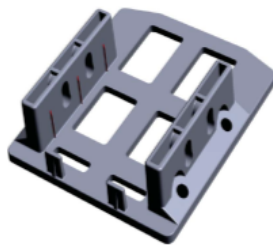
4" Vinyl Sleeve



Top T-Rail with Aluminum reinforcement



.075" or .065" tk. 6005-T5 Extruded Aluminum Reinforcement (.075" tk. Required for WWR-T42-R10)



LMT Bracket 1520-WP



WWR-T42-R8 for IRC & IBC use:
4 - #10x1-1/2" Screws per Bracket into post. 4 - #10x1" Screws per Bracket into Rails.

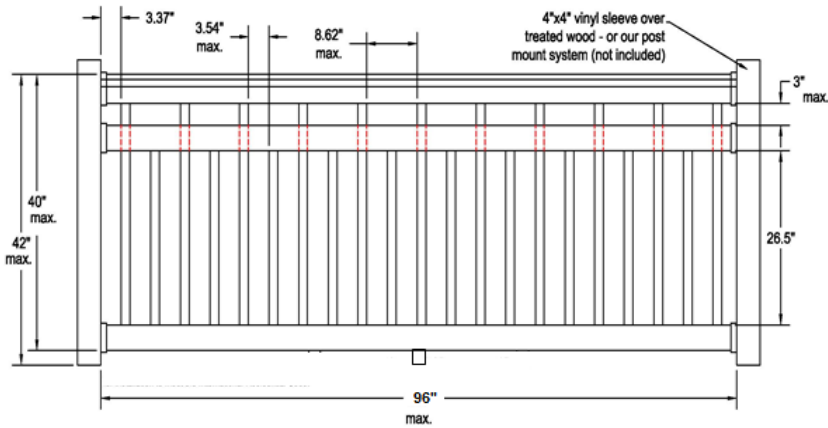


WWR-T42-R10 for IBC use:
4 - #10 x 2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

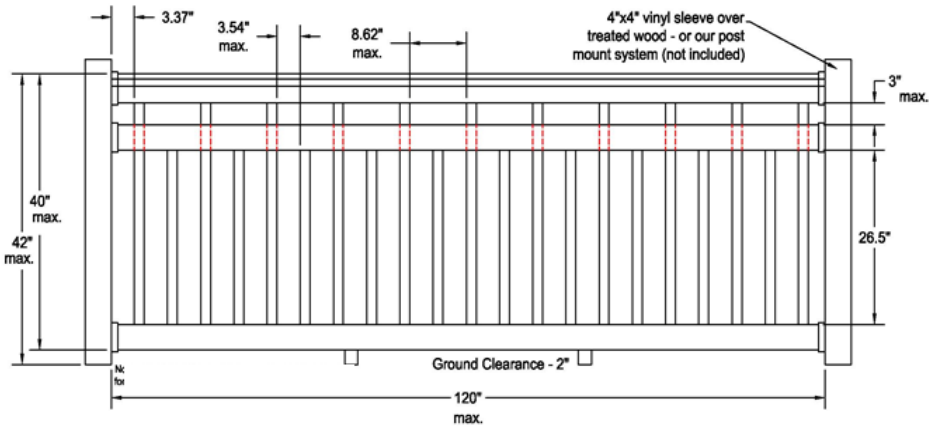


WWR-T42-R10 for IRC use:
4 - #10 x 1-1/2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

Figure 6 - Product Code: WWR-T42-R8 & WWR-T42-R10



WWR-T3R42-S8 Installation



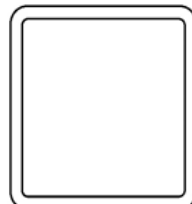
WWR-T3R42-S10 Installation



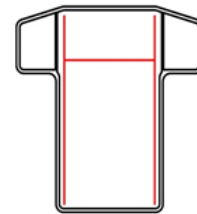
1.50" x 1.50" Vinyl Picket



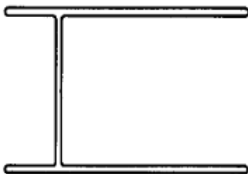
2" x 3.5" Bottom & Center Rail



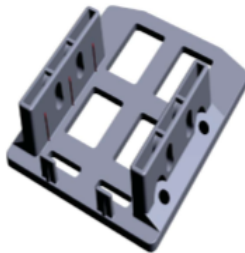
4" Vinyl Sleeve



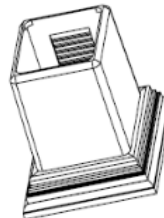
Top T-Rail with Aluminum reinforcement



.075" or .065" tk. 6005-T5 Extruded Aluminum Reinforcement (.075" tk. Required for WWR-T3R42-S10)



LMT Bracket 1520-WP



Foot Block
WWR-T3R42-S8: 1 required between posts
WWR-T3R42-S10: 2 required between posts



WWR-T3R42-S8 for IRC & IBC use:
4 - #10x1-1/2" Screws per Bracket into post. 4 - #10x1" Screws per Bracket into Rails.

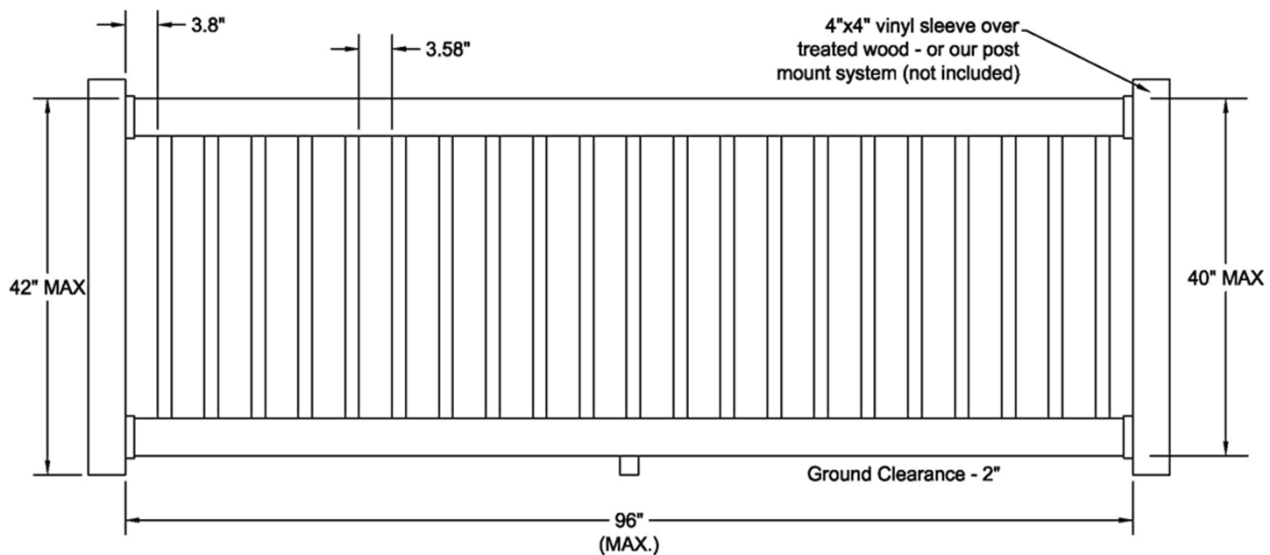


WWR-T3R42-S10 for IBC use:
4 - #10 x 2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

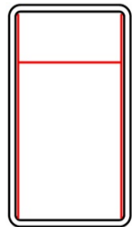


WWR-T3R42-S10 for IRC use:
4 - #10 x 1-1/2" Screws per Bracket into post. 4 - #10 x 1" Screws per Bracket into Rails.

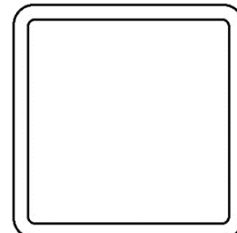
Figure 7 - Product Code: WWR-T3R42-S8 & WWR-T3R42-S10



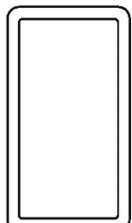
1.50" x 0.875" Vinyl Picket



2" x 3.5" Vinyl Top Rail with Aluminum Reinforcement



4" Vinyl Sleeve



2" x 3.5" Vinyl Bottom Rail



.075" tk. 6005-T5 Extruded Aluminum Reinforcement



To Meet IRC use:

4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.

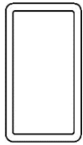
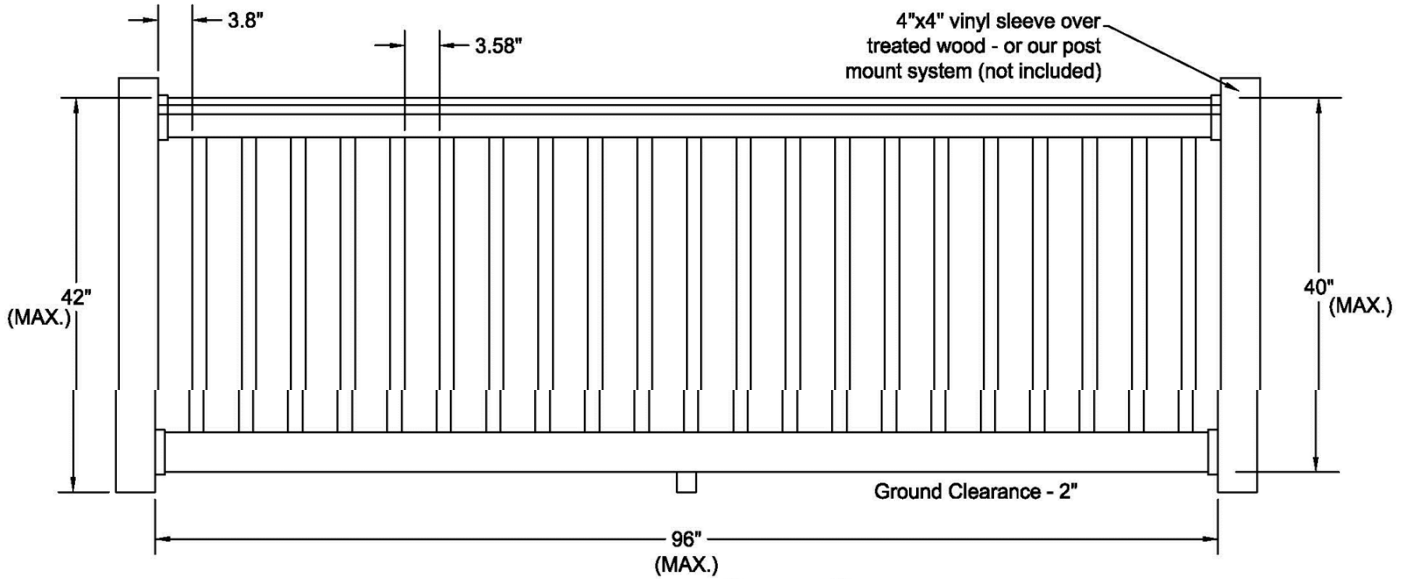


LMT Bracket 1219

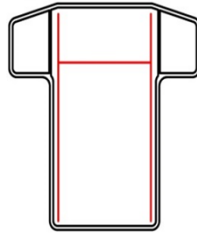


Foot Block
1 required between posts

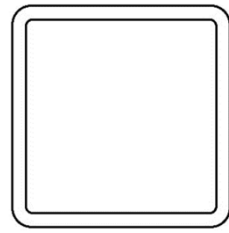
Figure 8 - Product Code: CWR-R42-E8



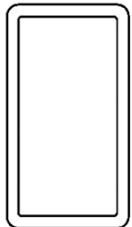
1.50" x 0.875" Vinyl Picket



Top T-Rail with Aluminum reinforcement



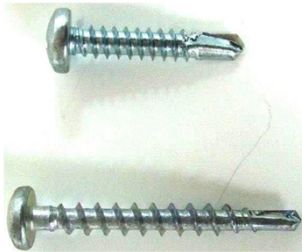
4" Vinyl Sleeve



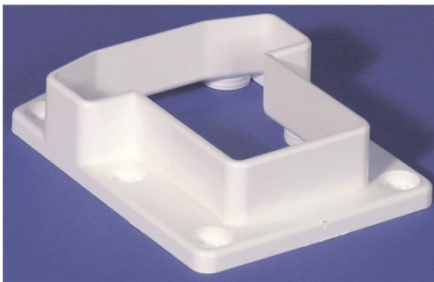
2" x 3.5" Vinyl Bottom Rail



.075" tk. 6005-T5 Extruded Aluminum Reinforcement



To Meet IRC use:
 4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.

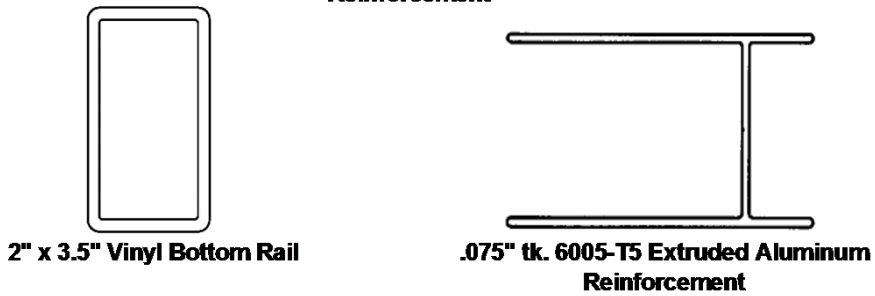
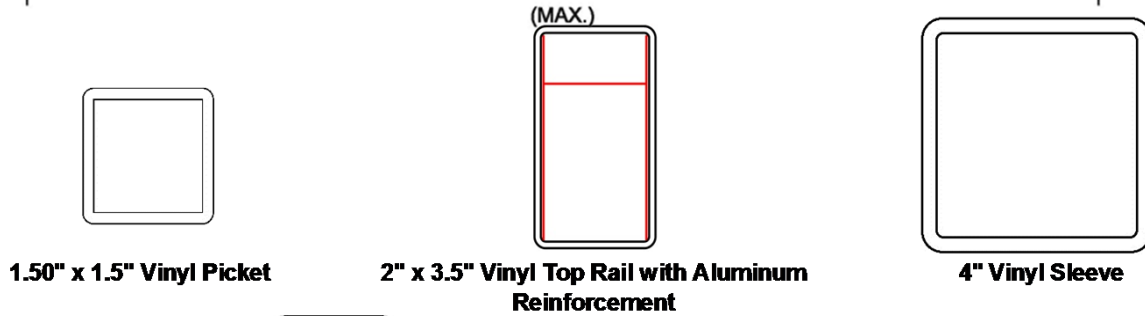
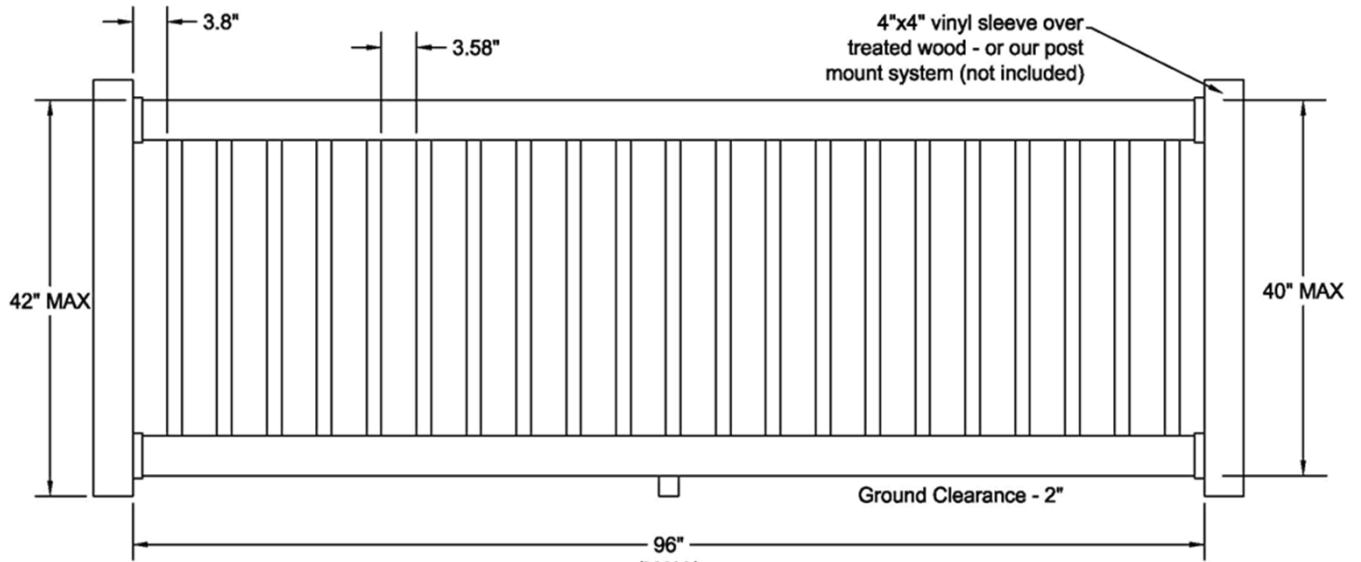


LMT Bracket 1182



Foot Block
 1 required between posts

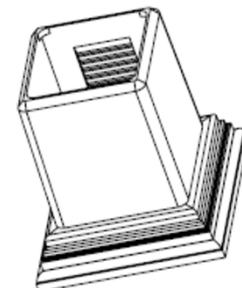
Figure 9 - Product Code: CWR-T42-E8



To Meet IRC use:
 4 - #10x1-1/2" Screws per Bracket
 into post. 2 - #10x1" Screws per
 Bracket into Rails.

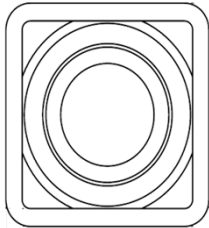
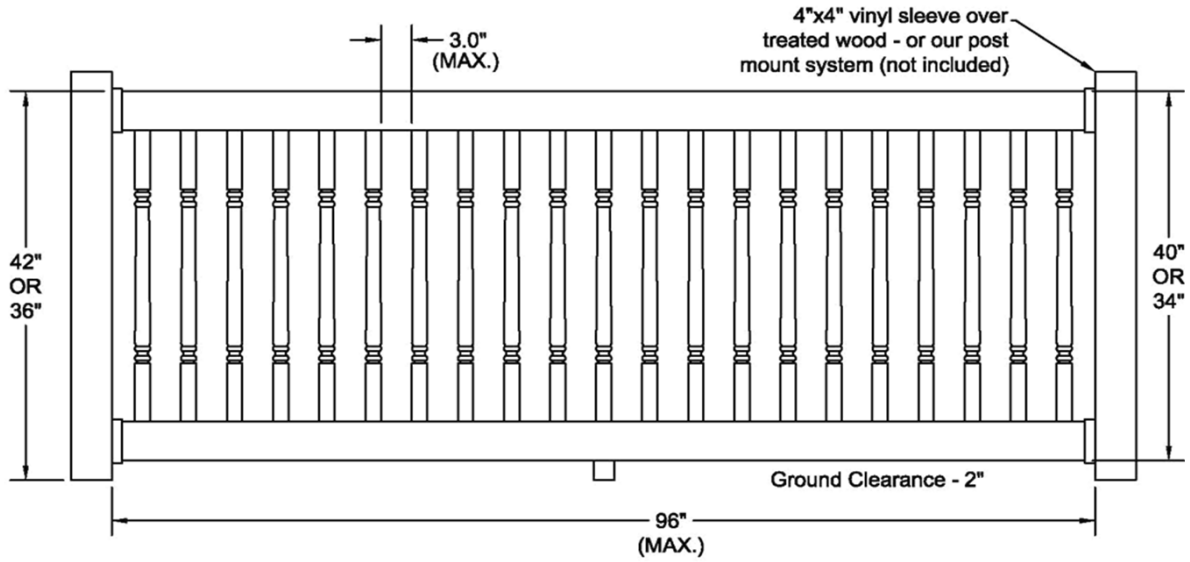


LMT Bracket 1219

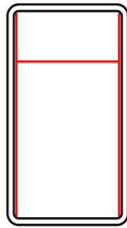


Foot Block
 1 required between posts

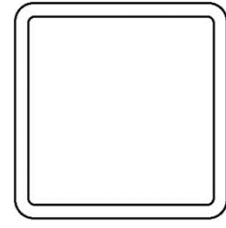
Figure 10 - Product Code: CWR-R42-S8



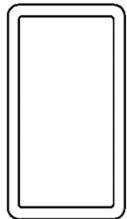
1.50\"/>



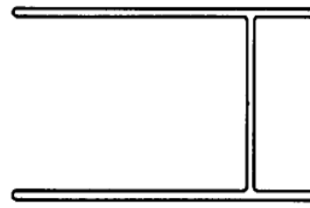
2\"/>



4\"/>



2\"/>



.075\"/>

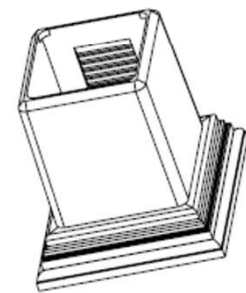


To Meet IRC use:

4 - #10x1-1/2\"/>



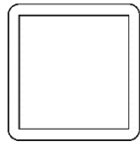
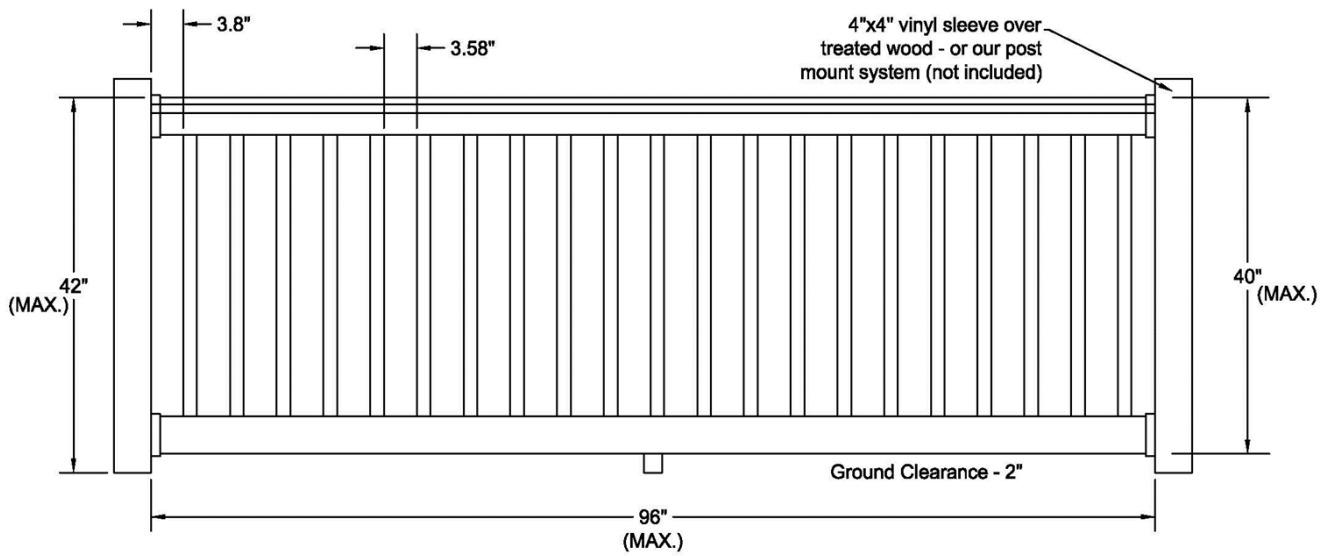
LMT Bracket 1219



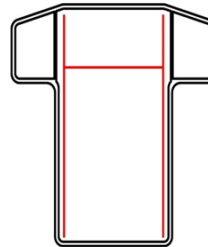
Foot Block

1 required between posts

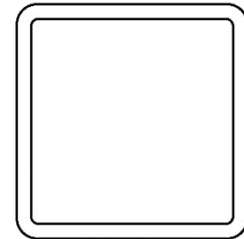
Figure 11 - Product Code: CWR-R42-C8



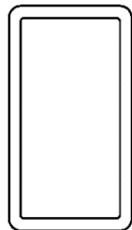
1.50" x 1.50" Vinyl Picket



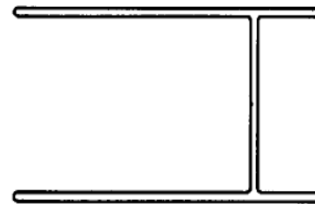
Top T-Rail with Aluminum reinforcement



4" Vinyl Sleeve



2" x 3.5" Vinyl Bottom Rail

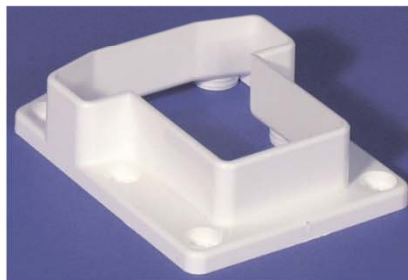


.075" tk. 6005-T5 Extruded Aluminum Reinforcement

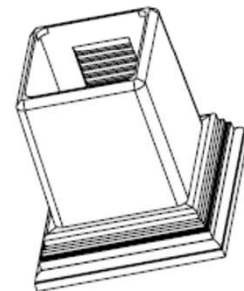


To Meet IRC use:

4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.



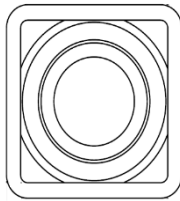
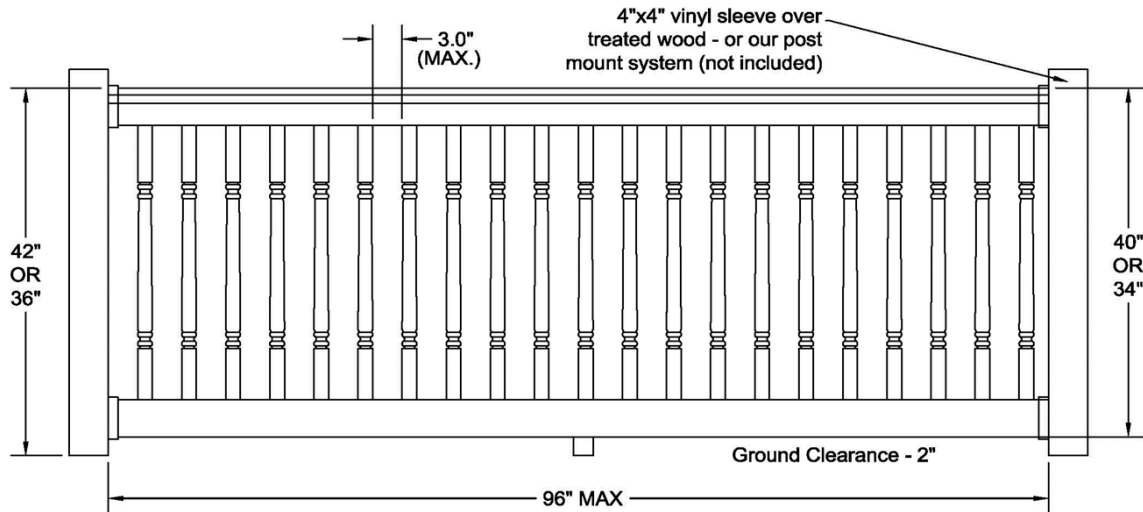
LMT Bracket 1182



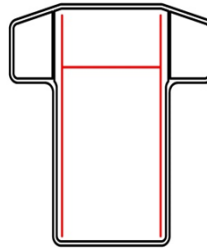
Foot Block

1 required between posts

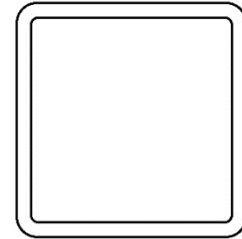
Figure 12 - Product Code: CWR-T42-S8



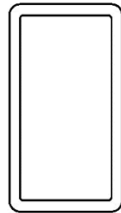
1.50\"/>



Top T-Rail with Aluminum reinforcement



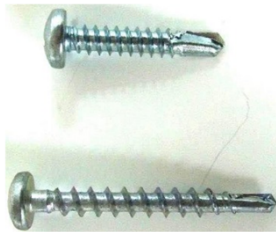
4\"/>



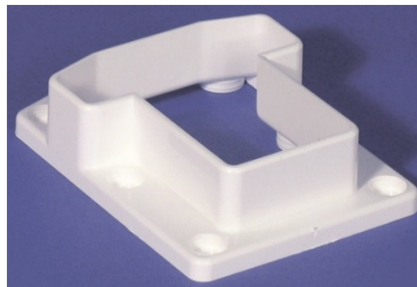
2\"/>



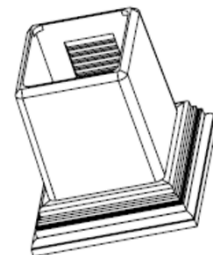
.075\"/>



To Meet IRC use:
 4 - #10x1-1/2\"/>

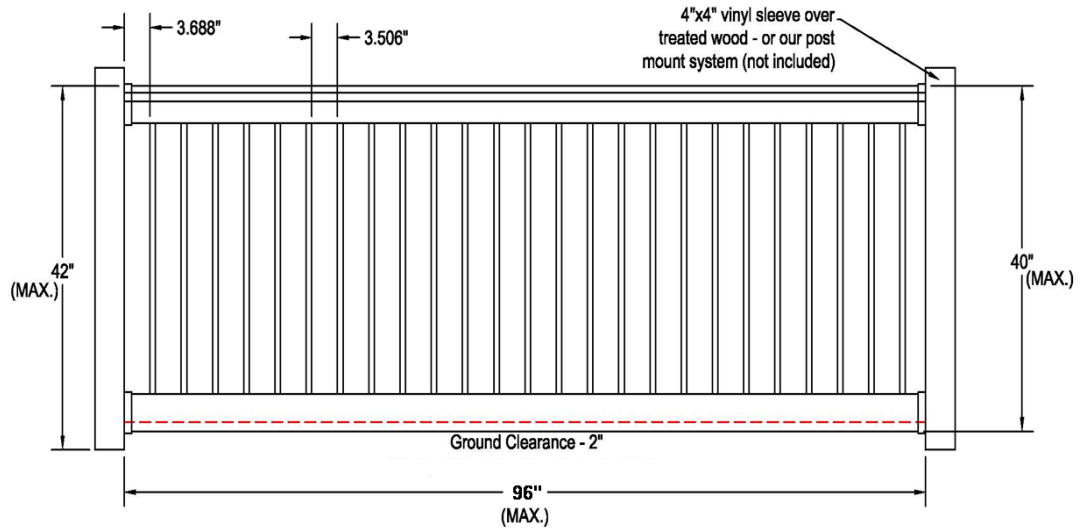


LMT Bracket 1182

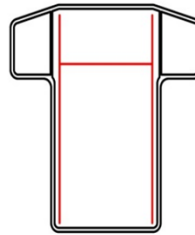


Foot Block
 1 required between posts

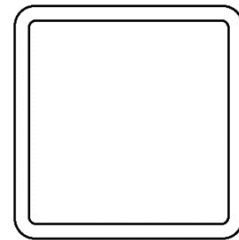
Figure 13 - Product Code: CWR-T42-C8



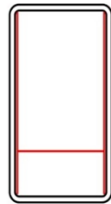
3/4" sq. x .050" tk. Extruded 6063-T6 Aluminum Picket



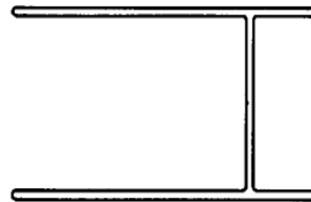
Top T-Rail with Aluminum reinforcement



4" Vinyl Sleeve



2" x 3.5" Vinyl Bottom Rail with Aluminum reinforcement

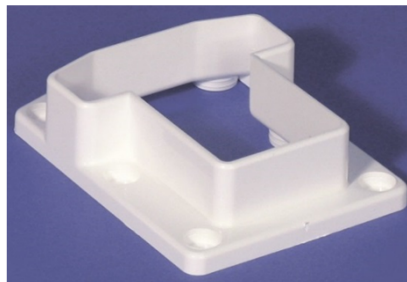


.075" tk. 6005-T5 Extruded Aluminum Reinforcement



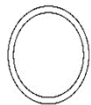
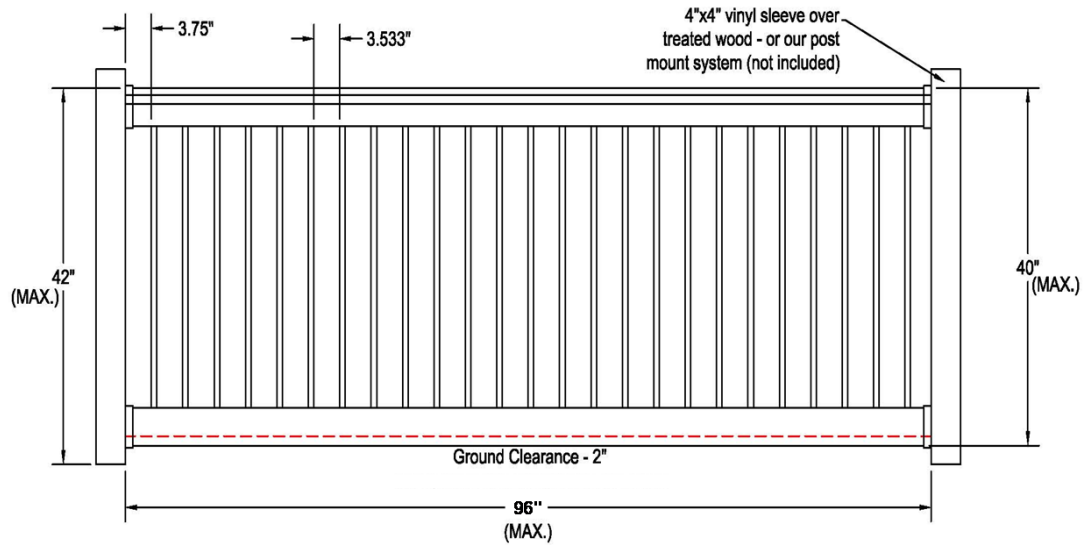
To Meet IRC use:

4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.

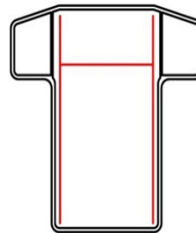


LMT Bracket 1182

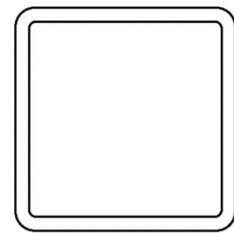
Figure 14 - Product Code: CWR-T42-A8



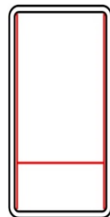
3/4" Dia. x .050" tk. Extruded 6063-T6 Aluminum Picket



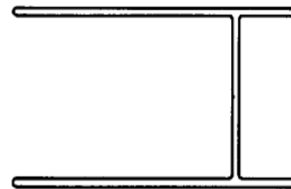
Top T-Rail with Aluminum reinforcement



4" Vinyl Sleeve



2" x 3.5" Vinyl Bottom Rail with Aluminum reinforcement



.075" tk. 6005-T5 Extruded Aluminum Reinforcement



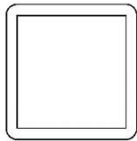
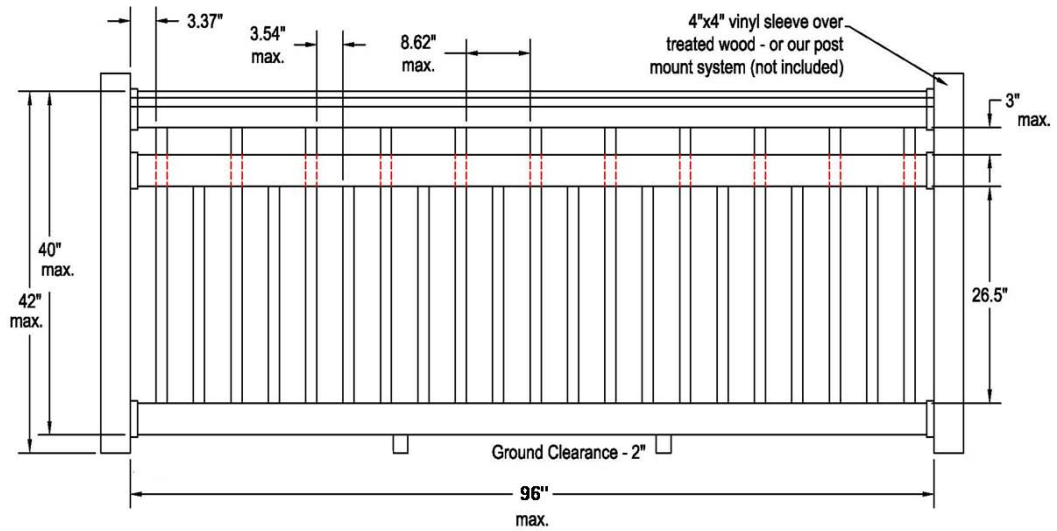
To Meet IRC use:

4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.

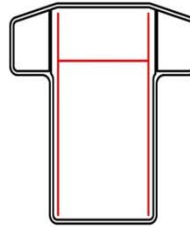


LMT Bracket 1182

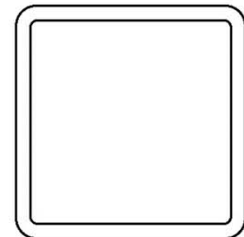
Figure 15 - Product Code: CWR-T42-R8



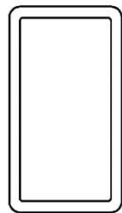
1.50" x 1.50" Vinyl Picket



Top T-Rail with Aluminum reinforcement



4" Vinyl Sleeve



2" x 3.5" Vinyl Bottom Rail



.075" tk. 6005-T5 Extruded Aluminum Reinforcement

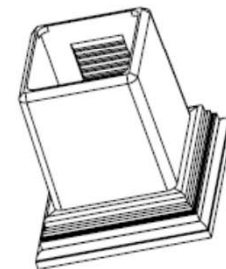


To Meet IRC use:

4 - #10x1-1/2" Screws per Bracket into post. 2 - #10x1" Screws per Bracket into Rails.



LMT Bracket 1182



**Foot Block
1 required between posts**

Figure 16 - Product Code: CWR-T3R42-S8

Product Labeling

The Guardrail Systems must be labeled with at least the following information:

1. The Guardrail name
2. Date Code
3. Manufacturer Name, Logo or Website
4. This **PER** Number & *Pei* **ES** Name or Logo

Acceptable Evaluation Marks**Product Documentation**

Straight Bracket Installation Instruction - From LMT Mercer Group Inc.

Straight Railing Kit Instructions - [USA Vinyl, LLC](#)

3-Piece Bracket System Installation Instructions - From LMT Mercer Group Inc.

A Railing Program Quality Manual - Dated: March 14, 2014

A Product Evaluation Service Agreement between *Pei Evaluation Service* and [USA Vinyl, LLC](#)

An Inspection Agreement between *Progressive Engineering Inc.* and [USA Vinyl, LLC](#)

A *Pei Evaluation Service* Agreement between **PER** Owner and Approved Manufacturer

A MSDS sheet for PVC Compounds - Dated: September 8, 1998

Pei test report No. 2013-0353 (A) - ASTM D7032 Guardrail Tests - Dated: March 4, 2013

Pei test report No. 2013-0353 (B) - ASTM D7032 Guardrail Test on a 8' Berkshire Railing System - Revised: December 15, 2015

Pei test report No. 2013-0353 (C) - ASTM D7032 Guardrail Test on a 10' Washington Railing System - Revised: January 21, 2014

Pei test report No. 2013-1365 Addendum A - 10' Birmingham Railing Tests - Dated: January, 2014

Pei test report No. 2013-1365 Addendum B - 10' Wilshire Railing Tests - Dated: January, 2014

Pei test report No. 2014-0537 - 4" Sphere Passage Test on Colonial Spindles in an Addison Railing System - Dated: March, 2014

Pei test report No. 2015-1235 - ASTM D7032 Guardrail Test on a 8' Classic Railing System (IRC) with a .075" Thick Aluminum Rail Reinforcement - Dated: October 27, 2015

Test Report showing compliance to ASTM G 154 and ASTM D 7032

Test Report for ASTM D 7032 Strength-Loss Testing

Test Report No. FH-1448 ASTM E 84-03a Surface Burning Characteristics of Building Materials

Test Report No. 01.13536.01.119 ASTM E 84-07 Surface Burning Characteristics of Building Materials

Test Report No. 67969.01-119-19 ICC-ES AC174 (effective July 1, 2006), Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems Section 5.0 and 5.2