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. This product has a Product Evaluation Service Agreement & Follow-up Inspection Service 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.

PER-12049

Initial Approval April, 2013 Re-Approved March, 2021

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

Report Owner (Manufacturer)

USA Vinyl, LLC 5795 Green Pointe Drive Groveport, OH 43125

Products

WXR-T42-A8/10	WXR-R36-R8DB	CXR-T42-E8
WXR-T42-C8/10	WXR-R36-S8DB	CXR-T42-R8
WXR-T42-R8/10	WXR-T42R3-S8/10	CXR-T42-S8
WXR-T42-S8/10	CXR-R42-A8	CXR-T42R3-S8
WXR-R42-A8/10	CXR-R42-C8	
WXR-R42-C8/10	CXR-R42-E8	
WXR-R42-R8/10	CXR-R42-R8	
WXR-R42-S8/10	CXR-R42-S8	
WXR-R36-A8DB	CXR-T42-A8	
WXR-R36-C8DB	CXR-T42-C8	

Evaluation Report Information

www.weatherables.com

USA Vinyl, LLC Contact: Jason Lott - Production Plant Manager

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Email: jlott@weatherables.com

Legend X X R X XX X X X I I I I I I I I 1 2 3 4 5 6 7 8

- 1. Bracket Style (C= 1 piece) (W = 2 piece)
- 2. Color: (W = White), (T = Tan), (K = Khaki),
- (B = Textured Black)
- 3. Railing: (Static) ("R" only)
- 4. Top Rail: (R = Rectangle) (T = T=Rail)
- 5. Railing Height / Mid-Rail: (36" or 42") (R3 = 3-Rail)
- 6. Spindle: (A = Alum. Square Spindle). (C = Colonial), (E = Rectangular), (R = Round Aluminum), (S = Square)
- 7. Width: (4-ft, 6-ft, 8-ft & 10-ft)
- 8. Optional: (S = Stair Railing)

General Details

The **USA Vinyl**, **LLC** guardrails are used for exterior guards for balconies, porches, stairs and decks. The top and bottom railings are manufactured with openings spaced under 4-in 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 post and post anchorage requirements are outside the scope of this report.

Product Descriptions

The **USA Vinyl**, **LLC** guardrail parts are co-extruded using a Polyvinyl Chloride Resin (PVC). Three colors are offered, white, tan and khaki. The guardrails are designed for a maximum installed height of 42-in with a maximum length of 96-in or 120-in when measured between posts. Each post is a vinyl sleeve over a 4-in x 4-in timber. The top rails are strengthened with .065-in, .075-in or .100-in thick extruded aluminum rail reinforcement. The bottom rails are either supported by crush blocks or use of an 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 the figures shown on pages 3 through 10 for exact specifications and requirements for each model of guardrail.

General Product Usage

- 1.The **USA Vinyl**, **LLC** guardrail systems shall be installed in accordance with the Classic Straight Railing, Classic Stair Railing, Premium Straight Railing, Premium Stair Railing and Premium Deck Board Railing Installation Instructions supplied by **USA Vinyl**, **LLC** and the conditions of this **PER**. A copy of the Installation Instructions noted earlier 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**, **LLC** guardrails are outside the scope of this **PER**. All framing shall follow applicable codes or be designed by a licensed Engineer. Stairway handrails shall be designed and constructed in accordance with the applicable codes.
- 3. All **USA Vinyl**, **LLC** guardrails shall be fastened to wood framing in accordance with the bracket systems described in Table 1 and the figure on page 4 through 15 accordingly. Crush blocks shall be fastened to the bottom rail and to 1-in thick minimum treated lumber deck board using (2) #8 x 1-in long stainless steel wood screws unless otherwise noted.
- 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.

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 as product was tested. See Table 1 and Figure 1 through Figure 16 for details
- 2. Limited to Type V-B construction

Page 1 of 10

Table 1 - Model Specific Code Compliance

Product Code 1,2	20	2015		2012 Aluminum Channel in		Aluminum Channel in	Brackets Allowed
Product Code	IRC	IBC	IRC	IBC	Top Rail Required	Bottom Rail Required ⁴	Brackets Allowed
WXR-T42-A8	Х	Х	Х	Х	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-T42-A10	Х	X_3	Х	X_3	Yes075" or 100"6	Yes065", .075" or .100"	LMT 1422-CM or 1520-WP
WXR-T42-C8	Х	Χ	Χ	Χ	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-T42-C10	Х	X^3	Χ	X^3	Yes075" or .100" ⁶	No ⁴	LMT 1422-CM or 1520-WP
WXR-T42-R8	Х	Х	Х	Х	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-T42-R10	Х	X ³	Х	X ³	Yes075 or .100"6	Yes065", .075" or .100"	LMT 1422-CM or 1520-WP
WXR-T42-S8	Х	Х	Х	Х	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-T42-S10	Х	X ³	Х	X ³	Yes075" or 100"6	No ⁴	LMT 1422-CM or 1520-WP
WXR-R42-A8	Х	Χ	Χ	Χ	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-R42-A10	Χ	Х	Χ	Χ	Yes100"	Yes065", .075" or .100"	LMT 1422-CM
WXR-R42-C8	Х	Χ	Χ	Χ	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-R42-C10	Х	Х	Х	Χ	Yes100"	No ⁴	LMT 1422-CM
WXR-R42-R8	Х	Χ	Х	Χ	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-R42-R10	Х	Χ	Χ	Χ	Yes100"	Yes065", .075" or .100"	LMT 1422-CM
WXR-R42-S8	Х	Χ	Χ	Χ	Yes075" or .65"	No ⁴	LMT 1422-CM or 1520-WP
WXR-R42-S10	Х	Χ	Χ	Χ	Yes100"	No ⁴	LMT 1422-CM
WXR-R42-A8DB	Х	Χ	Χ	Χ	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-R42-C8DB	Х	Χ	Х	Χ	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-R42-R8DB	Х	Χ	Х	Χ	Yes065" or .075"	Yes065" or .075"	LMT 1422-CM or 1520-WP
WXR-R42-S8DB	Χ	Х	Χ	Χ	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-T42R3-S8	Х	Χ	Х	Χ	Yes065" or .075"	No ⁴	LMT 1422-CM or 1520-WP
WXR-T42R3-S10	Х	X^3	Х	X^3	Yes075" or .100" ⁶	No ⁴	LMT 1422-CM or 1520-WP
CXR-R42-A8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1219
CXR-R42-C8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1219
CXR-R42-E8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1219
CXR-R42-R8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1219
CXR-R42-S8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1219
CXR-T42-A8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1182
CXR-T42-C8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1182
CXR-T42-E8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1182
CXR-T42-R8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 1182
CXR-T42-S8	Х		Χ		Yes075"	No ⁴	LMT 1422CM, 1520-WP or 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" = 8-ft 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-in stainless steel screws or as noted in Table 2 when using the 1520-WP bracket. These longer screws are not provided with railing kits and shall be purchased separately by the installer.
- 4. Supplied footblocks shall be installed for all cases where an aluminum channel is not used in the bottom rail. See the figures as denoted throughout this report for more details.
- 5. For this profile, the 1422-CM bracket requires the use of the .065" aluminum top rail reinforcement when the span exceeds 8-ft.
- 6. Must use the .100" channel with the 1422-CM brackets for the 10-ft span.
- 7. See Table 2 for fastening requirements

Table 2 - Guardrail Fastening Requirements

Rail Profile ^{1,2}	Maximum Span	Connection	Bracket	Rail Reinforcement	Fastener	Qty*
		Bracket to Post		0.065"	#10 x 1-1/2-in Pan-head/Phillips self-Drilling SS screws	4
	8'	Bracket to Guardrail	LMT 1422-CM		#10 x 1" Pan-head/Phillips SS steel self-drilling screws	2
		Bracket to Bottom Guardrail			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	2
WXR-R42-XX & WXR- T42-XX Series Guardrails	10'	Bracket to Post	LMT 1422-CM	0.100"	#10 x 1-1/2-in Pan-head/Phillips self-Drilling SS screws	4
		Bracket to Guardrail			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
		Bracket to Bottom Rail			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
	8'	Bracket to Post	1520-WP	0.075"	#10 x 2-in Pan-head/Phillips self-Drilling SS screws**	4
		Bracket to Guardrail			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
		Bracket to Bottom Guardrail ⁴			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
WXR-T42-X10	10'	Bracket to Post		0.075"	#10 x 2-in Pan-head/Phillips self-Drilling SS screws**	4
		Bracket to Guardrail	1520-WP		#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
		Bracket to Bottom Guardrail ⁴			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	4
CXR-R42-XX & CXR- T42-XX Series Guardrails	8'	Bracket to Post	LMT 1182 /	0.075"	#10 x 2-in Pan-head/Phillips self-Drilling SS screws**	6/4
		Bracket to Guardrail	1219		#10 x 1" Pan-head/Phillips SS steel self-drilling screws	2
		Bracket to Bottom Guardrail ⁴			#10 x 1" Pan-head/Phillips SS steel self-drilling screws	2

Notes:

- Baluster options are not included and do not affect bracket fastening. See Table 1 for Baluster options.
- 2. Rail profiles using "DB" or "R3" must follow fastening defined for the bracket and rail span desired, see Table 1.
- 3. Brackets must be installed with longer #10 x 2-in stainless steel screws or as noted in Table 2 when using the 1520-WP
- bracket. These longer screws are not provided with railing kits and shall be purchased separately by the installer.
- * Per Bracket
- ** The #10 x 2-in fastener was used to the 10-ft length to for IBC use. The #10 x 1-1/2-IN can be used for anything under 10-FT spans.

WXR-T42-A8(A10), WXR-T42-C8(C10), WXR-T42-R8(R10) & WXR-T42-S8(S10) 4"x4" vinyl sleeve over 3.688" 3.506" treated wood - or our post mount system (not included) 40" (MAX.) (MAX.) Ground Clearance - 2" Note: Top & Bottom Rail must have Aluminum for Instalation 120" (MAX.) R.180 .06 WALL MIN. 2" x 3.5" Vinyl Bottom Rail 1.50" x 1.50" Thermo-Formed Top T-Rail with Aluminum 1.5" x 1.5" Co-Extruded PVC reinforcement Spindle (No. 3005) (WXR-T42-C8/10) Baluster (WXR-T42-S8/10) 1.5" Foot Block LMT Bracket 1520-WP **Alternative LMT** 4" x 4" Co-Extruded **Bracket 1422-CM PVC Plastic Sleeve** NON EXPOSED ±.03 NON .065" Aluminum Reinforcement .100" Aluminum Reinforcement .075" Aluminum Reinforcement (1422-CM Bracket) (1422-CM Bracket) (1520-WP Bracket)

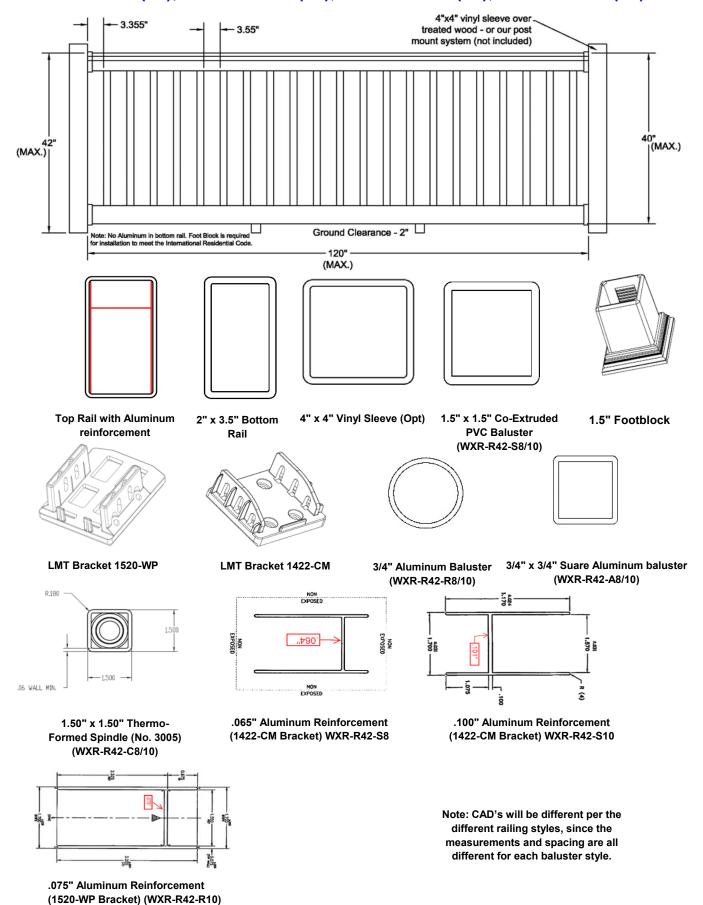
3/4" Round Aluminum Baluster (WXR-T42-R8/10)

3/4" x 3/4" Suare Aluminum baluster (WXR-T42-A8/10)

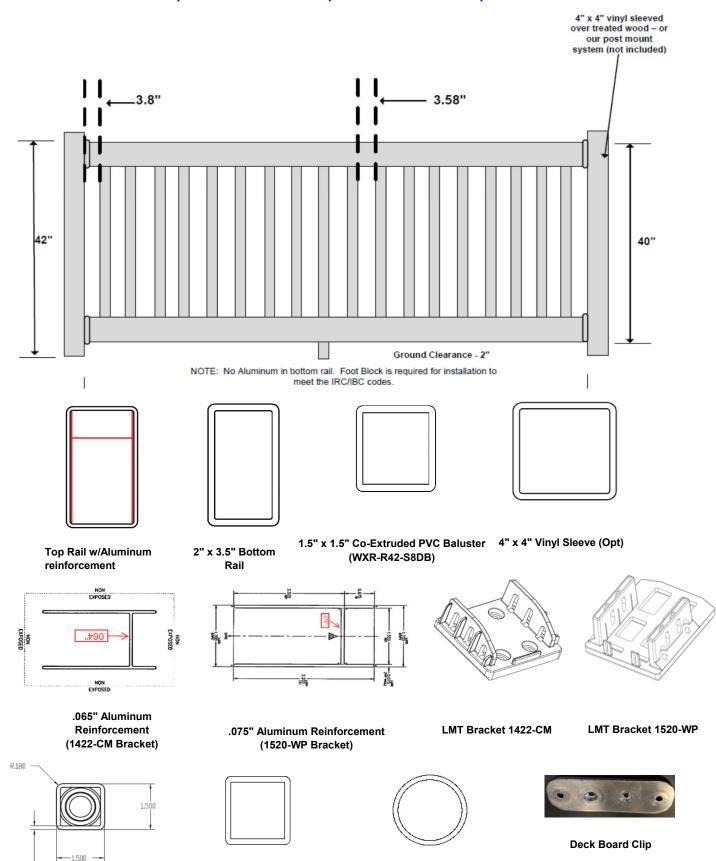
Note: CAD's will be different per the different railing styles, since the measurements and spacing are all

different for each baluster style.

WXR-R42-A8(10), WXR-R42-C8(10), WXR-R42-R8(10), WXR-R42-S8(10)



WXR-R42-A8DB, WXR-R42-C8DB, WXR-R42-R8DB, WXR-R42-S8DB



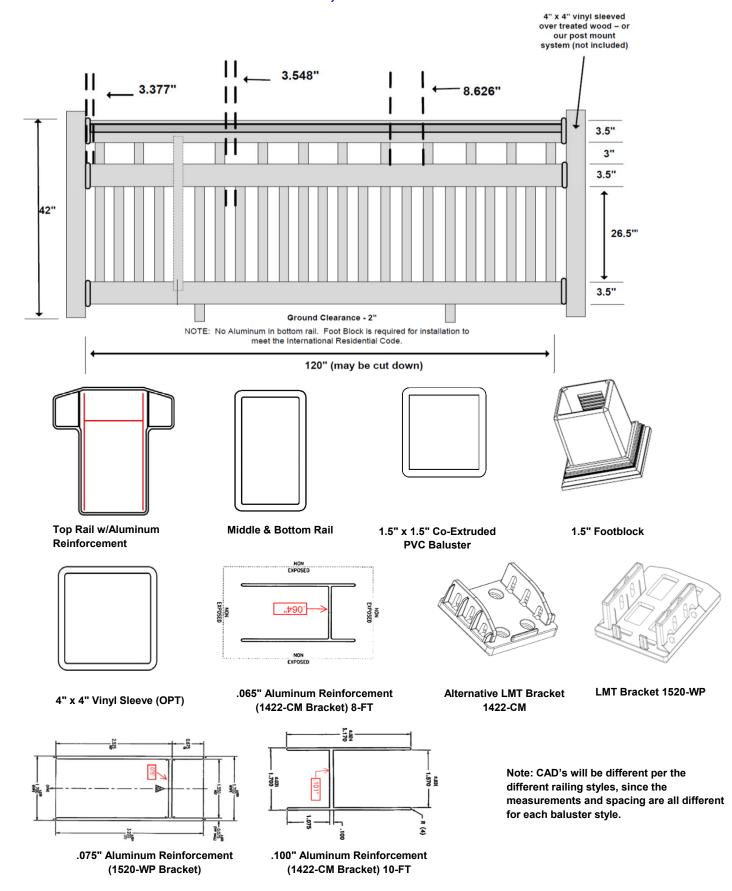
1.50" x 1.50" Thermo-Formed Spindle (No. 3005) (WXR-R42-C8DB)

.06 WALL MIN.

3/4" x 3/4" Suare Aluminum baluster (WXR-R42-A8DB)

3/4" Aluminum Baluster (WXR-R42-R8DB) Note: CAD's will be different per the different railing styles, since the measurements and spacing are all different for each baluster style.

WXR-T42R3-S8, WXR-T42R3-S10



4" x 4" vinyl sleeved

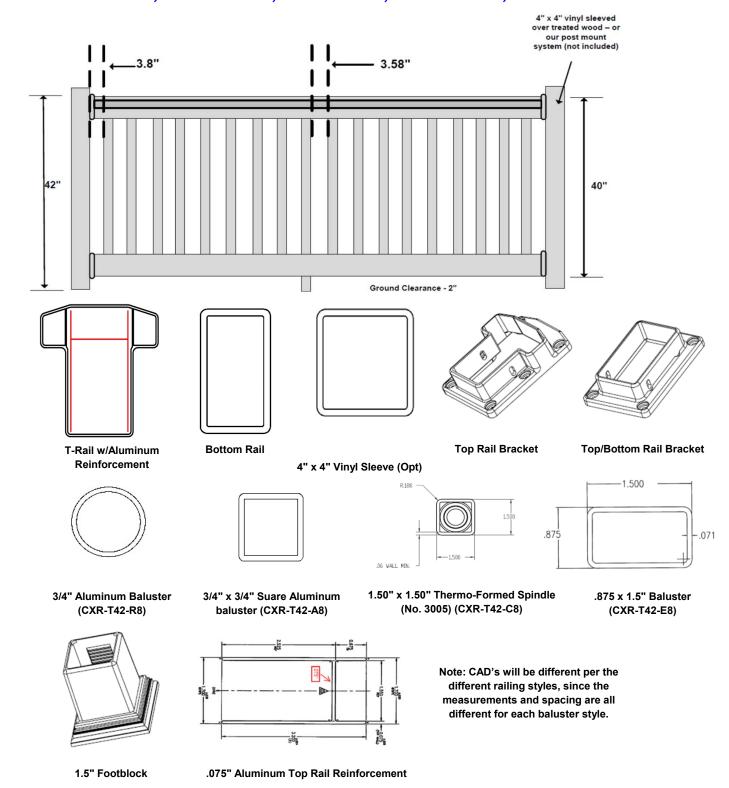
CXR-R42-A8, CXR-R42-C8, CXR-R42-E8, CXR-R42-R8, CXR-R42-S8

over treated wood - or our post mount system (not included) 3.58" 42" 40" Ground Clearance - 2" NOTE: No Aluminum in bottom rail. Foot Block is required for installation to meet the IRC/IBC codes. Top/Bottom Rail Bracket 1.5" x 1.5" Co-Extruded 4" x 4" Vinyl Sleeve Top Rail w/Aluminum **Bottom Rail** (LMT 1182) Reinforcement **PVC Baluster** (OPT) (CXR-R42-S8) -1.500 .875 -.071 .06 VALL MIN. 3/4" x 3/4" Suare 3/4" Aluminum 1.50" x 1.50" Thermo-Formed Spindle Aluminum baluster (CXR-**Baluster** .875 x 1.5" Baluster (CXR-R42-E8) (No. 3005) (CXR-R42-C8) R42-A8) (CXR-R42-R8) Note: CAD's will be different per the different railing styles, since the measurements and spacing are all different for each baluster style.

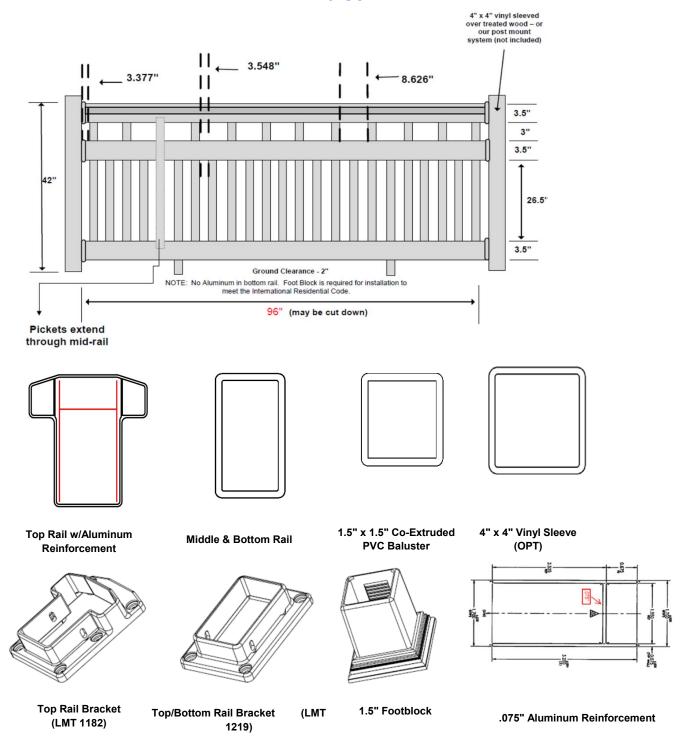
1.5" Footblock

.075" Aluminum Top Rail Reinforcement

CXR-T42-A8, CXR-T42-C8, CXR-T42-E8, CXR-T42-R8, CXR-T42-S8



CXR-T42R3-S8



Note: CAD's will be different per the different railing styles, since the measurements and spacing are all different for each baluster style.

Tested to

ASTM D7032-17a - 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

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

A Product Evaluation Service Agreement between Pei Evaluation Service® and USA Vinyl, LLC

A Follow-up Inspection Service Agreement between *Progressive Engineering Inc.* and USA Vinyl, LLC

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

USA Vinyl Railing Program Quality Manual - Dated: 7/1/2019

Weatherables Classic Vinyl Railing - Installation Guide - USA Vinyl, LLC

Weatherables Premium Vinyl Railing - Installation Guide - USA Vinyl, LLC

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

A SDS sheet for PVC Compounds - Dated: 10/31/2015

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. 2013-0353 (D) - Perform ASTM D7032 UV Resistance Testing on Three (3) Colors for USA Vinyl- Revised: August 27, 2013

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 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

Test Report No. 77831.02-119-19 ICC-ES AC174 (effective March 1, 2007), Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails)

Pei test report No. 2020-6140 (A) - ASTM D7032 Guardrail Test on a 10' Berkshire Railing System with a .100" Thick Aluminum Rail Reinforcement - Dated: July 10, 2020, Revised on August 5, 2020.

Pei test report No. 2020-6140 (B) - ASTM D7032 Guardrail Test on a 8' Berkshire Railing System with a .065" Thick Aluminum Rail Reinforcement - Dated: July 10, 2020, Revised on August 5, 2020.