ASTM E330
Performance Test Report

Rendered To:
Barrier Fencing Systems

Report No.:
QCT22-6610.02

Series/Product:
3" Barrier Fence

Test Date(s):
April 15, 2022

Report Date:
April 8, 2022

MANUFACTURER: Barrier Fence
101 Malden Cres,
Saskatoon, SK S7K 3J7

DISTRIBUTOR: Barrier Fence
101 Malden Cres,
Saskatoon, SK S7K 3J7, Canada

SERIES/MODEL: 3" Barrier Fence

Summary of Results	
Test Procedure/Standard	**Details**
Uniform Design Load (ASTM E330-14)	1530 Pa (32.0 psf), PASS
Uniform Proof Load (ASTM E330-14)	2300 Pa (48.0 psf), PASS

Reference Report No. QCT22-6610.02 for complete specimen description and test results.

Project Summary:

Perform uniform load testing per ASTM E330 on a 3" Barrier Fence. The specimen was supplied by Barrier Fence and was tested at a certified testing facility. Test specimen description and test results are reported herein.

Procedure:

Testing and reporting were conducted in accordance with:

ASTM E330-14	*Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

Test Specimen Description:

Overall Size:	2438 mm (96.00 in) wide x 3353 mm (132.00 in) high
Fence Panel Size:	2261 mm (89.00 in) wide x 305 mm (12.00 in) high

Frame Construction:

The fence panels consisted of EPS bead board insulation with 24 Ga steel skin. Eight panels were interlocked vertically. The perimeter of the fence was captured by 24 Ga steel U-channels attached to the panels on the interior and exterior using #10 x 1-1/2" screws spaced 1" from ends and 30" on center at top and bottom and 1" from ends and at center of each panel at the sides. The side channels were attached to the vertical posts using 1/4-14 x 1-1/4" Teks as shown in Photo #1. The vertical posts were 3 1/2" x 3-1/2" x 0.095" thick steel tubes. 8' long 3" x 3" x 3/16" HSS reinforcement posts were inserted 60" into the vertical posts and secured on the high-pressure side using three 1/4-14 x 1-1/4" Teks spaced 1" from top and bottom and at center.

Installation:

The specimen was installed into a 2-layer 2x10 pine buck with a 1/4" perimeter joint. The reinforcement posts were restrained 1" below the bottom of the fence on the interior and exterior using 3" x 3" x 3/16" steel angles welded to the reinforcement posts and attached to the buck using 1/4 x 3" lag screws. See Photo #1

Test Procedure:

The pine buck was attached to a rigid wall and the specimen was covered with a 2-mil plastic film to create a pressurizeable volume behind the fence. Loads were applied for 10 seconds. Deflection was measured where shown in Photo #1. The reported net deflection of the horizontal panel member is B2 minus the average of B1 and B3. The reported net deflection of the vertical post is A1 minus A2.

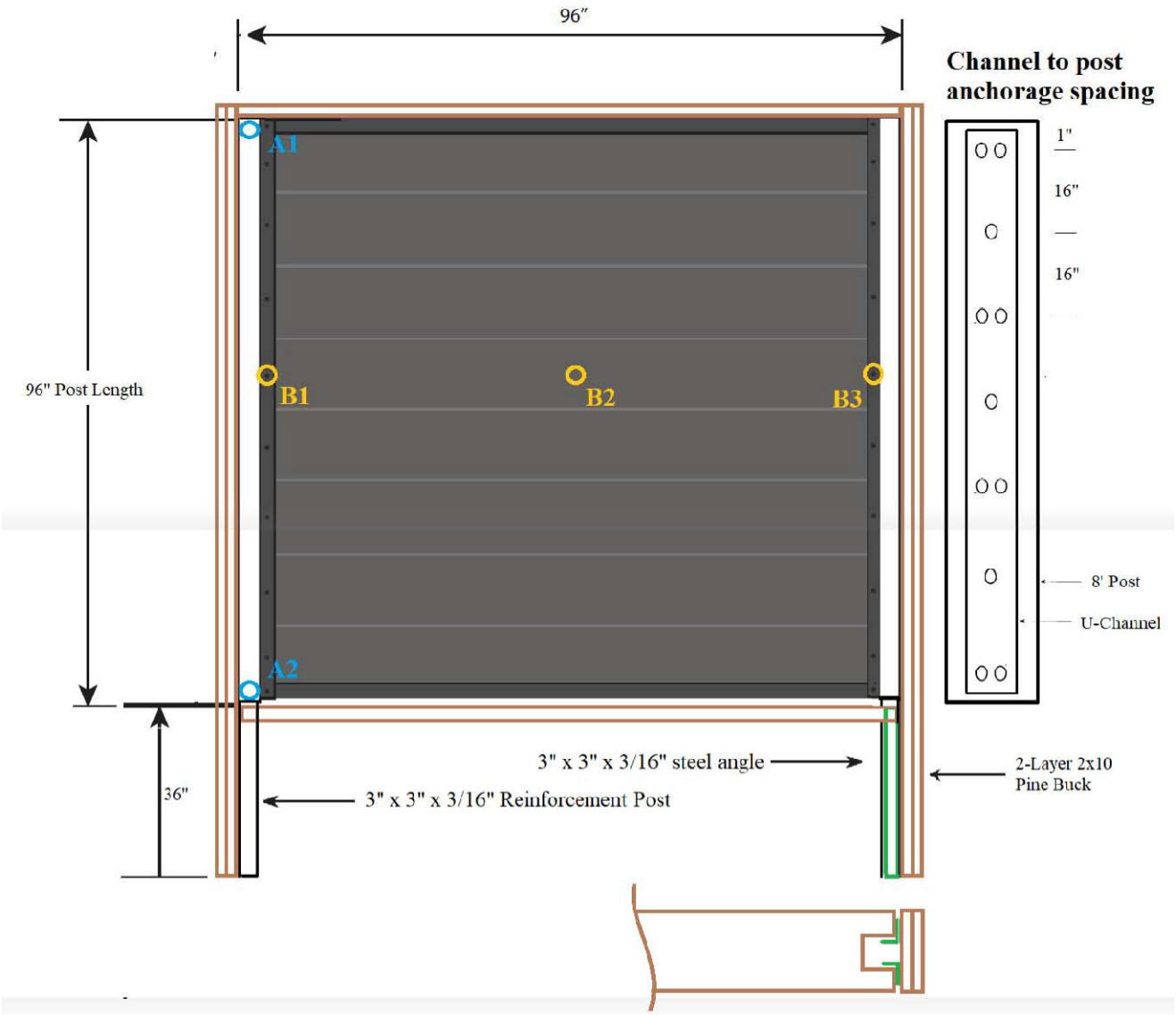


Photo #1: Specimen Diagram

Test Results:

Title of Test	Results	Allowed
Uniform Design Load per ASTM E330-14		
2-mil plastic film was used to prevent air leakage during testing. It is the opinion of the test technician that this film did not influence the results of the test		
Specimen #1		
Applied Load:	1530 Pa (32.0 psf)	
Vertical Post Above Anchorage	**PASS**	
Span (L):	2413 mm (95 in)	No permanent
Net Deflection	58.9 mm (2.32 in)	damage
Horizontal Panel Member	**PASS**	
Span (L):	2210 mm (87 in)	No permanent
Net Deflection:	5.0 mm (0.20 in)	damage
Uniform Proof Load per ASTM E330-14		
2-mil plastic film was used to prevent air leakage during testing. It is the opinion of the test technician that this film did not influence the results of the test		
Specimen #1		
Applied Load:	2300 Pa (48.0 psf)	
Vertical Post Above Anchorage	**PASS**	
Span (L):	2413 mm (95 in)	
Net Deflection:	103.9 mm (4.09 in)	No permanent
Net Permanent Set:	17.0 mm (0.67 in)	damage
Horizontal Panel Member	**PASS**	
Span (L):	2210 mm (87 in)	
Net Deflection:	7.9 mm (0.31 in)	No permanent
Net Permanent Set:	0.1 mm (0.01 in)	damage

Test Results (continued):

The specimen resisted a 64 psf load, however, permanent damage to the reinforcement posts was evident after previous loads. After the completion of testing, an analysis of the load vs permanent set graph led to the conclusion that failure occured at approximately 50 psf. See Photo #2.

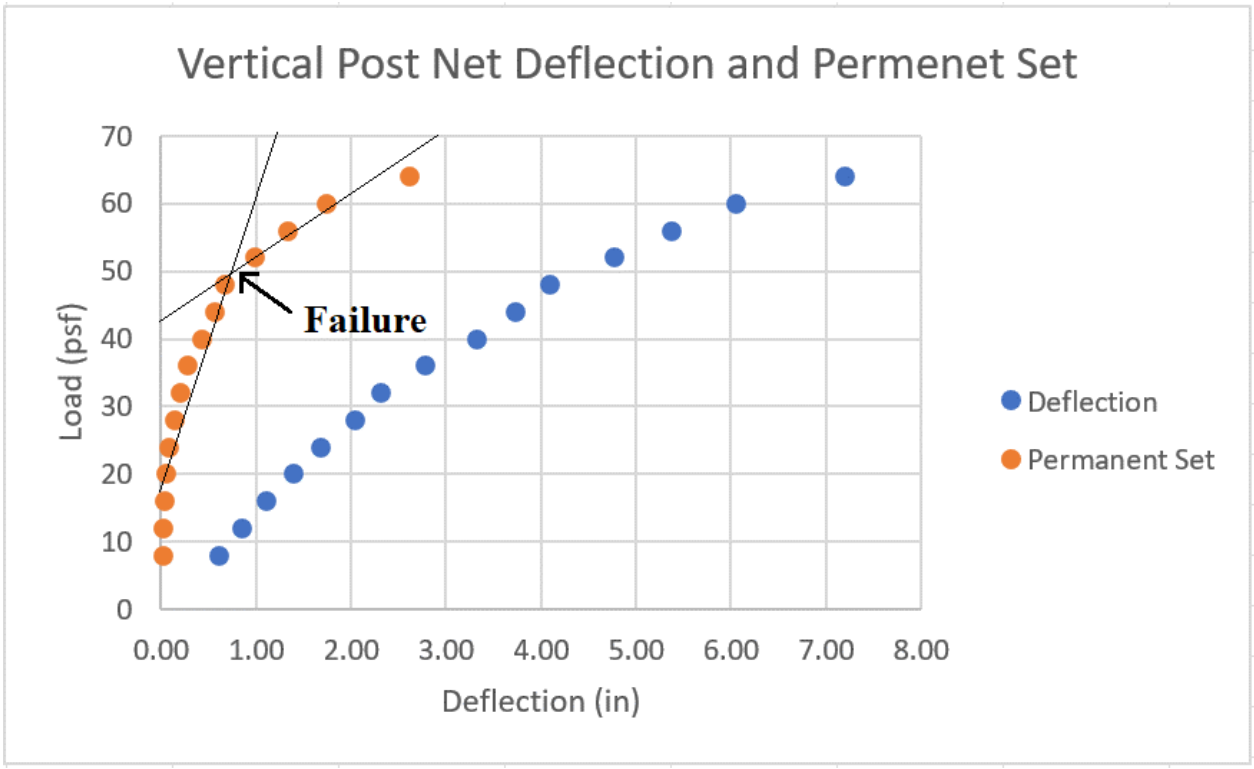


Photo #2: Span A Net Deflection and Net Permanent Set

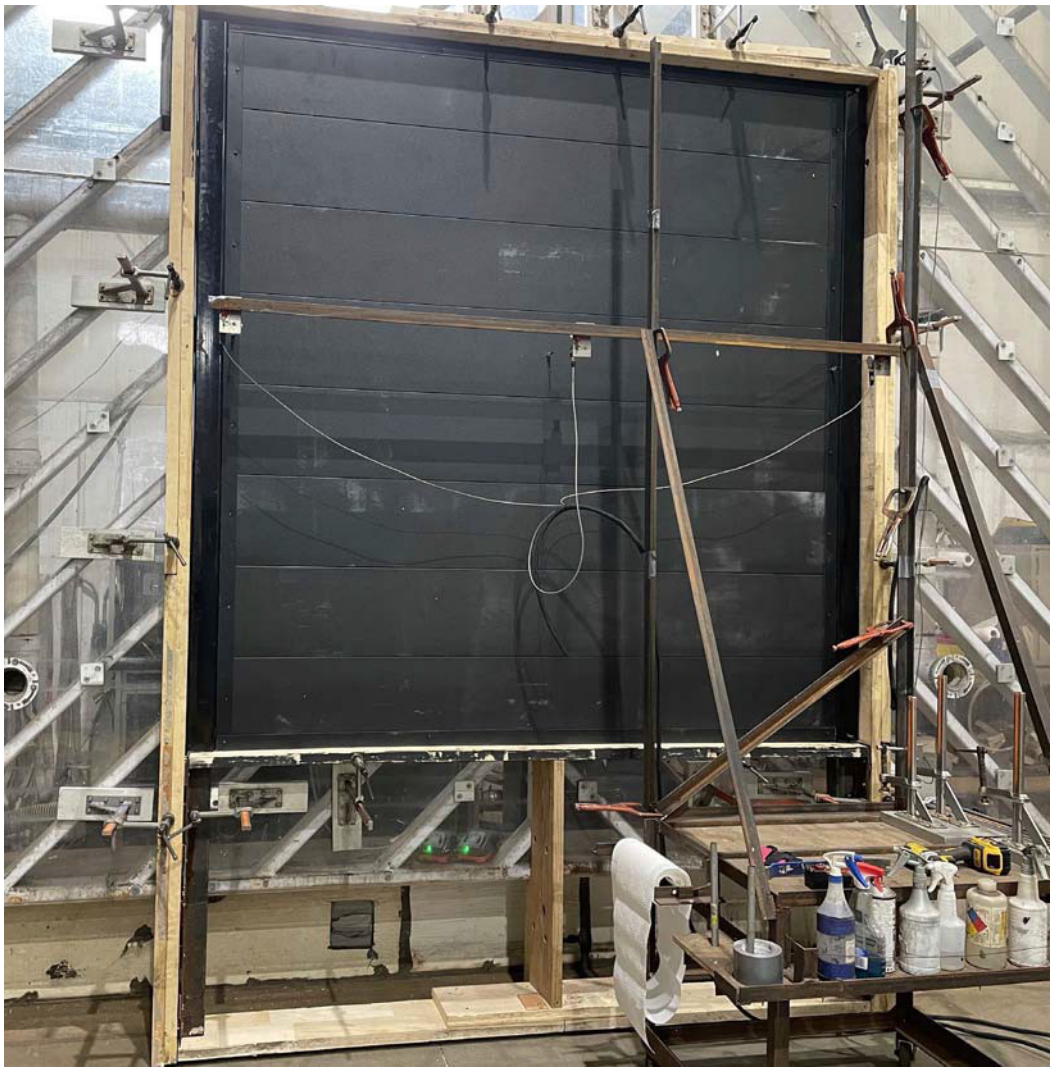


Photo #3: Test Setup

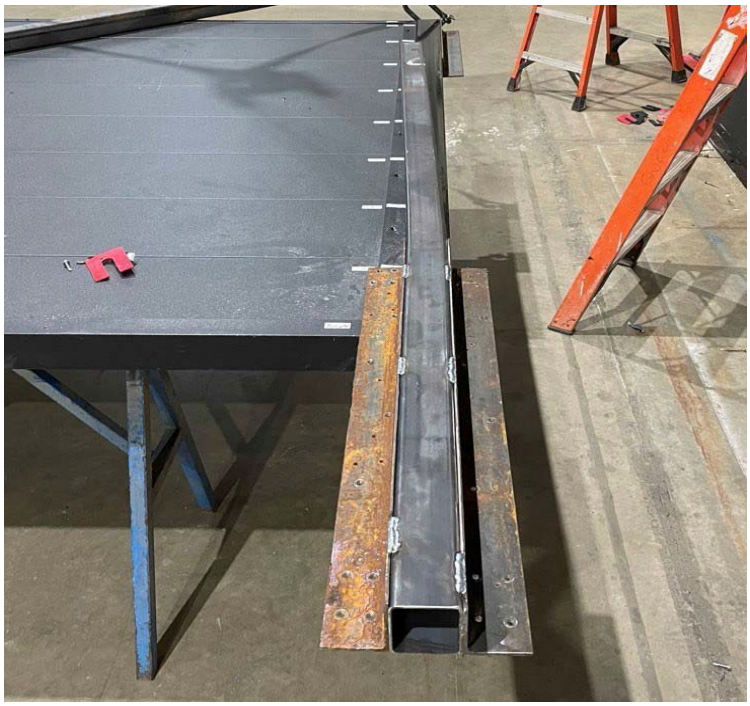


Photo #4: Reinforcement Post Yielding

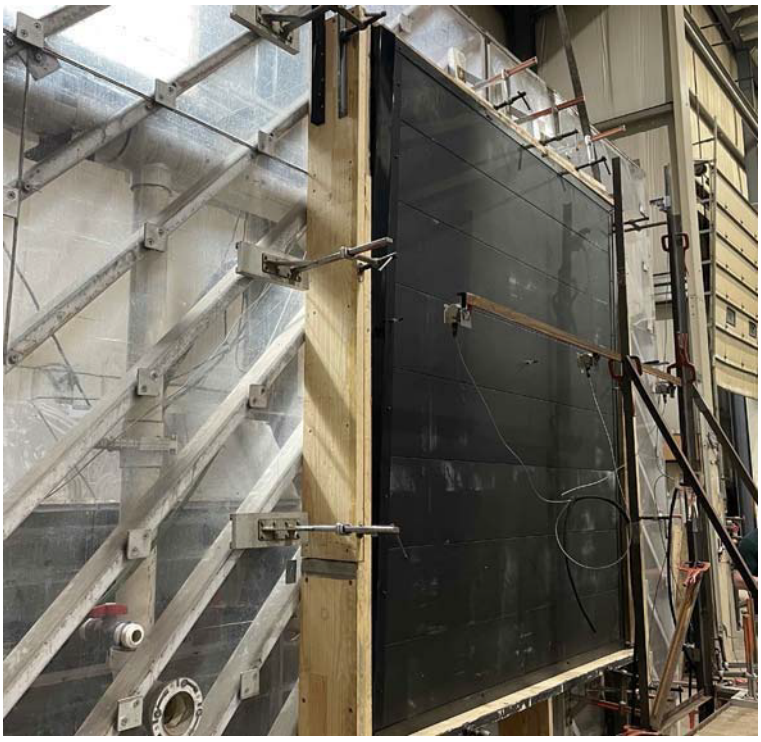


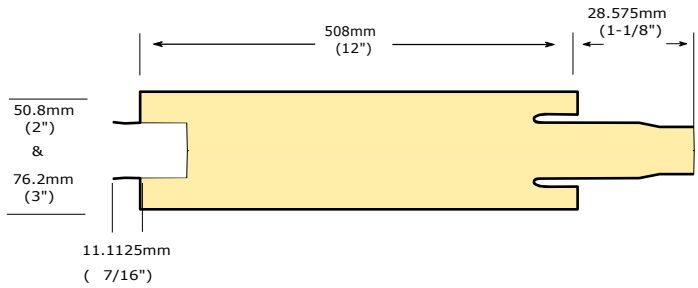
Photo #5: Permanent Set after 64 psf Load

The reported results were secured using the designated test methods. Test results relate only to the specimen tested. Statements of conformity are determined using the simple acceptance decision rule per ILAC-G8:09-2019. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. This report is the exclusive property of Barrier Fence so named herein and may not be reproduced, except in full, without the written approval of Barrier Fence.

Electronic records of data sheets, drawings, correspondence, this report, or other pertinent project documentation will be retained for a period of 10 years from the test completion date. Physical representative samples of the test specimen will be retained for a period of 2 years from the test completion date. At the end of this retention period, such material shall be discarded without notice and the service life of this report will expire.

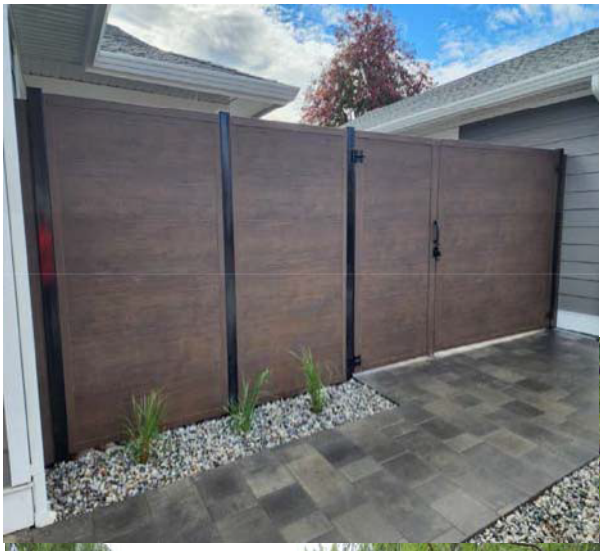
Attachments: This report is complete only when all attachments listed are included.
Appendix A: Product Data (1 Page)

2" & 3" Thick x 12" W x 96" L Fence horizontal Panel



Standard Features

Core Thickness	Steel Specks	Sound Reduction	Weight
50.8 mm (2") 76.2 mm (3") (Custom Available)	G90-gr33 26 gauge 24 gauge Galvanize Galvanneal Aluminum-Zinc Alloy	Approx 8.3 db per 25.4 mm (1" Thick)	2" @ 9.75 kg 3" @ 10 kg



Classifications / Configuration

Horizontal Vertical	805mm(20") x 2438.4mm(96")1.24sq/meters(13.3sq/ft) 1 side 805mm(20")x1828.8mm(72").93sq/meters(10sq/ft)1side
Steel Cladding	26 gauge Galvanized steel G90 gr33 24-26 gauge 55% Aluminum-Zinc alloy coated Steel
Insulation	EPS bead board
Coatings/Trim	Water-borne Acrylic Polyurethane Enamel (Variable Substrate Technology) SMP Coated Tex Steel AZ 150 substrate ASTM 792 PVDF Wood Grain Steel 24 ga AZ50 Substrate
Install	Horizontal/Vertical
Classifications	CAN/ULC-S701 CCMC 12424-L CCMC 12425-L CCMC 12426-L ICC-ESESR-1587