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ENGINEER'S EVALUATION REPORT

Date: 28 February 2024

Product Name: Force 12 Plus HVHZ

Manufacturer: Hendee Enterprises, Inc.
9350 South Point Drive
Houston, TX 77054
Phone: (713) 796-2322
Fax: (713) 796-0494

Accompanying Documents:

Hendee Enterprises, Inc., Force 12 Plus HVHZ Screen Drawing Sheet D1 through Sheet D15;
Attachment A – Engineering Calculations.

Description:

A flexible wind abatement and impact protection system that may be used for new or existing construction. This product is approved for use in the High Velocity Hurricane Zones (HVHZ).

Statement of Compliance:

This Product Evaluation Report is issued by James R. Bailey, P.E. to Hendee Enterprises, Inc., in accordance with the requirements of the Florida Department of Business and Professional Regulation (Florida Building Commission), Rule Chapter No.: 61G20-3, Method 1 (d).

The product covered by this report has been verified to be in compliance with the 2023 Eighth Edition of the Florida Building Code.

This Product Evaluation report shall be subject to review and revision following Florida Building Code modifications or revisions.

Panel Screen Installation:

See Force 12 Plus HVHZ Screen Drawing Sheet D1 through Sheet D15.

Hardware Types and Substrates:

See Force 12 Plus HVHZ Screen Drawing Sheet D1 through Sheet D15.

Screen Size and Design Pressure Restrictions:

See Force 12 Plus HVHZ Screen Drawing Sheet D1 through Sheet D15.

Materials and Assembly Tests Standards:

DCBCCD PA 201-94 (Impact Test – Large Missile)
DCBCCD PA 202-94 (Static Air Pressure Test)
DCBCCD PA 203 (Fatigue Loading Test)
TAS 201 (Large missile)
TAS 202 (Uniform static load pressure)
TAS 203 (Cyclic load)

The test procedures that Force 12 Plus HVHZ underwent per DCBCCD and TAS are the same procedures as would be required per the following standards:

ASTM E330 / E330M -14 (Uniform static load pressure)
ASTM E1886-13a (Large missile/cyclic load)
ASTM E1996-17 (Large missile/cyclic load)

Evidence Submitted per Section 9N-3.005:

A. Test Report

National Certified Testing Laboratories.
1464 Gemini Boulevard
Orland, Florida 32837
806-797-2208
Substrate: reinforced Concrete
Test Report Number: NCTL-210-2310-1,2,3A
Specimen Test Dates: 4/3-5/2/2000
Dated 5/2/2001 signed and sealed by Barry Portnoy, P.E.

B. Fabric Data (see Page 4)

C. Engineering Calculations (Attachment A)

Limitations and Conditions of Use:

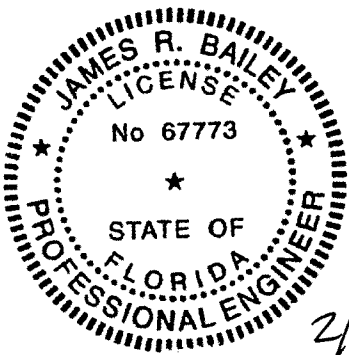
1. All size and installation conditions shown in this report and the referenced drawing are based on the referenced test reports and/or engineering analysis in accordance with the 2023 Eighth Edition of the Florida Building Code.
2. Fabric screens shall be constructed in accordance with the descriptions in this report, the applicable test report, and the manufacturer's state-approved quality assurance entity specifications.
3. This product is approved for use in the High Velocity Hurricane Zones (HVHZ).
4. The job-required design wind pressure shall be calculated in accordance with the 2023 Eighth Edition of the Florida Building Code and with ASCE/SEI 7-22 Minimum Design Loads for Buildings and Other Structures (0.85 directionality factor may apply).
5. Permit holder shall verify the adequacy of the existing structure to withstand new superimposed loads.

Impact Certification: Per ASTM E 1886 and ASTM E 1996 standards, no glass separation is required for this screen system installation. However, the glass may break with any size screen. The un-breached envelope criterion is met since the system is considered 'non-porous' and remains intact under impact and air pressure loading. The system is to enclose the protected opening all around.

Certification of Independence: James R. Bailey, P.E., does not have, nor will acquire, a financial interest in any Hendee Enterprises, Inc., manufacturing or distributing products, nor any other entity involved in the approval process for which this product report is issued.

Applicable Codes and Standards: 2023 Florida Building Code.

Quality Assurance Entity: Lenard Gabert and Associates



2/28/24

James R. Bailey
James R. Bailey, P.E.
FL PE# 67773

FABRIC DATA

AERIAL FABRICS PHYSICAL AND MECHANICAL PROPERTIES Black/Black Trampoline Fabric Sample SGI Sample No. S11432										
Test No.	Thickness (ASTM D 5199)	Mass (ASTM D 5261)	Puncture (ASTM D 4833)	Mullen Burst (ASTM D 3786)	Grab (ASTM D 4632)				Trap Tear (ASTM D 4533)	
	Strength (mils)	Mass (oz/yd ²)	Strength (lbs)	Strength (psi)	Strength		Elongation		Strength	
					MD (lbs)	XD (lbs)	MD (%)	XD (%)	MD (lbs)	XD (lbs)
1		13.7	246.3	>1000	680.0	834.0	30.0	28.0	232.5	495.0
2		13.8	244.0	>1000	632.7	906.2	33.7	29.0	216.5	525.7
3		13.7	232.2	>1000	622.0	906.7	35.7	25.7	203.7	614.5
4		13.7	252.2	>1000	639.0	930.7	36.3	31.0	211.0	565.2
5		13.7	244.2	>1000	621.7	919.0	32.1	29.0	219.2	569.5
6		13.8	244.0	>1000	571.0	906.2	30.7	26.7	198.0	488.2
7		13.5	240.9	>1000	617.5	887.7	32.7	27.3	202.0	570.5
8		13.7	251.3	>1000	649.5	854.7	33.7	24.0	225.5	485.7
9		13.6	194.6	>1000	645.7	813.0	34.0	28.0	227.0	529.2
10		13.6	178.0	>1000	645.0	877.2	34.3	30.3	246.0	527.0
11			192.6							
12			178.6							
13			233.2							
14			235.8							
15			227.9							
Mean		13.7	226.4	>1000	632.4	883.5	33.3	27.9	218.1	537.1
STD		0.1	26.4	NA	28.2	38.5	2.0	2.1	15.1	42.2
NOTES: MD = machine direction XD = cross-machine direction STD = standard deviation NA = not applicable Mullen burst strength of the fabric exceeded the capacity of test device (1000 psi).										
 SGI TESTING SERVICES, LLC					DATE TESTED 17 and 28 June 2005					
					FIGURE NO. 1					
					PROJECT NO. SGI2059					
					DOCUMENT NO.					
					FILE NO.					

