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PRODUCT EVALUATION REPORT

REPORT NO.: 23-0809.02

DATE: August 9, 2023

PRODUCT CATEGORY: Hurricane Shutters

PRODUCT SUB-CATEGORY: Accordions

PRODUCT NAME: **GUARDIAN ACCORDION SHUTTER SYSTEM**

SUBMITTED BY: **Alucore LLC.**
23757 SW 133 Ave
Homestead, FL 33032

1. PURPOSE OF EVALUATION:

This is a Product Evaluation Report issued by **Walter A. Tillit, Jr., P.E.** (System ID # 1906) to **Alucore LLC.** based on **Rule Chapter No. 61G20-3, Method 1D of the State of Florida Department of Business and Professional Regulation.**

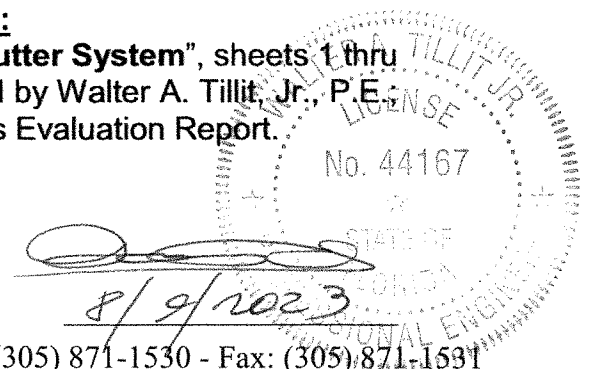
This product is being issued an Evaluation Report as described herein, and has been verified for compliance in accordance with the 2023 8th Edition of the Florida Building Code, and to verify that the product is for the purpose intended at least equivalent to that required by the Code.

This Product Evaluation Report shall be subject to review and revision in case of a Building Code Change that may affect its limitations and conditions.

2. EVIDENCE SUBMITTED:

2.1. PRODUCT EVALUATION DOCUMENT (P.E.D.):

Drawing No 23-157, titled "**Guardian Accordion Shutter System**", sheets **1 thru 15 of 15**, prepared by Tilteco, Inc.; signed and sealed by **Walter A. Tillit, Jr., P.E.**; dated **8/9/2023**. This drawing is an integral part of this Evaluation Report.



2.2. TEST REPORTS:

Large missile impact and cyclic loading under Protocols TAS 201 and 203, as per Sections 1609.1.2. and 1626 of the Florida Building Code.

Uniform Static loads in accordance with Protocol TAS 202. Test reports prepared by **Fenestration Testing Lab Inc., Reports No. 5534, 5644**, dated April 16, 2008; and June 21, 2008 respectively, signed and sealed by Michael Wenzel, P.E., and Carlos Rionda, P.E., respectively.

Large missile impact & cyclic loading under protocols TAS 201 & 203, Test reports prepared by **Fenestration Testing lab Inc., Reports No 5534, 5646**, dated April 16, 2008, and June 21, 2008 respectively, signed and sealed by Michael Wenzel, P.E., and Carlos Rionda, P.E., respectively.

Tensile test as per **Fenestration Testing Lab Report No. 5534**, dated April 16, 2008; signed and sealed by Michael Wenzel, P.E., as per ASTM B-557.

2.3. STRUCTURAL ENGINEERING CALCULATIONS:

On "**Guardian Accordion Shutter System**" for maximum shutter span vs. design wind load, as well as maximum anchor spacing vs. design wind load and shutter span based on rational and comparative analysis, and in accordance with sections 1604 and 1616 of the Florida Building Code. Calculations prepared by Tilteco, Inc., dated 7/28/2008 and 06/30/2015, signed and sealed by Walter A. Tillit, Jr., P.E.

3. MISSILE IMPACT RESISTANCE:

Large missile impact under section 1609.1.2 of the Florida Building Code, as per Protocol TAS 201.(2" x 4", 50 ft/sec)

4. WIND LOADS RESISTANCE:

Accordion Shutter System has been verified to sustain wind pressures. Maximum Shutter Span Mid Pressure Blade shall be as indicated on sheet 10 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Maximum Anchor Spacing for Mid Pressure Blade shall be as indicated on sheet 10 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Maximum Shutter span for High Pressure Blade shall be as indicated on sheet 15 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Maximum Anchor spacing shall be as indicated on sheet 15 of Product Evaluation Document (P.E.D.), drawing No. **23-157**.

5. INSTALLATION:

For Mid Pressure Blade it shall be performed strictly in accordance with details indicated on sheets 3 thru 9 of product Evaluation Document (P.E.D.), drawing No. **23-157**. Minimum separation to glass shall be as indicated on sheet 10 of Product Evaluation Document (P.E.D.), drawing **23-157**

Professional Engineer Seal for Walter A. Tillit, Jr., State of Florida, License No. 44187, dated 8/9/2023.

Requirements for use of locks and/or locking rods shall be as indicated on Notes on sheet 3 of Product Evaluation Document (P.E.D.), drawing No. **23-157**.

For High Pressure Blade it shall be performed strictly in accordance with details indicated on sheets 11 thru 14 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Minimum separation to glass shall be as indicated on sheet 15 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Requirements for use of locks and/or locking rods shall be as indicated on Notes on sheet 11 of Product Evaluation Document (P.E.D.), drawing **23-157**

Low pressure Blade working in unison with High Pressure Blade, shall be performed strictly in accordance with Limitations included on Note 2, sheet 1 of drawing No **23-157**. Minimum separation to glass shall be as indicated on Note 2, sheet 1 of drawing **23-157**.

6. MATERIAL CHARACTERISTICS AND SPECIFICATIONS:

Shall be strictly in accordance with General Notes and Components indicated on sheets 1, and 2 of Product Evaluation Document (P.E.D.), drawing No. **23-157**. Anchor specifications shall be as indicated on Note 7, sheet 1 of Product Evaluation Document (P.E.D.), drawing No. **23-157**.

7. LIMITATIONS AND CONDITIONS OF USE:

7.1. Shall be strictly in compliance with General Notes No. 1, 2, 8 thru 13, indicated on sheet 1, of Product Evaluation Document (P.E.D.), drawing No. **23-157** prepared by Tilteco, Inc. and signed and sealed by Walter A. Tillit, Jr., P.E.

7.2. Product **may be** installed within HIGH VELOCITY HURRICANE ZONES as defined on section 202 of the Florida Building Code or out of it.

7.3. Product shall only be installed into poured concrete, concrete block or wood walls under the Maximum Span and Maximum Design Load limitations indicated on this drawing.

7.4 Limitation of use of Low-Pressure Blade in unison with High Pressure Blade shall be as per General Note 2 as per sheet 1 of drawing No. **23-157**

Product Evaluation Report prepared by Walter A. Tillit, Jr., P.E. (Florida License No. 44167), President of Tilteco, Inc. (Florida CA-0006719).

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