

WALTER A. TILLIT, JR., P.E.

PRODUCT EVALUATION REPORT

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FL P.E. License No. 44167
FL C.A. License No. 0006719

REPORT NO.: 23-0719.04
DATE: July 19, 2023
PRODUCT CATEGORY: Hurricane Shutters
PRODUCT SUB-CATEGORY: Roll Up Shutters
PRODUCT NAME: Nautilus Rolling Shutter System
SUBMITTED BY: ESS MANUFACTURING, Inc.
668 S.W. Whitmore Dr.
Port St. Lucie, FL 34984

1. PURPOSE OF EVALUATION:

This is a Product Evaluation Report issued by **Walter A. Tillit, Jr., P.E.** (System ID # 1906) to ESS MANUFACTURING, INC. based on Rule Chapter No. 61G20-3, Method 1D of the 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.

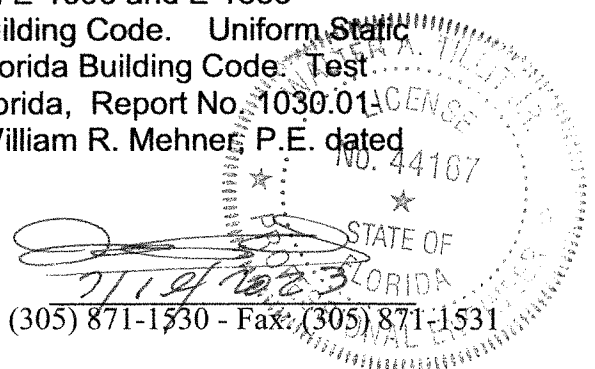
2. EVIDENCE SUBMITTED:

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

Drawing No. 23-100, sheets 1 thru 26 of 26, including 10A, 11A, 12A & 13A (Total = 30 sheets), prepared by Tilteco, Inc.; signed and sealed by Walter A. Tillit, Jr., P.E.; dated 7/19/2023. This drawing is an integral part of this Evaluation Report.

2.2. TEST REPORTS:

Large missile impact and cyclic loading under ASTM E-1996 and E-1886 Standards, as per section 1609.1.2 of the Florida Building Code. Uniform Static loads in accordance with Protocol TAS 202 of the Florida Building Code. Test reports prepared by American Test Lab of South Florida, Report No. 1030.0108, signed and sealed by Henry Hattem, P.E. and William R. Mehner, P.E. dated 02/13/09 and addendum dated 02/25/09.



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Tensile Tests on Mechanical Properties of Slat, as per QC Metallurgical, Inc. No. 9AM-31, dated January 16, 2009, signed and sealed by Frank Grate, P.E., per ASTM E-8 and on stainless steel retaining screw, as per lab report No. 9AM-32, dated January 15, 2009, signed and sealed by Frank Grate, P.E. per ASTM E-8.

2.3. STRUCTURAL ENGINEERING CALCULATIONS:

On **Nautilus Rolling Shutter System** for maximum span vs. design wind load, as well as anchor spacing vs. design wind load and slat span including mullions and storm bars, based on rational and comparative analysis, and in accordance with sections 1604 and 2002 of the Florida Building Code. Calculations prepared by Tilteco, Inc., dated 11/18/08, signed and sealed by Walter A. Tillit, Jr., P.E., and on August 24, 2017.

3. MISSILE IMPACT RESISTANCE:

Large missile impact under section 1609.1.2 of the Florida Building Code, as per ASTM E-1996 and E-1886 Standards with missile level D (Basic protection).

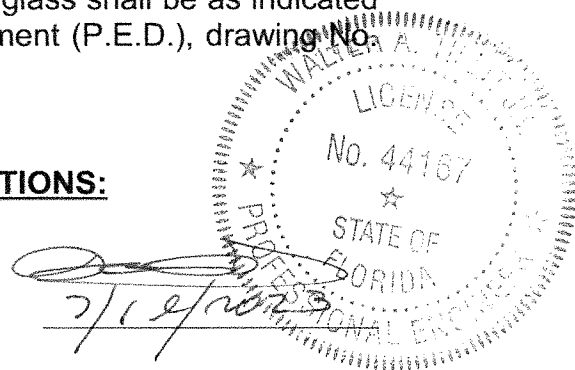
4. WIND LOADS RESISTANCE:

“Nautilus Rolling Shutter System” has been verified to sustain wind pressures corresponding to wind zones 1 thru 4, per ASTM E-1996 Standard. Slat Span shall be as indicated on sheets 15, 16 and 20 of Product Evaluation Document (P.E.D.), drawing No. **23-100**. Maximum Anchor Spacing shall be as indicated on sheets 17, 18 and 21 of Product Evaluation Document (P.E.D.), drawing No. **23-100**. Storm Bar and mullion span shall be as indicated on sheets 22 and 24 thru 26 respectively of Product Evaluation Document (P.E.D.), drawing # **23-100**

5. INSTALLATION:

Shall be strictly performed in accordance with details indicated on sheets 4, 5, 6, 7, 8, 9, 10, 10A, 11, 11A, 12, 12A, 13 & 13A of Product Evaluation Document (P.E.D.), drawing No. **23-100**. Minimum separation to glass shall be as indicated on sheets 15, 16 and 20 of Product Evaluation Document (P.E.D.), drawing No. **23-100**.

6. MATERIAL CHARACTERISTICS AND SPECIFICATIONS:



Shall be strictly in accordance with General Notes and Components indicated on sheets 1, 2 and 3 of Product Evaluation Document (P.E.D.), drawing No. **23-100**. Anchor specifications shall be as indicated on sheets 1, 8, 9, 10, 10A, 11, 11A, 12, 12A, 13, 13A and 21 of Product Evaluation Document (P.E.D.), drawing No. **23-100**

7. LIMITATIONS AND CONDITIONS OF USE:

7.1. Shall be strictly in compliance with General Notes No. 2 and 11 thru 16, indicated on sheet 1, as well as details and notes on sheets 19 and 20 of Product Evaluation Document (P.E.D.), drawing No. **23-100** prepared by Tilteco, Inc. and signed and sealed by Walter A. Tillit, Jr., P.E.

7.2. Product **shall not** be installed within HIGH VELOCITY HURRICANE ZONES as defined on section 202 of the Florida Building Code.

7.3. Product shall only be installed into poured concrete, grouted cell concrete block, and wood frame structures, as limited and defined on Product Evaluation Document No. **23-100**.

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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