

Unique Engineering Solutions LLC
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Palm Harbor, FL 34683

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1.0 Project Scope

Evaluate Door Engineering and Manufacturing, sectional exterior door for conformance to the 2014 Florida Building Code, including the High Velocity Hurricane Zone (HVHZ) use. Compliance with TAS 201, TAS 202 and TAS 203.

The engineering testing (Reference 2.a) determines the anchorage of the product to the supporting substrate and the product evaluation report (this document) summarizes 2014 FBC compliance verification and appropriate Limitations and Conditions of Use.

2.0 Description of Product - Installation Requirements

See Reference 1 for a description of the product, its installation and other pertinent data related to its approved use.

3.0 Limitations and Conditions of Use

This product evaluation report contains or makes reference to specifications, technical details and installation details and/or methods that pertain to the proper use and/or installation of the product specified herein. Specific limitations and conditions of its use including but not limited to the following are contained in Reference 1 and are the subject of Product Approval in accordance with the State of Florida Product Approval Rule 61G20-3.

- Design Pressure Rating (pwt)
- Installation substrate requirements
- Installation section requirements
- Installation restriction
- Product Description
- Product Components

4.0 Applications/Installations outside the Limitations and Condition of Use of this Product's Approval

Rule 61G20-3.005(1)(a) states "Rational engineering analysis cannot be used in lieu of a standard test required by the Code for approval of products within the scope of the standard, except that the project specific approval by the local authorities having jurisdiction in accordance with alternate methods and outside authority in the Code." Any modification to this product as evaluated in this report and approved by the Florida Building Commission to outside the scope of this evaluation and will be the responsibility of others. As allowed in Rule 61G20-3.005(1)(a), a project specific approval by the local authorities having jurisdiction may be used given an appropriate rational analysis is conducted and deemed acceptable to the local authorities having jurisdiction.

Product Evaluation Report

Date: Wednesday, March 26, 2017

Report No.: 215001

Report Revision No.: 1

Project No.: 215-015

Code Compliance: Florida Building Code 2014, including HVHZ

Product Mfg.: Door Engineering and Manufacturing
409 West Chaucery, Street
Knoxia, Minnesota, 56626

Product Name(s): Hurricane Four-Fold Door FF700 & FF700XT

Product Category: Exterior Doors

Product Sub-Category: Sectional Exterior Door Assemblies

Compliance Method: Product Approval Rule 61G20-3.005 - Product Evaluation Report by a Licensed Professional Engineer, Method 1D

Prepared By: R. Douglas Hall, P.E.
Florida P.E. License Number 53759
Unique Engineering Solutions, LLC-CDA 30913

CERTIFICATE OF INDEPENDENCE

Unique Engineering Solutions, LLC and R. Douglas Hall, P.E. do not have, nor will acquire, any financial interest in the company manufacturing or distributing product(s) covered by this Product Evaluation Report. Unique Engineering Solutions, LLC and R. Douglas Hall, P.E. do not have, nor will acquire any financial interest in any other entity involved in the approval process or testing of the product(s) covered by this Product Evaluation Report.



R. Douglas Hall, P.E.
Total Pages: 4

5.0 Quality Assurance

This product is manufactured under a quality assurance program audited by an approved Certification and Quality Assurance Body KeyStone Certifications Inc. (KCI) as required in Rule 61G20-3.005(3). See FBC Organization No. QUA1573 for approval under Rule 61G20-3.

6.0 Code Conformance - Structural Performance

Reference 2.a conducted testing to the following standard(s). See Reference 3.b for Code Conformance Evaluation to the 2014 FBC for these testing standards as applicable.

- 6.1.1 TAS 201-94, Impact Test Procedures
- 6.1.2 TAS 202-94, Criteria for Testing Impact & Non-Impact Resistant Building Envelope Components Using Static Air Pressure
- 6.1.3 TAS 203-94, Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

7.0 Design Pressure Limitations

From Reference 2.a (introduction) on the Four-Fold Door System:

- Design Pressure -120/-120 psf
- Max Product Size 192" x 192"
- Max Panel Size 47" x 138-1/2"
- Max Daylight Opening 20-1/4" x 117-1/2" Single Opening
- Max Daylight Opening 2-30-1/4" x 75-1/2" Double Opening
- Glazing Option - 6mm Tempered Glass/11mm air space/6mm Heat Strengthened Glass/0.090" DuPont Sentry Glass PlusTM Interlayer/6mm Heat Strengthened Glass (Dry Glaze)
- Glazing Option - 6mm Heat Strengthened Glass/0.090" DuPont Sentry Glass PlusTM Interlayer/6mm Heat Strengthened Glass (Dry Glaze)

7.1 Anchorage Substrate Assumptions

- Wood - SYP (G=0.55 or better)
- Light Gauge Steel (Fy = 33 ksi or better), minimum 18 gage
- Normal Weight Concrete (f'c) = 3000 psi or better
- Grout Filled CMU, min. 1800 psi grout (reinforced cells)
- Structural steel (min. 36 ksi)
- Any welded connections shall be done with E70xx, electrodes

Note: Suitable substitute by others

8.0 Reference and Supporting Documents

- 1) Drawings and Installation Manual
 - a. Four-Fold Door System Installation Guide - Signed & Sealed by R. Douglas Hall, P.E. on 03/30/2017
 - b. Installation Drawings FF700 & FF700XT Sheets, Signed & Sealed by R. Douglas Hall, P.E. on 03/30/2017
- 2) Testing
 - a. Performance Testing
 - i. Intertek/Architectural Testing, Inc. (Schafford, WI) Report No. 1064-B2-602-18 Signed & Sealed by Shawn G. Collins, P.E.
- 3) Reports
 - a. Anchorage Engineering Calculations, Dated 11/20/2017, Signed & Sealed by R. Douglas Hall, P.E.
 - b. Unique Engineering Solutions, LLC - Report 2017-01, Four-Fold Door Engineering & Manufacturing, Hurricane Four-Fold Door, System, Signed & Sealed by R. Douglas Hall, P.E. Dated - 03/30/2017
- 4) Code Compliance
 - a. 2014 Florida Building Code

2

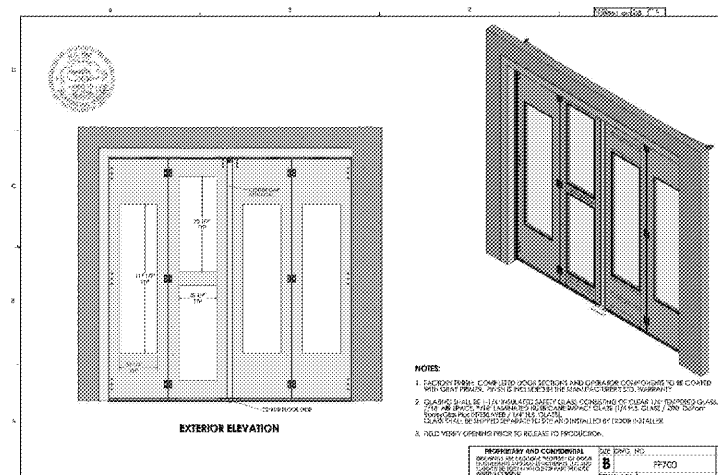
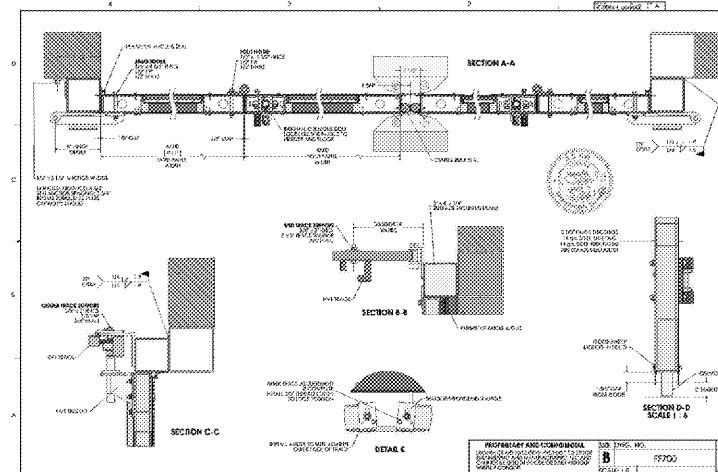
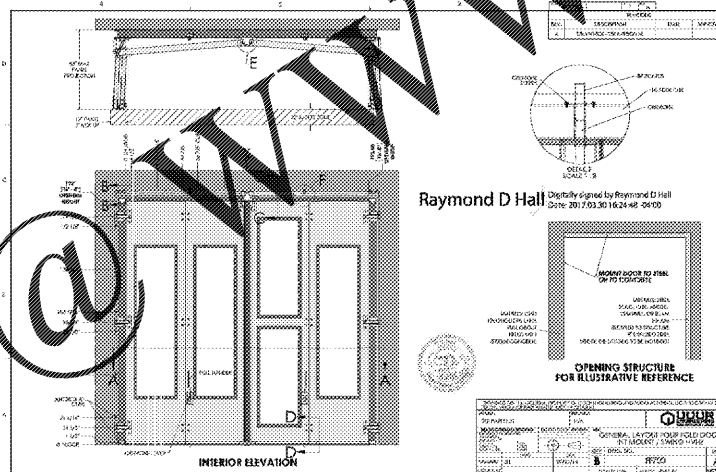
Raymond D Hall
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Date: 2017.03.30 16:24:48 -0500

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Order Plans



PRODUCT APPROVAL - EXTERIOR METAL BIFOLD DOORS

A1
NTS

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19039

ISSUE DATE
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SHEET NUMBER
PA-5