

ENGCO Inc.
Engineering Services

ENGCO, Inc.
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PRODUCT EVALUATION REPORT
RULE 9B-72.070 (1) (d) – EVALUATION REPORT FROM A PROFESSIONAL ENGINEER
Report Number: 12-005

1- Date: 01/13/2012

2- Association / Manufacturer: Clear Strength USA, LLC
1414 Commerce Park Dr.
Tipp City, Ohio, 45371

3- Product Name: 0.073 Polycarbonate Hurricane Shutter Panel
2x Vacuum Formed Polycarbonate Panels
Drawing 12-005

4- Evaluation Entity: Florida Professional Engineer
Pedro Paulo M. De Figueiredo – PE 52609
5595 Orange Drive Suite 201
Davie – Florida – 33314

5- Statement of Compliance: This product evaluation report is being issued per Rule Chapter No. 9B-72 section 9B-72.070 (1) (d) of the Department of Community Affairs – Florida Building Commission. The products covered by this report have proven to be in compliance with the Florida Building Code 2010, not limited to the following standards: ASTM E330-02, E1996-09, E1886-05; SST12-99, Aluminum Design Manual 2005 and AF&PA NDS 2005.

6- Product Description: This product is a Hurricane Panel Type Shutter designed, constructed and erected to easily enclose an area, providing protection from hurricane force winds and large missile windborne debris within the allowable designed pressures and limitations stated in this approval. Specification for design, fabrication and installation is found in drawings 12-005.

7- Technical Documentation:

7.1- Approval Document: Drawing number 12-005 prepared by Engco, Inc. on 01/13/2012 sheets 1 through 8 of 8, titled "Polycarbonate Hurricane Shutter Panel" signed and sealed by Pedro De Figueiredo, PE.

7.2- Test Reports – Product has been tested at Construction Testing Corporation (CTC) with the following reports: 06-011 and CTC 07-029.

7.3- Calculations:

7.3.1- Original test results analysis and anchorage design numbered 08-073, prepared by Engco, Inc. on 4/2/2007 signed and sealed by Pedro De Figueiredo, PE.

7.3.2- Addendum to original calculations due to new anchorage data numbered 12-005, prepared by Engco, Inc. on 1/15/2012 signed and sealed by Pedro De Figueiredo, PE.

8- Limitation and Conditions of use:

8.1 – Product **NOT TO BE INSTALLED** in the following locations:

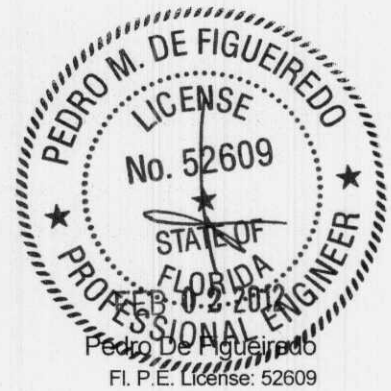
a - In wind zone 4 where the specifying authority has specified optional additional pass/fail criteria in accordance with ASTM E1996-09 section 7.2. Wind Zone 4 as defined in ASTM E 1996-09 with modification by the Florida building Code 2010 Section 1609.1.2.4 (Locations with basic wind speed greater than 160 mph)

b- "Essential Facilities" as defined in the ASCE 7.

c- "High Velocity Hurricane Zones" (Miami and Broward Counties) as defined on section 202 of the Florida Building Code.

8.2 – Product to be manufactured, designed and installed as per drawing specifications 12-005, prepared by Engco, Inc dated on 01/13/2012 and signed and sealed by Pedro De Figueiredo, PE.

9- Others:



Pedro De Figueiredo
Fl. P. E. License: 52609

System ID: 2504