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EVALUATION REPORT NO.:

ER-16-0021-R1

AUGUST 2, 2016

Reference No.: 72110

Product: Exterior Doors – Rolling Overhead Doors, SF slats

Manufacturer: Alpine Overhead Doors
8 Hulse Road
E. Setauket, NY 11733

Statement of Compliance:

The Rolling Overhead Doors described in this report were evaluated to be compliant with the 2014 Florida Building Code, Sections 2205, and 2209. The doors are, for the purpose intended, at least equivalent to that required by the Code when manufactured and installed as described below.

Description of the Product:

The doors described in this report consist of a curtain made of interlocking formed steel slats suspended from a drum roller. The slats are approximately 2.75 inches high in the curtain position. All doors in this report are made using SF18, SF20, and SF22 flat slats.

The curtain on all models is suspended from a drum roller, and coiling the curtain around the drum raises the curtain. The sides of the curtain are constrained from lateral movement along their vertical edges by steel guides that are attached to the door jambs. This constraint provides resistance to lateral wind forces. Various guide configurations are used for the different door styles included in this report. The lateral wind forces are transferred from the curtain to the guides and then through the attachment elements to the door jamb. The door jambs are part of the main wind frame resisting system and usually are constructed of steel, concrete, or concrete masonry units.

SF slats

The doors are fully described in the attached Alpine drawings, FC-1 through FC-8, dated 7/1/16. The slat used for all doors is a SF slat with steel thicknesses of 18, 20 or 22 gauge. The depth of the formed slat is $\frac{3}{4}$ inch for all SF slats. Drawings FC-1 through FC-5 show details of the door construction, guides, and the various door components. Sheets FC-6 through FC-8 display allowable wind-loads and specific door requirements for each of the slat gauges. Sheet FC-6 displays all 22 gauge, sheet FC-7 all 20 gauge,

and sheet FC-8 all 18 gauge slats. There are separate tables for design wind loads of 30, 40, 50, and 60 psf. Specific door requirements are shown for selected door widths.

Slats may be manufactured using galvanized steel sheet, ASTM A653 HSLAS Type B, grade 50; ASTM A653 HSLAS Type A, grade 50 or ASTM A653 structural steel, grade 50. Stainless steel slats may be manufactured using Type 304, 430, or 201 steel with a minimum yield of 50,000 psi.

A rational analysis was made on each tabulated door to determine the structural requirements of the curtain, guides, windlock attachments, and guide attachments for each of the indicated design wind pressures. A comparison with test results was made to substantiate analytic results.

Technical Documentation:

Test results and Miami-Dade County Notice of Acceptance (NOA) were used to substantiate the analysis procedure. The following information was considered in a comparative analysis of the design.

Door Tests with SF22 slats

1. a) ASTM E330 test, 12'-0" wide opening, 22 gauge SF22 slat, +/- 60 psf design wind load, Architectural Testing, Report No. 01-31478.01 dated 03/05/99.
b) Tests per Dade County Protocols PA 201-94, PA 202-94, and PA 203-94 conducted by Architectural Testing, Report No. ATI-16800, dated 04/10/96.
c) UL Laboratories report No. R12035 per ASTM E84, dated 06/10/91.
d) Test report of plastic foam per ASTM D1939, by U.S. Testing Co., Inc. dated 03/15/91
2. a) ASTM E330 test, 16'-0" wide opening, 22 gauge SF22 slat, +/- 60 psf design wind load, ETC Laboratories, Report No. ETC-07-1102-20195.0 dated 05/29/08.
b) Dade County NOA 08-0805.13, Approved 12/11/2008, 16'-0" wide opening, 22 gauge SF22 slat, +/- 60 psf design wind load. Current NOA 14-0915.03. Includes Protocols TAS 201, TAS 202, and TAS 203 as per FBC, conducted by ETC LABS. Report No. ETC-07-1102-20195, dated 05/29/08.
c) Tensile tests, 3 specimen coupons from SF22 slat, 22 gauge, tested per ASTM E8-08. Tests conducted by ETC Laboratories, Report No. 08-1102-21835.06, dated 10/08/08.
d) UL Laboratories report No. R12035 per ASTM E84, dated 06/10/91.
e) Test report of plastic foam per ASTM D1939, by U.S. Testing Co., Inc. dated 03/15/91

Door Tests with SF20 slats

1. a) ASTM E330 test, 20'-0" wide opening, 20 gauge SF20 slat, +/- 60 psf design wind load, Architectural Testing, Report No. 01-31479.01 dated 10/22/98.
b) Test per Dade County Protocols PA 201-94, PA 202-94, and PA 203-94 conducted by Architectural Testing, Report No. ATI-149800, dated 05/10/95.
c) Tensile tests, 3 specimen coupons from SF22 slat, 22 gauge, tested per ASTM E8.
d) UL Laboratories report No. R12035 per ASTM E 84, dated 06/10/91.
e) Test report of plastic foam per ASTM D1939, by U.S. Testing Co., Inc. dated

Installation Requirements:

Installation requirements are described in Alpine's Operation & Maintenance Manual, Rolling Doors, cover sheet plus 7 pages, undated.

Impact Resistance

Both 22 and 20 gauge doors have passed the Florida State Code Protocols TAS 201 and TAS 203 for impact on both sides of the door, permitting installation on either the inside or the outside of the wall. These tests were conducted on the lightest gauge curtains and the widest doors shown on the drawings. All doors shown may be considered to be impact resistant.

Limitations and Conditions of use:

The use of the door is limited to buildings for which the design wind loads for wall components and cladding, determined in accordance with Section 1609 of the 2014 Florida Building Code, do not exceed the rated design wind loads of the door as shown on the Alpine Drawing FC-6 through FC-8.

The maximum width limitations for each style are shown in the attached tables. The maximum height for all doors is limited to 30 ft.

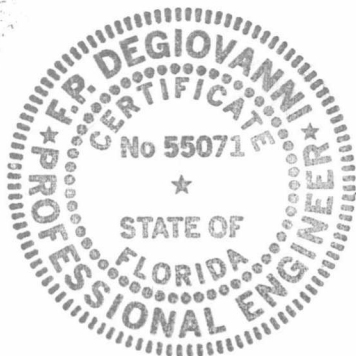
For projects within the HVHZ, the additional requirements of the Section 1526 of the Florida Building code are applicable.

Door manufacturing is limited to those plants that have met the 2014 Florida Building Code Product Approval quality assurance requirements.

Certification of Independence:

I, F. Paul DeGiovanni, certify that I am self-employed and operate as an independent contractor providing professional engineering services. I have no financial interest in nor will I acquire any financial interest in any company manufacturing or distributing products for which evaluation or validation reports have been issued by me.

Likewise, I have no financial interest in nor will I acquire any financial interest in any other entity involved in the approval process of those products for which I have issued reports.



A handwritten signature in cursive script that reads "F. Paul DeGiovanni".

F. Paul DeGiovanni, P.E.