

STRUCTURAL SOLUTIONS, P.A. *

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GARAGE DOOR STATIC PRESSURE TEST REPORT

Garage Door No.:	IBC-3609-140-00		Test Date:	4/20/2010	Project No.:	10-041
Design Pressures:	+28.2 psf, -33.1 psf		Report Date:	11/10/2020		
Test Pressures:	+42.3 psf, -49.6 psf		Test Location:	Amarr Garage Doors Test Facility		
ASCE 7-16 Criteria:	Up to 5 Feet of Door Width in Zone 5; Roof Slope ≤ 10°; Enclosed Building					
	Exp. B, 30' MRH	Exp. C, 15' MRH	Exp. C, 25' MRH	Exp. D, 15' MRH	Exp. D, 25' MRH	
	180 mph	163 mph	155 mph	148 mph	142 mph	
Witnessed By:	Brandon Gentle - Amarr Garage Doors; Thomas L. Shelmerdine, PE - Structural Solutions, P.A.					

Description of Test Specimen:

A 9'-2" wide x 8'-0" high aluminum sectional garage door, one (1) section wide by four (4) sections high, each section being 2" inches thick by 24" high. The door sections were connected together with one (1) 14 gauge galvanized steel end hinge at each end stile and one (1) 14 gauge galvanized steel center hinge at one interior stile as shown on the drawing. Each section was fully glazed with 1/8" annealed DSB glazing. Garage door Model No. 3550 manufactured by Amarr Garage Doors was used in the test. The test unit is further described on drawing IBC-3609-140-00.

Manner of Testing:

This test was conducted on the above date at the Amarr Garage Doors Test Facility. The specimen was tested for static pressure structural performance in substantial conformance with the procedures described in ASTM E330 "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference". Both positive and negative pressures were tested. The specimen was installed in an enclosure measuring approximately 4' deep, 9' high, and 20' long. The enclosure was framed with shop welded steel angles and covered with 3/4" thick plywood. The door was covered with plastic sheeting to prevent leakage of air pressure. At one end of the enclosure, a "Dwyer" Series 477 Digital manometer was attached to measure pressure inside the enclosure. Two duct fans were attached in series to the enclosure with flexible ducting to provide the positive and negative pressures. Amarr has been accredited by the American Association for Laboratory Accreditation, Certificate #2595.01, since May 8, 2007.

Test Procedure:

The specimen was subjected to the above pressures for the following durations. Positive pressure was applied on the exterior face of the door first, and then negative pressure was applied.

Step 1. Preload the door to 50% of the Design Pressure and hold for 10 seconds. Step 2. Unload the door for 1 to 5 minutes. Step 3. Load the door to 100% of the Design Pressure and hold for 60 seconds. Step 4. Unload the door for 1 to 5 minutes. Step 5. Load the door to 150% of the Design Pressure (which equals 100% of the Test Pressure) and hold for 10 seconds. Step 6. Repeat 1 through 5 above for negative pressure.

Observations:

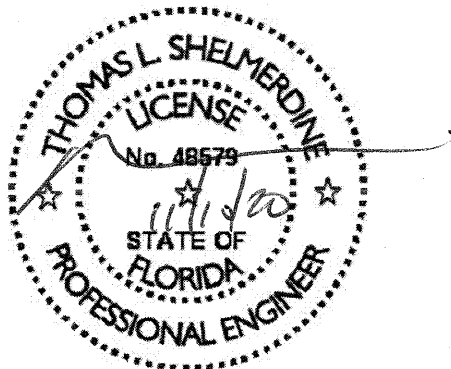
No failures occurred as a result of the noted loadings. The door remained operable after both positive and negative tests.

Summary:

The 9'-2" x 8'-0" Model 3550 as described on Drawing IBC-3609-140-00 meets or exceeds the testing criteria as described above. By comparison to the construction of the 9'-2" x 8'-0" Model 3550, the following doors also meet or exceed the above testing criteria, when constructed in accordance with Drawing IBC-3609-140-00:

- Model 3550 doors with widths of up to 9'-2" and heights of up to 24'

Submitted by:



STRUCTURAL SOLUTIONS, P.A.

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