

STRUCTURAL SOLUTIONS, P.A.

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GARAGE DOOR STATIC PRESSURE TEST REPORT

Garage Door No.:	IRC-5318-140-26-I		Test Date:	6/5/2012		Project No.:	12-044			
Design Pressures:	+29.4 psf, -33.3 psf		Report Date:	11/9/2020		Model #	500 Classica 1000			
Test Pressures:	+44.1 psf, -50 psf		Test Location:	Amarr Garage Doors, Winston-Salem, NC						
ASCE 7-16 Criteria:	Up to 5 Feet of Door Width in Zone 5; Any Roof Slope; Enclosed Building									
	Exp. B, 30' MRH		Exp. C, 15' MRH		Exp. C, 25' MRH		Exp. D, 15' MRH		Exp. D, 25' MRH	
	182 mph		165 mph		157 mph		150 mph		144 mph	
Witnessed By:	Brandon Gentle - Amarr Garage Doors; Thomas L. Shelmerdine, PE - Structural Solutions, P.A.									

Description of Test Specimen:

A 18'-0" wide x 8'-0" high residential steel sectional garage door, one (1) section wide by three (3) sections high, each section being 2" thick by 32" high 24 gauge galvanized steel sheet. Each section was reinforced with two (2) 5-1/2" 18 gauge galvanized steel R-trusses. The door sections were connected together with one (1) 12 gauge galvanized steel end hinge at each end stile and one (1) 14 gauge galvanized steel center hinge at 7 interior stiles as shown on the drawing. Garage door Model 500 Classica 1000 manufactured by Amarr Garage Doors was used in the test. The test unit is further described on Drawing IRC-5318-140-26-I.

Manner of Testing:

This test was conducted at Amarr Garage Doors in Winston-Salem, NC, which is accredited by the American Association for Laboratory Accreditation, Certificate #2595.01. The specimen was tested for static pressure structural performance in substantial conformance with the procedures described in DASMA 108 "Standard Method for Testing Sectional Garage Doors - Determination of Structural Performance Under Uniform Static Air Pressure Difference", and 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 5' deep, 9' high, and 25' long. The enclosure was framed with shop welded structural steel square tubing and covered with 3/4" thick plywood. The door was covered with 2 mil plastic sheeting to prevent leakage of air pressure. One pressure blower was attached to the enclosure with flexible ducting to provide the positive and negative pressures. Pressure transducers connected to a computer were used to measure and record the pressures in the enclosure.

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:

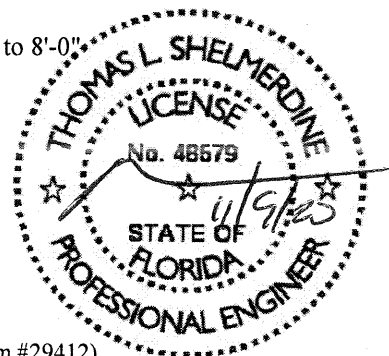
No failures occurred as a result of the noted loadings. The door remained operable after both positive and negative tests.

Summary:

A 18'-0"x8'-0" Model 500 Classica 1000 as described on drawing IRC-5318-140-26-I meets or exceeds the testing criteria as described above. By comparison to the construction of the 18'-0"x8'-0" Model 500 Classica 1000, the following doors also meet or exceed the above testing criteria, when constructed in accordance with drawing IRC-5318-140-26-I:

- Classica 1000 doors (which is an alternate name for the Model 500)
- Classica 2000 doors (which is the Model 500 with drop-in insulation)
- Model 500, Classica 1000 and Classica 2000 doors with widths of up to 18'-0" and heights of up to 8'-0"

Submitted By:



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