

# STRUCTURAL SOLUTIONS, P.A.

Structural Engineering ■ Investigations ■ Consulting

## GARAGE DOOR EVALUATION REPORT

|                        |                                                                         |  |                       |                                            |                 |              |                    |  |                 |  |
|------------------------|-------------------------------------------------------------------------|--|-----------------------|--------------------------------------------|-----------------|--------------|--------------------|--|-----------------|--|
| Garage Door No.:       | IRC-C509-155-15-I                                                       |  | Model #               | C500                                       |                 | Report Date: | 10/4/2023          |  |                 |  |
| Design Pressures:      | +38 psf, -44.9 psf                                                      |  | Test Pressures:       | +57 psf, -67.4 psf                         |                 |              | Project No. 15-075 |  |                 |  |
| Static Test Date:      | 6/18/2015                                                               |  | Static Test Location: | Amarr, 165 Carriage Ct., Winston-Salem, NC |                 |              |                    |  |                 |  |
| Impact Test Date:      | 10/5-10/7/2015                                                          |  | Impact Test Location: | American Test Lab, Inc., Brevard, NC       |                 |              |                    |  |                 |  |
| ASCE 7-22<br>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 |  |
|                        | 200 mph                                                                 |  | 182 mph               |                                            | 173 mph         |              | 165 mph            |  | 158 mph         |  |

### Reference Drawing and Test Report(s):

- Amarr Drawing number IRC-C509-155-15-I dated 12/22/2015
- Structural Solutions, P.A. report for IRC-C509-155-15-I dated 10/04/2023
  - Static Air Pressure Test witnessed by Thomas L. Shelmerdine, PE
- American Test Lab, Inc. report number ATLNC 1005.03-15 dated 02/17/2016
  - Tests witnessed and certified by David Johnson, PE (FL PE #61915) for:
    - Large Missile Impact Test • Forced Entry Test • Cyclical Test

### Description of Test Specimen:

A 9'-0" wide x 7'-0" high x 2" thick sectional garage door, Model # C500. All sections were made of 27 ga exterior / 27 ga interior galvanized steel sheet. The test unit is further described on Drawing IRC-C509-155-15-I.

### Test Standards and Report Conclusions:

The above referenced Test Reports state the following:

- The tests were conducted in accordance with ANSI/DASMA 108-05; ASTM E330-14; ASTM E1886-05 E1996-09 F588-07; ANSI/DASMA 108-05 115-05
- The tests were witnessed and certified by:
  - Static Test: Thomas L. Shelmerdine, PE
  - Other Tests: David Johnson, PE (FL PE #61915)
- The weight of the missile used for the Large Missile Impact Test was 9.3 lbs.
- The maximum cycle time noted in the report is less than the maximum permitted based on the formula:  
(area of specimen -75) x (F) + 3, where F= 0.06 for sectional doors.
- All tests passed the referenced Test Standards.
- The Amarr test facility is accredited by the American Association for Laboratory Accreditation, Cert. #2595.01.
- The test facility at American Test Lab, Inc. is accredited by IAS, Certification #TL-423.

### Summary:

The 9'-0"x7'-0" Model # C500 door as described on drawing IRC-C509-155-15-I meets or exceeds the testing criteria as described above. By comparison to the construction of the 9'-0"x7'-0" Model # C500, the following doors also meet or exceed the above testing criteria, when constructed in accordance with drawing IRC-C509-155-15-I:

- 9' x 7' Amarr Olympus 3200 doors, which is an alternate name for Model C500
- 9' x 7' Amarr Designer's Choice 3200 doors, which have alternate embossment patterns in the skin
- Model C500, Amarr Olympus 3200 & Amarr Designer's Choice 3200 doors with widths up to 9' and heights up to 14'
- Up to 4 short-panel windows (18 1/8" x 10 5/8") or 2 long-panel windows (38 1/16" x 10 5/8") using 1/4" polycarbonate may be installed in one section. Windows are not required to be installed in any section.

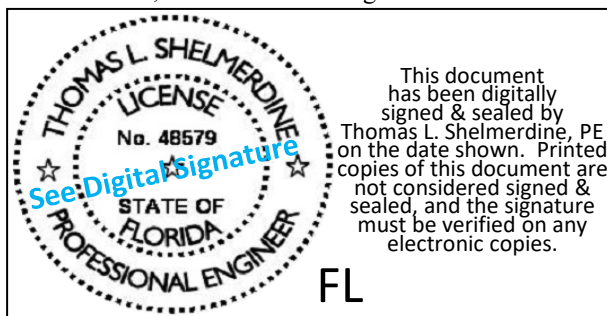
To the best of my knowledge, the above garage door conforms to the requirements of the Florida Building Code 8th Edition (2023).

I certify that I have no financial interest in the testing lab(s) that performed the tests, nor in Amarr Garage Doors.

Submitted By:

Thomas L  
Shelmerdine

Digitally signed by Thomas L Shelmerdine  
DN: c=US, o=North Carolina,  
dnQualifier=A01410D000001856487A7B1  
00125CE2, cn=Thomas L Shelmerdine  
Date: 2023.10.04 09:49:59 -04'00'



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