

# STRUCTURAL SOLUTIONS, P.A.

Structural Engineering ■ Investigations ■ Consulting

## GARAGE DOOR EVALUATION REPORT

|                        |                                                                           |  |                       |      |                                            |              |                    |  |                 |  |
|------------------------|---------------------------------------------------------------------------|--|-----------------------|------|--------------------------------------------|--------------|--------------------|--|-----------------|--|
| Garage Door No.:       | IBC-2010-130-11-I                                                         |  | Amarr                 | 2002 |                                            | Report Date: | 10/16/2023         |  |                 |  |
| Design Pressures:      | +24.1 psf, -28.1 psf                                                      |  | Test Pressures:       |      | +36.2 psf, -42.2 psf                       |              | Project No. 18-100 |  |                 |  |
| Static Test Date:      | 8/29/2018                                                                 |  | Static Test Location: |      | Amarr, 165 Carriage Ct., Winston-Salem, NC |              |                    |  |                 |  |
| Impact Test Date:      | 11/12-11/12/2018                                                          |  | Impact Test Location: |      | American Test Lab, Inc., Brevard, NC       |              |                    |  |                 |  |
| ASCE 7-22<br>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 |  |
|                        | 168 mph                                                                   |  | 152 mph               |      | 145 mph                                    |              | 138 mph            |  | 133 mph         |  |

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

- Amarr Drawing number IBC-2010-130-11-I dated 03/26/2019
- Structural Solutions, P.A. report for IBC-2010-130-11-I dated 10/16/2023
  - Static Air Pressure Test witnessed by Thomas L. Shelmerdine, PE
- American Test Lab, Inc. report number ATLNC 1112.02-18 dated 04/04/2019
  - 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 10'-2" wide x 8'-0" high x 2" thick sectional garage door, Amarr 2002. All sections were made of 20 ga galvanized steel sheet. The test unit is further described on Drawing IBC-2010-130-11-I.

### Test Standards and Report Conclusions:

The above referenced Test Reports state the following:

- The tests were conducted in accordance with ANSI/DASMA 108-12; ASTM E330-14; ASTM E1886-05 E1996-09 F588-07; ANSI/DASMA 115-12
- 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 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.

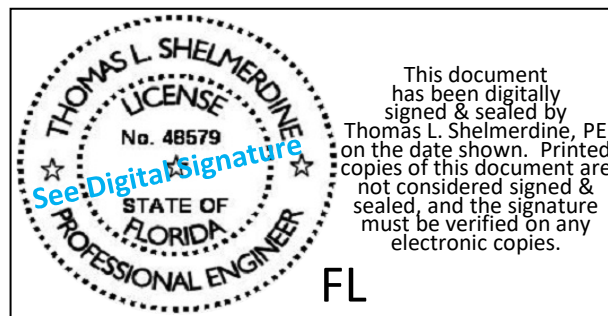
### Summary:

The 10'-2"x8'-0" Amarr 2002 door as described on drawing IBC-2010-130-11-I meets or exceeds the testing criteria as described above. By comparison to the construction of the 10'-2"x8'-0" Amarr 2002, the following doors also meet or exceed the above testing criteria, when constructed in accordance with drawing IBC-2010-130-11-I:

- 10'-2"x8'-0" Amarr 2012 doors, which is Amarr 2000 with drop-in insulation
- 10'-2"x8'-0" Amarr 2022 doors, which is Amarr 2000 with drop-in insulation and backer panels
- Amarr 2002, 2012, and 2022 doors, with widths up to 10'-2" and heights up to 24'-0"

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:



**STRUCTURAL SOLUTIONS, P.A.**

Thomas L. Shelmerdine, PE (Florida PE #0048579) (dba Structural Solutions of North Carolina, Inc., Florida Firm #29412)

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