

## EVALUATION REPORT

**Title:** Evaluation of Rolling Steel Door

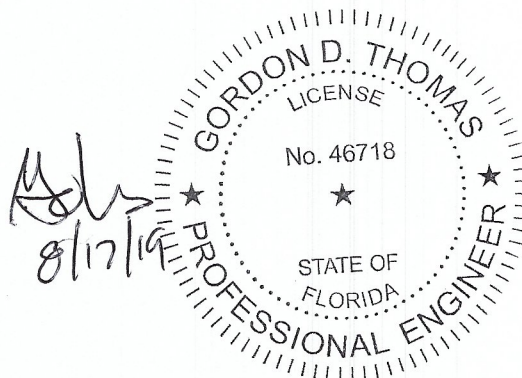
**Report #:** A2019-001R1

**Manufacturer:** Asta Door Corporation  
4255 McEver Industrial Drive  
Acworth, GA 30101

**Technical Contact:** Scott Robillard  
Staff Engineer

**Prepared by:** Gordon Thomas, P.E.  
Mason, OH 45050  
Florida # 46718

**Date:** August 17, 2019



### I. Introduction/ Scope

Based on wind load test results for a 16' wide rolling steel door with a design pressure of +55/-60 psf, the following evaluation will calculate additional door sizes and design pressures.

The following report evaluates the new overall door/frame design as it compares to the door/frame design tested.

### II. Reference Material

The following items were used to prepare the evaluation report:

- A. UL Test Report No SV30743-20190730, Dated 8/16/2019, 16 pages
- B. Asta Door Corporation Drawing 400-IM-WL-C, Certified Wind Load and Impact Rated 400/600 Series Angle Guides Roll-Up Door Assembly F8265 Slat, Dated 8/2/2019, 2 Sheets
- C. FL Application 15918 R3
- D. ANSI/DASMA 108-2017, Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination Of Structural Performance Under Uniform Static Air Pressure Difference
- E. ANSI/DASMA 115-2017, Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination Of Structural Performance Under Missile Impact and Cyclic Wind Pressure

### III. Evaluation

#### A. Wind Load Design

A positive pressure wind load is directed towards the interior of the opening. Conversely, a negative wind load is directed away from the opening. The following analysis is for additional door sizes and design pressures based on the test 16 wide door at +55/-60 psf.

The 16'x 10' 24 ga uninsulated door was tested per ANSI/DASMA 108-2017, ANSI/DASMA 115-2017

## B. Product Evaluation

### 1) Product Description

#### **Slat Doors and Insulated Doors - General**

The curtain on all models is suspended from a rotating shaft about which the curtain is coiled as the curtain is raised. In the closed position, 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. Wind locks are attached to each end of alternate slats. These wind locks engage the guides and help restrain the curtain under wind load. The door jambs are part of the main wind frame resisting system and usually are constructed of steel, concrete or concrete masonry units.

Guides can be made using three angles configured as E-Guides (bolted or welded) and Z-Guides (concrete, masonry, CMU) with a wind lock bar welded to the middle angle. The test door qualified the door for attachment using an E-Guide only for bolting or welding to steel jambs. Z-Guides using masonry anchors were not approved for this report.

#### **Slat Doors – 400 Series (flat slat), Impact Resistant**

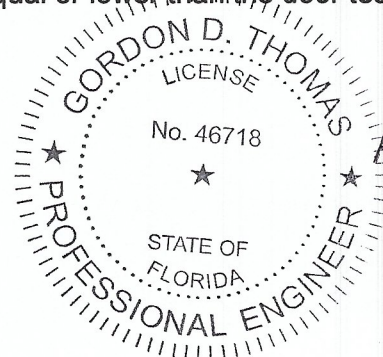
Slats are made of G90 coiled steel (Grade 5) coated with a primer and baked polyester finish coat. Slat gage number is identified by the last two digits of the model number: 24 ga (0.0236), 22 ga (0.029"), 20 gage (0.036"), 18 gage (0.045"). Maximum door height is limited to 3 times the test door height. Only the 24 ga uninsulated door was tested. Thicker gage slats may be used but it will not increase the design wind pressure or the size of the opening

#### **Slat Doors – 600 Series (Insulated double slat), Impact Resistant**

Slats are made of G90 coiled steel (Grade 5) coated with a primer and baked polyester finish coat. Face slat gage number is identified by the last two digits of the model number: 24 ga (0.0236), 22 ga (0.029"), 20 gage (0.036"), 18 gage (0.045"). The back slat on all models is 24 gage. Maximum door height is limited to 3 times the test door height. Only the 24 ga uninsulated door was tested. Thicker gage slats may be used but it will not increase the design wind pressure or the size of the opening

### 2) Calculations

The slat tension and loads applied to the jamb were calculated for the door tested using industry standard methods. For doors larger or smaller than the door tested, the wind pressure would be decreased or increased to ensure the slat tension is equal or lower than the door tested.



*Handwritten signature and date:*  
8/17/19

Max Door Width (ft)	Max Door Height (ft)	Design Pressures (psf)	Impact Rated
10	30	+101 / -108	N
11	30	+101 / -108	N
12	30	+87 / -93	N
13	30	+76 / -82	N
14	30	+68 / -73	N
15	30	+61 / -66	N
<b>16</b>	<b>30</b>	<b>+55 / -60</b>	<b>Y</b>
17	30	+49 / -53	N
18	30	+45 / -49	N
19	30	+41 / -45	N
20	30	+38 / -41	N
21	30	+35 / -38	N
22	30	+32 / -35	N
23	30	+30 / -33	N
24	30	+28 / -31	N

**Table 1 – Allowable Design Wind Loads**

3) Testing

The testing outlined in the report above was performed at an accredited lab and the facility was located at:

UL LLC  
750 Anthony Trail  
Northbrook, Illinois 60062

The test reports were signed by an authorized representative of UL LLC.

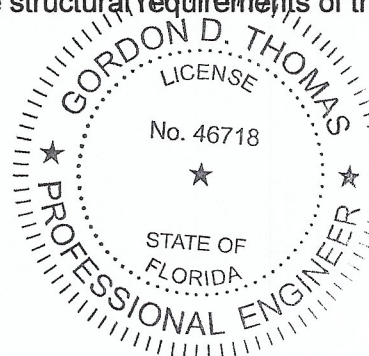
Testing was conducted to DASMA 108-2017 and 115-2017 which is equivalent to the requirements listed in DASMA 108-2012 and 115-2012.

C. Conclusion

Comparing the doors under evaluation against the door tested, I calculate that the doors and hardware under evaluation will be subjected to an equal or lower load and will perform equal or better than the approved door size.

Even though some of the openings were wider than the door tested, the lower design pressures would produce equal lower loads on all the critical components.

The drawings cited above are an explicit part of this evaluation report. The text of this report can not address all design details (fastener size, spacing) but relies upon the illustrations of these drawings. I conclude that the construction shown comply with the structural requirements of the 6<sup>th</sup> Edition (2017) Florida Building Code.

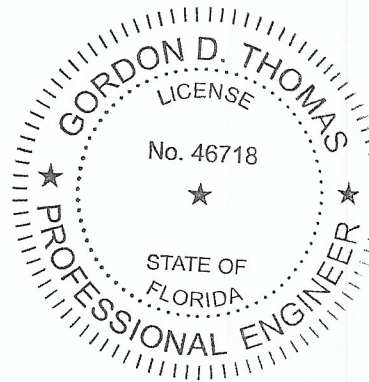


*[Handwritten Signature]*  
8/17/19

#### IV Limitations of Use

The following information summarizes the limitation of use for the doors under evaluation.

- |  |                               |
|--|-------------------------------|
| 1. Elevation Summary                       |                               |
| Maximum Door width:                        | 24 ft – 0 in                  |
| Maximum Door height:                       | 30 ft – 0 in                  |
| Maximum Wind Pressure (< 11 ft wide doors) | +101/-108 psf                 |
| Door Construction                          | Refer to drawing listed above |
| Wall/ Guide Anchor Types, Size & Spacing   | Refer to drawing listed above |
| Missile impact rating (DASMA 115)          | Yes (door tested only)        |



---

#### Certification of Independence of Evaluation Entity

I hereby certify that (1) I have no financial interest in Asta Door Corporation; (2) I am an independent licensed Professional Engineer in the State of Florida and; (3) I comply with the criteria of independence as stated in 61G20-3.009 (3), F.A.C. and 61G20-3.009(4), F.A.C.