

EVALUATION REPORT

Title: Commercial Full View Aluminum Doors – Series 8855, 453

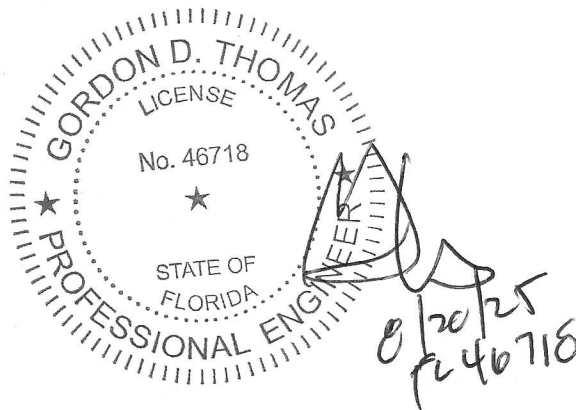
Report #: OHD2025-003

Manufacturer: Overhead Door Corporation
2501 South State Hwy 121
Lewisville, Texas 75067

Technical Contact Dwayne Kornish
Engineering Manager

Prepared by: Gordon Thomas, P.E.
Mason, OH 45040
Florida # 46718

Date: August 20, 2025



I. Introduction/ Scope

At the request of Overhead Door Corporation, I have completed an evaluation report for the stated products. The products listed in this report are currently listed under FL 32012 and approved for the 7th Edition (2022) Florida Building Code. This report will approve additional strut designs. The pressures listed on the wind load specification drawings are direct result of tests or engineering comparative analysis from actual tests. I have concluded that the construction shown on these drawings comply with the structural requirements of the 8th Edition (2023) Florida Building Code. I certify that I meet the requirements of "independence" as detailed in Florida Statutes.

This report is based on wind load tests of the Overhead Door Corporation 521 series commercial sectional full view aluminum doors and the Wayne Dalton Model 453 commercial sectional full view aluminum doors. The following report will review the wind load requirements for a variety of doors sizes and design pressures. Since every door size cannot be tested, engineering analysis using a comparative analysis were used to analyze the doors and the specified wind load design pressures.

All testing from Overhead Door Corporation were conducted per ANSI/DASMA 108 & ANSI DASMA 115. The Overhead Door Corporation TREQ facility Dallas Texas and the Wayne Dalton, a Division of Overhead Door Corporation Pensacola, Florida facility are accredited by IAS, TL368.

II. Reference Documents

The following documents were referenced in the evaluation report.

- Overhead Door Corporation Wind Load Test Reports: #916, #917, #918, #920, #021420A, and #032515A, #033115A, #022820A, #81120A.
- Intertek Test Report J 1626.03-801-18-R1, K 3485-02-801-18-R1
- LeRoy Krupke Evaluation Report # 012020-1, dated September 28, 2020.
- Overhead Door Corporation hardware drawing 408717
- Wayne Dalton Wind Load Specification Drawings. All drawings are based on the latest revision per table below: 365189, 365190, 365191, 365192, 365193, 365194, 365195 and 365230.
- Overhead Door Corporation Series 521 Section Assembly Drawing 409988.

III. Product Configuration Overview

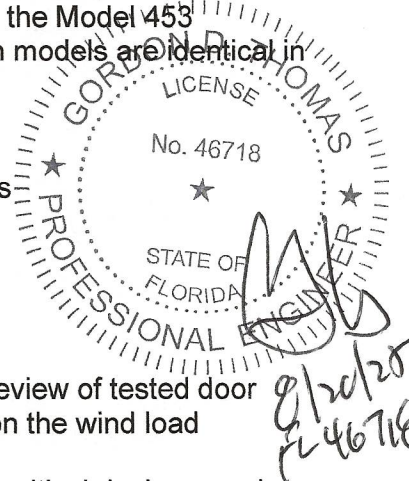
The Overhead Door Series 521 is a Commercial Sectional Full View Aluminum Door and the Wayne Dalton Model 453 Commercial Sectional Full View Aluminum Door are equivalent door designs. Both models are identical in construction and design. The primary commercial application is for environments where maximum light and/or visual access are required. The aluminum sections are made from 6061-T3 alloy.

The Wayne Dalton Series 8855 Residential Sectional Full View Aluminum Door and the Model 453 Commercial Sectional Full View Aluminum Doors are equivalent door designs. Both models are identical in construction and design.

The set of products is comprised of only 2 model numbers.

Wayne Dalton Model 8855/453 series doors:

Panel Thickness
1 3/4"



IV. Evaluation

Since every door size cannot be tested, engineering analysis using a comparative review of tested door configurations were used in this analysis to determine design wind loads specified on the wind load specification drawings listed in this report.

Based on comparative analysis from maximum bending moments ($M=wL^2/8$) on the critical design members. The design pressure can be compared to changes in door width with the equation below:

$$L_1^2 / L_2^2 = w_2 / w_1$$

Where,

L_1 width of door 1 and L_2 width of door 2

w_1 wind load pressure door 1 and w_2 wind load pressure door 2

In addition to the above comparative analysis, door testing also established load limits for the following items:

Track Rollers	Roller Load = $L \times w$, assuming 24" tall sections
End Hinge	End Hinge Load = Roller Load
Panel End Stiles	End Stile Load = Roller Load
Track Jamb Brackets	Jamb Bracket Load (lbs./ft) = Roller Load / 2 assuming 24" tall sections
Glazing Width	Glazing Width = L / Center Stile spacing @ tested design pressure
Track Gage	Track Gage by track roller load and jamb bracket spacing.

The Limitations and allowable loads were determined from the physical door testing referenced above. This analysis was used to create the door configurations detailed on the wind load specification drawings listed in this report.

1) Individual sections react like a simply supported beam. Each reinforcement configuration has a maximum allowable moment that cannot be exceeded.

- Intermediate rail without fin, top and bottom rail without strut; maximum allowable moment 7296 in-lbs. Report #920.
- Intermediate rail with fin, top and bottom rail with HS1 strut; maximum allowable moment 17664 in-lbs. Report #917.
- Intermediate rail with fin & steel angle 2-7/8 x 1-3/4, top and bottom rail with HS2 strut; maximum allowable moment 20736 in-lbs. Report #918.
- Intermediate rail with fin & 2 steel angles 2-7/8 x 1-3/4, top and bottom rail with HS3 strut; maximum allowable moment 28416 in-lbs. Report #916.
- Intermediate rail with fin & steel angle 3 x 2 x 3/16, top rail with HS3 strut and bottom rail with 3 x 2 x 3/16 angle; maximum allowable moment 36864 in-lbs. Report #032515A. Impact tested Report #033115A.
- Intermediate rail with fin & steel angle 3 x 2 x 3/16, top and bottom rail with 4" 16 ga struts; maximum allowable moment 41796 in-lbs. Report #021420A. Impact tested Report #022820A.

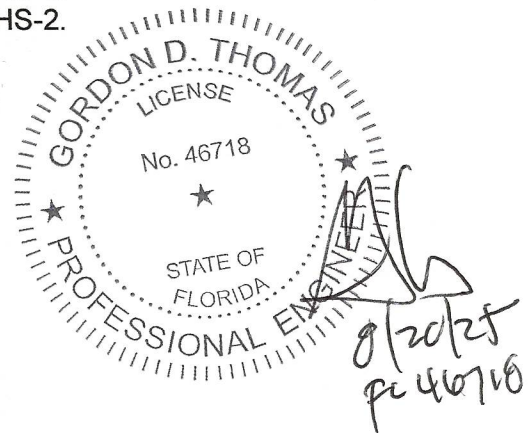
- 2) Maximum Roller Loads for each roller type, steel 2" or 3" - 10 ball roller.
 - a. 7/16 roller stem diameter, maximum load 432 lbs. Report #918.
 - b. 5/8 roller stem diameter, maximum load 592 lbs. Report #916.
 - c. 7/16 high tensile stem diameter, maximum load 592 lbs. Report #021420A & Report #916 for non-reinforced end stile limitations.
 - d. 7/16 stem 2" Nylon rollers are equivalent in strength and an acceptable substitution for the steel 2" - 10 ball rollers. Report J 1626.03-801-18-R1.
- 3) Maximum End Hinge Load
 - a. 11 gage end hinges, maximum load 774 lbs. Report #022820A.
 - b. 14 gage #1 end hinge, maximum load 644. Report K 3485-02-801-18r1
- 4) Panel End Stile Configuration load limit
 - a. Single end stile maximum load 368 lbs. Report #917
 - b. Double end stile with angle 2-7/8 x 1-3/4 maximum load 432 lbs. Report #918
 - c. Double end stile with 2 angle 2-7/8 x 1-3/4 maximum load 592 lbs. Report #916
 - d. Double end stile with internal reinforcement maximum load 774 lbs. Report #021420A.
- 5) Track Jamb Bracket Spacing load limit and Track Gage load limit
 - a. 0.049" Track thickness with 24" jamb bracket spacing, maximum load 76 lbs./ft. Report #920
 - b. 0.049" Track thickness with 12" jamb bracket spacing, maximum load 184 lbs./ft. Report #917
 - c. 0.068/0.072" track thickness with 12" jamb bracket spacing, maximum load 296 lbs./ft. Report #916
 - d. 0.085" track thickness with 12" jamb bracket spacing & maximum load 387 lbs./ft. Report #021420A.
- 6) Panel glazing width limit @ maximum design pressure
 - a. Minimum thickness 1/8" DSB glass, maximum center stile spacing 54" @ 50 psf Report #81120A
- 7) Door Tracks
 - a. All door assemblies listed in this report have both vertical and horizontal tracks from a minimum 33 ksi steel and finished with an ASTM A525 G-40 galvanized coating. The vertical tracks are attached to the supporting structure with jamb brackets as specified on the Wind Load Specification drawings.

Additional testing was completed under AETR-00958 (dated 7/14/2025) along with supporting calculations and comparative analysis. The results are as follows:

Strut	Thickness, T (in)	Height	Material	Yield Strength (psi)	Moment of Inertia Iy (in ⁴)	Max Bending Moment (in-lbs)
2" 20 GA	0.034 min	2.000	SS Grade 80	80,000	0.1014	6709
3" 20 GA	0.034 min	3.000	SS Grade 80	80,000	0.296	13394

Conclusions from the testing and comparative analysis are as follows:

1. 2" 20GA strut may replace and/or be substituted for current HS-1.
2. 3" 20GA strut may replace and/or be substituted for current HS-2.



V. Evaluation Summary

Using comparative analysis, the following table summarizes the door configurations that have been evaluated. All doors detailed on the specified wind load drawings have not exceeded the maximum allowable loads and moments defined above for this model door.

Item	Door Model	Max Door Size	Design Pressure	Wind Load Specification Drawing	Drawing Revision	Note
1	8855 & 453	22'2" x 30' 1"	+/- 18 psf	365194	5/8/2025	Static Test
2	8855 & 453	20'2" x 30' 1"	+/- 22 psf	365193	5/8/2025	Static Test
3	8855 & 453	18'2" x 30' 1"	+/- 26 psf	365192	5/8/2025	Static Test
4	8855 & 453	16'2" x 30' 1"	+/- 31 psf	365191	5/8/2025	Static Test
5	8855 & 453	14'2" x 30' 1"	+/- 37 psf	365190	5/8/2025	Static Test
6	8855 & 453	10'2" x 30' 1"	+/- 50 psf	365189	5/8/2025	Static Test
7	8855 & 453	16'2" x 30' 1"	+48/- 54 psf	365195	8/1/2025	Impact & Cyclic Test
8	8855 & 453	18'2" x 30' 1"	+43/- 48 psf	365230	8/1/2025	Impact & Cyclic Test

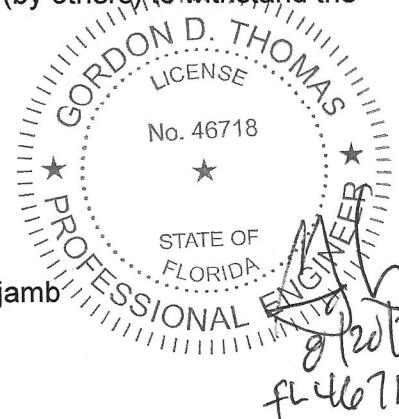
VI. Limitations of Use

The drawings referenced above provide the primary details for limitation of use. This includes hinges, top/bottom fixture, roller stem assemblies, struts, angles, door track and brackets. The drawings cited above are an explicit part of the evaluation report. The text of this report does not attempt to address all design details but relies upon the illustration and text of these drawings and instructions as well. Each door should be chosen on the "psf" requirement determined for a specific installation or locale.

The products shown on Drawings 365195 & 365230 have been tested for impact resistance and therefore are impact and cycle rated.

This Evaluation Report does not address design of the wall/jambs themselves. These drawings only illustrate common means to attach the door to jambs. Walls and Jambs should be designed (by others) to withstand the loads imposed by the door onto the building.

Maximum Door Width	24'2" (+/-18psf)
Maximum Door Height	30'1"
Maximum Design Wind Load	+48/-54 psf (16'2" width)
Door Section Type	Referenced by Door Model above
Mounting	a. Angle in – steel jambs b. Angle in & bracket mount masonry jamb c. Angle out - wood jamb d. Jamb bracket mount - wood jamb



IDENTIFICATION

Each Model series covered by this report shall be labeled with the manufacturer's name and/or trademark for field identification.

Certification of Independence of Evaluation Entity

I hereby certify that (1) I have no financial interest in Overhead 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 9B-72.110 (3), F.A.C. and 9B-72.110(4), F.A.C.