

## John E. Scates, Professional Engineer

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October 6, 2023

C.H.I. Overhead Doors  
1485 Sunrise Dr.  
Arthur, IL 61911

Re: FL 10408  
**Evaluation Report for Residential Sandwich Doors  
Model 53xx family**

To Whom It May Concern:

At the request of C.H.I. Overhead Doors, I have reviewed the drawings and tests listed below and 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.

Rational analysis methods have been applied to define psf pressure ratings for some widths. Each "static" pressure was evaluated based on its tested size to take the least of the results of bending moment and end load conditions. Each "impact" pressure was evaluated to be the least of the achieved impact psf (with no change or allowance for width variations) and the rationalized static psf. Widths greater than the impact-tested door width were not included.

### Drawings

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These products are for **static** pressure only:

|              |                        |
|--------------|------------------------|
| Z4-09-04307  | 6'-00" through 12'-00" |
| Z7-09-04307  | 6'-00" through 14'-00" |
| Z10-09-04307 | 9'-00" through 10'-00" |

|              |                        |
|--------------|------------------------|
| Z4-10-04307  | 6'-00" through 12'-00" |
| Z7-10-04307  | 6'-00" through 15'-00" |
| Z9-10-04307  | 9'-00" through 10'-00" |
| Z10-10-04307 | 9'-00" through 10'-00" |

|             |                         |
|-------------|-------------------------|
| Z4-16-04307 | 11'-06" through 20'-00" |
| Z6-16-04307 | 10'-00" through 20'-00" |
| Z9-16-04307 | 10'-00" through 20'-00" |

|              |                         |
|--------------|-------------------------|
| Z10-16-04307 | 16'-00" through 20'-00" |
| Z4-18-04307  | 12'-00" through 20'-00" |
| Z9-18-04307  | 18'-00" through 20'-00" |

These products are for **static and impact** (windborne debris):

|               |                               |
|---------------|-------------------------------|
| Z9i-10-04507  | 10'-0" wide +44.7 / -51.5 psf |
| Z10i-10-04507 | 10'-0" wide +49.9 / -56.7 psf |
| Z5i-20-04507  | 20'-0" wide +27.9 / -31.1 psf |
| Z7i-20-04507  | 20'-0" wide +34.1 / -38.0 psf |

## Test Reports

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### Tests for Static drawings:

#### 9' wide Series 5330

| <b>Drawing</b> | <b>ATI Test Report</b> |
|----------------|------------------------|
| Z4-09-04307    | 79637.01-602-47        |
| Z7-09-04307    | 79638.01-602-47        |
| Z10-09-04307   | 79639.01-602-47        |

#### 10' wide Series 5330

|              |                                    |
|--------------|------------------------------------|
| Z4-10-04307  | 79642.01-602-47<br>94222.01-602-47 |
| Z7-10-04307  | 79641.01-602-47<br>97983.01-602-44 |
| Z9-10-04307  | 79821.01-602-47                    |
| Z10-10-04307 | 79640.01-602-47                    |

#### 16' wide Series 5330

|              |                                    |
|--------------|------------------------------------|
| Z4-16-04307  | 79643.01-602-47                    |
| Z6-16-04307  | 94223.01-602-47                    |
| Z9-16-04307  | 79974.01-602-47<br>94224.01-602-47 |
| Z10-16-04307 | 79645.01-602-47                    |

#### 18' wide Series 5330

|             |                 |
|-------------|-----------------|
| Z4-18-04307 | 79648.01-602-47 |
|-------------|-----------------|

Z9-18-04307

79975.01-602-47

Tests for Impact drawings:

| <b>Drawing</b> | <b>Static test</b> | <b>Impact test</b> |
|----------------|--------------------|--------------------|
| Z9i-10-04507   | 79821.01-602-47    | 97306.01-602-44    |
| Z10i-10-04507  | 79635.01-602-47    | 97306.01-602-44    |
| Z5i-20-04507   | 79647.01-602-47    | 97303.01-602-44    |
| Z7i-20-04507   | 79975.01-602-47    | 98905.01-602-44    |

**Test Facility & Procedures**

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For these products, testing complied with **DASMA 108-2017, DASMA 115-2017.**

Impact, cyclic and static tests were conducted by Architectural Testing of Schofield, WI at the Schofield location. Static tests were also conducted by ATI at the C.H.I. Overhead Doors "in house" test facility in Arthur, IL. These test facilities were accredited at the time of testing.

Static testing was conducted in accordance with ANSI/DASMA 108-05 (and -2012).

Large Missile impact and cycling tests were conducted in accordance with ANSI/DASMA 115-05 (and -2012) as well as ASTM E1886-05/E1996-09 (noted here for historical purposes).

All test reports were signed by a Florida PE.

The designs reflected on the drawings represent the "worst case" construction of the doors if there were slight differences between the DASMA 108 Static and DASMA 115 Impact tested products. The strongest or most reinforced features were incorporated to ensure compliance, as rational engineering analysis.

**Installation Instructions**

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The drawings provide installation instructions peculiar to windload reinforcement. "Supplemental\_Instructions\_Overlay" include additional details.

**Anchorage Requirements:**

Attachment drawings provided by C.H.I. Overhead Doors detail how to fasten back jambs equivalent in strength to southern pine or spruce pine fir to the structure. Fasteners used to secure the back jambs must be long enough to achieve the minimum embedment as specified.

The direct mounting of door track on top of drywall or other non-structural material is outside of the scope of C.H.I. Overhead Doors wind load evaluations. Residential garage door track generally has small metal pads that contact the drywall. The loads generated during high wind events may be concentrated by these pads. C.H.I. Overhead Doors promotes the use of back jambs to effectively absorb and redistribute wind loads.

Mounting of 2x6 wood "Back Jamb" or "bucks" to the building structure as a surface to secure the track brackets are detailed on these C.H.I. attachment drawings, depending upon the type of wall construction:

BJA-101 using Concrete Anchors

BJA-102 using Lag Screws

If mounting of the track directly to building jambs is desired, more fasteners and track brackets may be necessary in addition to those shown on the drawings to obtain sufficient track attachment. These C.H.I. attachment drawings provide guidelines:

BJA-103 Steel Attachment Detail

BJA-104 CMU Filled Attachment Detail

BJA-105 Concrete Attachment Detail

BJA-106 Attachment Detail for Wood

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

## Model Descriptions

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All doors in this evaluation are 2" thick overall (before decorative add-ons) on a base polystyrene sandwich door with minimum 27-gage interior and exterior steel skins. These door model variations are approved for as part of this family of the drawings:

### 5330 family includes:

53xx - pre-finished steel base with poly- accent boards laminated to face.

54xx – cedar/mahogany faced with accent boards.

55xx - fiberglass faced with vertical beaded pattern laminated to steel sandwich base section.

56xx – a 53xx with urethane insulation rather than styrene.

57xx – a 54xx with urethane insulation rather than styrene.

58xx – a 55xx with urethane insulation rather than styrene.

## Additional Limitations

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The drawings cited above are an explicit part of this evaluation report. The text of this report does not attempt to address all design details but relies upon the illustrations and text of these drawings and instructions as well.

Low Headroom track may be used in lieu of the Standard Lift track. The horizontal track may be reinforced with an angle as needed to support the door weight. The construction of the horizontal track, including the track thickness and additional support when needed, is determined by C.H.I. Overhead Doors and does not affect this windload evaluation.

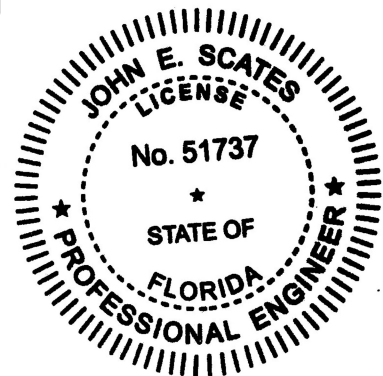
The rated pressures may not be achieved unless the door is held closed during the wind event. Both vertical tracks must be engaged with a lock (right and left side), or alternately an electric drawbar operator attached to the door prior to the wind event.

Certain doors have been tested to Large Missile Impact requirements of the wind-borne debris regions, designated with an "i" in the drawing name. In addition, steel doors not tested for wind-borne debris may qualify for use in wind-borne debris regions according the FBC if they do not contain glazing.

These products are *not* intended for the Florida High Velocity Hurricane Zone (HVHZ).

Digitally signed by John E Scates  
Date: 2023.10.06 15:53:28 -05'00'

John E. Scates, P.E.  
**Florida PE # 51737**



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