

John E. Scates, Professional Engineer

May 29, 2025

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

Re: FL 15074-R11
Evaluation Report for Residential Sandwich Doors

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 and IBC/IRC 2018/2021/2024 (Texas). 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. The pressures listed on the drawings are direct results of these tests or conservative engineering rational analysis from the actual tests, except that no extrapolations of impact pressures were used.

This product has been tested and constructed to meet PSF specifications, not MPH. The conversion of MPH to PSF requires site-specific information that is unknown to the manufacturer.

Drawings

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

Z3-10-02303	10'-00" wide max
Z3-10-023L3	10'-00" wide max
Z3-18-02303	18'-00" wide max
Z4-09-02303	09'-00" wide max
Z4-16-02303	16'-00" wide max
Z4-16-13301	16'-00" wide max (Model 2291)
Z5-10-02303	12'-00" wide max
Z5-10-023L3	12'-00" wide max
Z5-16-02303	16'-00" wide max
Z5-16-13301	16'-00" wide max (Model 2291)

Z6-10-02303	12'-00" wide max
Z6-10-023L3	12'-00" wide max
Z6-16-02303	20'-00" wide max
Z6-18-02303	20'-00" wide max

Z7-10-02303	12'-00" wide max
Z7-10-023L3	12'-00" wide max
Z7-16-02303	16'-00" wide max
Z7-18-02303	18'-00" wide max

Z8-09-02303	09'-00" wide max
Z8-16-02303	20'-00" wide max
Z8-18-02303	20'-00" wide max

Z9-09-02303	09'-00" wide max
Z9-16-02303	16'-00" wide max
Z9-18-02303	20'-00" wide max

Z10-09-02303	10'-00" wide max
Z10-10-02303	12'-00" wide max
Z10-10-023L3	12'-00" wide max
Z10-16-02303	16'-00" wide max

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

Z4i-09-02503	09'-00" wide max
Z4i-16-02503	16'-00" wide max
Z4i-18-02503	18'-00" wide max

Z6i-16-02503	16'-00" wide max
Z6i-18-02503	18'-00" wide max
Z6i-20-02503	20'-00" wide max

Z7i-20-02503	20'-00" wide max
--------------	------------------

Z8i-09-02503	09'-00" wide max
--------------	------------------

Z9i-10-02503	10'-00" wide max
--------------	------------------

Z11i-10-02503	10'-00" wide max
---------------	------------------

Note: Each drawing contains a table with the pressure ratings for an approved range of sizes. Narrower doors may be available and are approved, but will carry the same pressure rating as the narrowest door in the table.

Test Reports

Drawing	ATI Report #
Z3-10	75895.01-602-47
Z3-18	77112.01-602-47
Z4-09	75899.01-602-47
Z4-16	76349.01-602-47
Z5-10	75898.01-602-47
Z5-16	76351.01-602-47
Z6-10	75900.01-602-47
Z6-16	87194.01-602-47
Z6-18	77118.01-602-47
Z7-10	75902.01-602-47
Z7-16	76353.01-602-47

Drawing	ATI Report #
Z7-18	77119.01-602-47
Z8-09	75906.01-602-47
Z8-16	76356.01-602-47
Z8-18	77121.01-602-47
Z9-09	75909.01-602-47
Z9-16	76357.01-602-47 79320.02-602-47
Z9-18	77122.01-602-47
Z10-09	75911.01-602-47
Z10-10	75910.01-602-47
Z10-16	76358.01-602-47

Drawing	ATI Report #
Z4i-09	75899.01-602-47 86736.01-602-78
Z4i-16	76349.01-602-47 86899.01-602-78
Z4i-18	77114.01-602-47 86900.01-602-78
Z6i-16	87194.01-602-47 91662.03-602-18
Z6i-18	77118.01-602-47 87132.01-602-47

Drawing	ATI Report #
Z6i-20	77121.01-602-47 97303.01-602-44
Z7i-20	77122.01-602-47 97303.01-602-44
Z8i-09	75909.01-602-47 87119.01-602-78
Z9i-10 also	97984.01-602-44 75911.01-602-47 97306.01-602-44
Z11i-10	75910.01-602-47 97306.01-602-44

Additional reports from American Test Lab (ATLNC)

(Model 2291)

Dwg Z4-16-13301	ATLNC 0129.01-25
Dwg Z5-19-13301	ATLNC 0129.02-25

(alternate impact window):

ATLNC 0211.02-20	ATLNC 0204.02-20
ATLNC 0211.03-20	ATLNC 0205.02-20

Test Facility & Procedures

Tests were conducted at three facilities:

- Architectural Testing of Schofield, WI at the Schofield location.
- Architectural Testing using the accredited C.H.I. test facility in Arthur, IL.
- American Test Lab, Inc., North (ATLNC) located in Brevard, NC.

These test facilities were accredited at the time of testing.

Static pressure testing was conducted in accordance with ANSI/DASMA 108-02 and/or ANSI/DASMA 108-05 and ANSI/DASMA 108-17 (ATLNC) and ASTM E330-14 (ATLNC). The testing also complied with the requirements of ASTM E330-02 and ANSI/**DASMA 108-2017**. All these standards are equivalent test procedures to meet the requirements of the FBC for garage doors.

Large Missile impact and cycling tests were conducted in accordance with ANSI/DASMA 115-05. ATLNC testing was per ANSI/DASMA 115-17. All testing also complied with the requirements of ANSI/**DASMA 115-2017**. These doors are not intended for the High Velocity Hurricane Zone (HVHZ).

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.

Glazing

The impact drawings include an impact window option "by C.H.I.". The full description of the as-tested product is abbreviated on the drawings since it is factory assembled. Details:

1/4" thick polycarbonate (Makrolon) riveted to the exterior face of the door using 3/16" bulbed rivets. The polycarbonate overlaps the exterior skin by 1-1/4" per side. The daylight opening is 16-3/4" x 10-1/4" (with 12 rivets) or 38" x 10-1/4" (with 28 rivets).

Installation Instructions

The drawings provide installation instructions peculiar to windload reinforcement

These drawings highlight the unique construction details related to windload reinforcement. They do not represent the complete construction details. In some instances, C.H.I. Overhead Doors may provide additional hardware, such as double end hinges, that must be used even if not part of the windload reinforcement package.

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 and damage the drywall. Therefore, C.H.I. Overhead Doors promotes the use of back jambs to effectively absorb and redistribute wind loads.

The wood species of the 2x6 is specified as Southern Pine (aka Southern Yellow Pine) on the door drawings.

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

All doors in this evaluation are 2" thick overall. In each family of doors, the weakest or thinnest skin product was tested to prove the entire family line. Thus, all of these door model variations are approved for each family of the drawings:

2283 family includes:

2283 Insulated double skin door - polystyrene, 27ga ext/ 27ga int, standard emboss.
 2284 - 2283 with flush exterior
 2285 - 2283 with thicker front skin (26ga / 27ga)
 2286 - 2284 with thicker front skin (26ga / 27ga)
 2583 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, shaker emboss
 4283 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, long panel emboss
 4284 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, FLUSH
 4285 Insulated double skin door - polystyrene, 26ga ext/ 27ga int skin, long panel emboss
 5283 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, short carriage house emboss
 5284 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, FLUSH
 5285 Insulated double skin door - polystyrene, 26ga ext/ 27ga int skin, short carriage house emboss
 5286 Insulated double skin door - polystyrene, 26ga ext/ 27ga int skin, FLUSH
 5983 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, long carriage house emboss
 5984 Insulated double skin door - polystyrene, 27ga ext/ 27ga int skin, FLUSH
 5985 Insulated double skin door - polystyrene, 26ga ext/ 27ga int skin, long carriage house emboss
 5986 Insulated double skin door - polystyrene, 26ga ext/ 27ga int skin, FLUSH

2216 family uses stronger poured -in polyurethane insulation, and includes:

2216 Insulated double skin door - polyurethane, 27ga ext/ 27ga int, standard emboss.
 2217 Insulated double skin door - polyurethane, 27ga ext/ 27ga int, flush exterior.
 2516 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, shaker emboss
 2518 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, shaker emboss
 2290 Series – Insulated double skin door - polyurethane, 25ga ext/27ga int skin, recessed panel.

Includes Models 2291, 2294, 2296 & 2298.

4216 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, long panel emboss
 4217 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, FLUSH
 5216 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, short carriage house emboss
 5217 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, FLUSH
 5916 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, long carriage house emboss
 5917 Insulated double skin door - polyurethane, 27ga ext/ 27ga int skin, FLUSH

Additional Limitations

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.

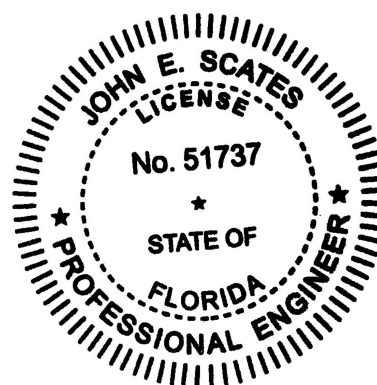
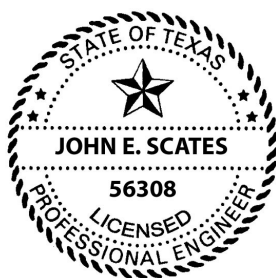
Each door should be chosen based on the "psf" requirement determined for a specific installation or locale.

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: 2025.05.29 15:26:09 -05'00'

John E. Scates, P.E.
Florida PE # 51737
Texas PE # 56308 / F-2203

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.