

John E. Scates, Professional Engineer

January 27, 2025

Haas Door
Mark Schweitzer
320 Sycamore St.
Wauseon, OH 43567

Re: FL 17430
Evaluation Report for Pan and Sandwich - HVHZ

To Whom It May Concern:

At the request of Haas Door, I have reviewed the drawings and tests listed below. These tests were conducted by Architectural Testing according to TAS 201/202/203-94 test procedures. The pressures listed on the drawings are direct results of these tests or conservative engineering rational analysis from the actual tests, except that no extrapolation of impact pressures was used. 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.

Testing included all aspects of the TAS process, including:

1. Static pressure testing
2. Impact and cyclic testing
3. Meeting the deflection recovery requirements
4. Meeting the forced entry requirement

Additional testing was performed:

1. The galvanizing + paint coating was subjected to salt spray testing for 1000 hours against a G90 control sample. All paint coated samples were equivalent or superior to bare G90.
2. The foamed plastic core of the sandwich door products was tested for flame spread and smoke developed (per ASTM E84). The results for the foam plastic were less than the required targets of 75 FSI and 450 SDI.
3. The foamed plastic core of the sandwich door products was tested per ASTM D1929 for self-ignition temperature. The result was 870 F.
4. The steel and aluminum skins of the sandwich and pan doors were tensile tested per ASTM E8.

Ref: Dade NOA 23-0830.06 thru .14
Dade NOA 24-0719.04 thru .07

Drawings

WL-0600-0110-08-65-65HVHZ RevH 9'-2" wide, +65.0/-65.0 PSF, Model HT 600 Series
 WL-0600-0122-08-53-60LHVHZ Rev- 10'-2" wide, +53.0/-60.0 PSF, Model HT 600 Series
 WL-0600-0194-08-48-52HVHZ RevH 16'-2" wide, +48.0/-52.0 PSF, Model HT 600 Series
 WL-0600-0194-08-48-52LHVHZ Rev- 16'-2" wide, +48.0/-52.0 PSF, Model HT 600 Series
 WL-0600-0218-08-45-50HVHZ RevG 18'-2" wide, +45.0/-50.0 PSF, Model HT 600 Series
 WL-0600-0218-08-45-50LHVHZ Rev- 18'-2" wide, +45.0/-50.0 PSF, Model HT 600 Series

WL-5000-0110-08-65-74HVHZ RevH 9'-2" wide, +65.0/-73.5 PSF, Model HT 5000 Series
 WL-5000-0194-08-48-52HVHZ RevH 16'-2" wide, +48.0/-52.0 PSF, Model HT 5000 Series
 WL-5000-0218-08-45-50HVHZ RevH 18'-2" wide, +45.0/-50.0 PSF, Model HT 5000 Series

WL-2000-0110-08-65-74HVHZ RevG 9'-2" wide, +65.0/-73.5 PSF, Model 2000 Series
 WL-2000-0194-08-48-52HVHZ RevG 16'-2" wide, +48.0/-52.0 PSF, Model 2000 Series
 WL-2000-0194-08-38-42HVHZ Rev- 16'-2" wide, +38.0/-42.0 PSF, Model 2000 Series
 WL-2000-0218-08-45-50HVHZ RevG 18'-2" wide, +45.0/-50.0 PSF, Model 2000 Series

Note: The drawing titles above are simply descriptive, and do not represent any limitation on the sizes and pressures. Each drawing contains a table with the full sizes vs. psf ratings.

Test Reports

Test Reports

Steel Sandwich

Intertek/ATI E1289.01-550-18	TAS 201/202/203-94	9'-2" wide x 8'-0" tall (4-sections)
Intertek/ATI E1289.02-550-18	TAS 201/202/203-94	16'-2" wide x 8'-0" tall (4-sections)
Intertek/ATI E1289.03-550-18	TAS 201/202/203-94	18'-2" wide x 8'-0" tall (4-sections)

@ 1701 Westfork Drive, Suite 106, Lithia Springs, GA

ATLNC 0506.01-24	TAS 201/202/203-94	10'-2" wide x 8'-0" tall (4-sections)
ATLNC 0509.01-24	TAS 201/202/203-94	16'-2" wide x 8'-0" tall (4-sections)
ATLNC 0509.02-24	TAS 201/202/203-94	18'-2" wide x 8'-0" tall (4-sections)

@ 1122 Calvert Road, Brevard, NC

Alum Sandwich

Intertek/ATI E1289.07-550-18	TAS 201/202/203-94	9'-2" wide x 8'-0" tall (4-sections)
Intertek/ATI E1289.08-550-18	TAS 201/202/203-94	16'-2" wide x 8'-0" tall (4-sections)
Intertek/ATI E1289.09-550-18	TAS 201/202/203-94	18'-2" wide x 8'-0" tall (4-sections)

@ 1701 Westfork Drive, Suite 106, Lithia Springs, GA

Steel Pan

Intertek/ATI E1289.04-550-18 TAS 201/202/203-94 9'-2" wide x 8'-0" tall (4-sections)
 Intertek/ATI E1289.05-550-18 TAS 201/202/203-94 16'-2" wide x 8'-0" tall (4-sections)
 Intertek/ATI E1289.06-550-18 TAS 201/202/203-94 18'-2" wide x 8'-0" tall (4-sections)
 @ 1701 Westfork Drive, Suite 106, Lithia Springs, GA

ATLNC 0506.02-24 TAS 201/202/203-94 16'-2" wide x 8'-0" tall (4-sections)
 @ 1122 Calvert Road, Brevard, NC

Intertek/ATI E1289.10-106-18 Salt Spray D714 / D1654 / D117
 Intertek/ATI E1289.11-106-18 Tensile Test ASTM E8
 Intertek/ATI E1289.12-106-18 Tensile Test ASTM E8
 Intertek/ATI E1289.13-106-18 Tensile Test ASTM E8
 Intertek/ATI E1289.14-106-18 Tensile Test ASTM E8
 @ 130 Derry Court, York, PA

QAI Laboratories # RJ5251F-1 ASTM E84 Flame-spread and Smoke-Developed
 QAI Laboratories # RJ5251F-2 ASTM E84 Flame-spread and Smoke-Developed
 QAI Laboratories # RJ5255F-1 ASTM D1929 Ignition Temperature of Plastics
 @ 8385 White Oak Ave, Rancho Cucamonga, CA

All Intertek testing was performed in 2014, 2015 or 2017.

All ATLNC testing was performed in 2024.

All test reports were signed/sealed by a Florida P.E.

Calculations

The tested jamb attachment was confirmed via calculations.

The Lag screws that secure the door to the wall (2x6 SYP wood) were checked against the tested quantities. The calculated lag quantity (and track bracket quantity) did not exceed the tested quantity.

The fasteners to attach the 2x6 to the building were computed. For attachment to a concrete wall, the Tapcon+ fasteners limits were computed according to ACI 318 using data from ICC ES ESR-3699. For attachment of the 2x6 to a wood wall, ANSI/AF&PA NDS was used for lag screw computations into SYP and SPF wood substrates. Results were tabulated on Sheet 3 of each drawing.

Installation

Anchorage Requirements:

The door drawings include means to attach the doors to the building structure as detailed on Sheet 3 of each drawing using an added 2x6 to the face of the garage wall. The species of the 2x6 wood must be Southern (Yellow) Pine, specific gravity of 0.55 min.

The direct mounting of door track on top of drywall or other non-structural material is outside of the scope of this wind load evaluation.

This Evaluation Report does not address design of the wall/jambs themselves. These attachment drawings only illustrate common means to attach the 2x6 jambs to the wall. Walls should be designed (by others) to withstand the loads imposed by door onto the building.

Model Descriptions

In each family of doors, the weakest or thinnest skin product was tested to prove the entire family line. Thus, these door model variations are approved for each family of the drawings:

The HT 600, HT 700, HT 900, HT 2000, HT 800 family are steel polyurethane sandwich doors

These variations are included in this approval:

1-3/8" overall thickness: 610, 612, 614, 616, 632, 633, 660 (tested), 661, 663, 664, 670, 671, 672, 673, 674, 680, 681, 682, 690, 667, 668, 669, 678, 679, 687

1-3/8" overall thickness: 9000 Series (no windows/lites available)
w/ 5/8" thick overlays attached.

1-3/4" overall thickness: 710, 712, 714, 716, 732, 733, 760, 761, 763, 764, 770, 771, 772, 773, 774, 780, 781, 782, 790, 767, 768, 769, 778, 779, 787

2" overall thickness: 2010, 2012, 2014, 2016, 2032, 2033, 2060, 2061, 2063, 2064, 2070, 2071, 2072, 2073, 2074, 2080, 2081, 2082, 2090, 2067, 2068, 2069, 2078, 2079, 2087

3" overall thickness: 810, 812, 814, 816, 832, 833, 860, 861, 863, 864, 870, 871, 872, 873, 874, 880, 881, 882, 890

These are all steel sandwich doors with polyurethane core. The minimum thickness of the steel skins is 26 gauge among these models.

The HT 5000 family are aluminum faced polyurethane sandwich doors

The various model numbers listed on the drawings are included in this approval:

1-3/8" overall thickness: 5610, 5612, 5614, 5616, 5670, 5680 (tested),
5667, 5668, 5678, 5687

1-3/4" overall thickness: 5710, 5712, 5714, 5716, 5770, 5780,
5767, 5768, 5778, 5787

2" overall thickness: 5210, 5212, 5214, 5216, 5270, 5280,
5267, 5268, 5278, 5287

3" overall thickness: 5810, 5812, 5814, 5816, 5870, 5880

These are sandwich doors with aluminum skins, filled with polyurethane core. The minimum thickness of the skins is 24 gauge among these models.

The PAN 2000 family of steel doors are Pan doors

These variations are included in this approval:

24 gauge: C2410, R2410, C2411, C2415, C2460, R2460, C2461, R2461,
C2471, R2471, C2472, R2472,
C2480 (tested), R2480, C2481, R2481, C2482, R2482

20 gauge: C2011, C2015

These steel pan doors have a minimum thickness of the skins of 24 gauge.

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 maximum door width approved with this report is 18'-2".

The maximum door height approved with this report is 16' nominal.

The maximum door section height is 24" tall.

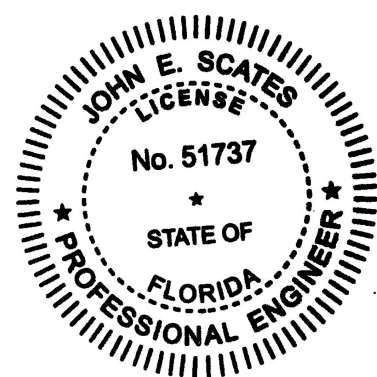
Some products are available with lites/glazing. ("LHVHZ" in drawing name)

Door width may not exceed the tested door width. However, doors narrower than tested width are allowed, but carry the same psf as the tested product and use the same construction per section. Doors taller than the tested height are allowed up to 16' tall, provided that no door section is taller than the tested 24" section height.

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, is determined by Haas Door 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 tracks must be engaged with a lock prior to the wind event.

These doors have been evaluated for use in the Florida High Velocity Hurricane Zone (HVHZ).



Digitally signed by John E Scates

Date: 2025.01.27 09:25:01 -06'00'

John E. Scates, P.E.

Florida PE # 51737

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