

**EVALUATION REPORT OF
FALK PANEL
HFW-40 PANELS**

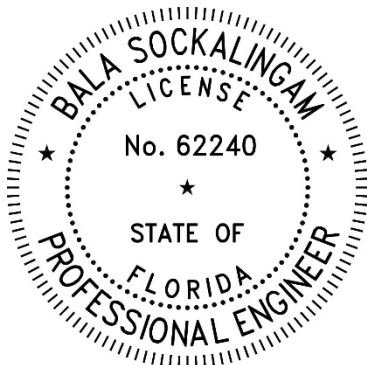
**FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 41818.1-R1
STRUCTURAL COMPONENTS
STRUCTURAL WALL**

**Prepared For:
FALK Panel LLC
1782 Northridge Dr. NW
Walker, MI 49544
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**Prepared By:
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**This report consists of
Evaluation Report (3 Pages including cover)
Installation Details (1 Page)
Load Span Table (1 Page)**

**Report No. C2726-1
Date: 12.21.2023**



This item has been digitally signed and sealed by Bala Sockalingam, PE, on the date indicated.

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**2023.12.21
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Manufacturer:	FALK Panel
Product Name:	HFW-40 panels
Panel Description:	HFW-40 panels are factory-assembled, metal faced, sandwich panels with a chemically bonded continuously foamed-in-place foam plastic core. Maximum 40" coverage. Panel thickness: 2.5", 3, 4", 5" & 6".
Panel Core:	Polyisocyanurate (ISO) foam core designated as Rubitherm® WR 40679 polyol blend and Rubinate® 1850 isocyanate mixed with the catalyst blend, Rubitherm® WR 40544 manufactured by Huntsman International LLC. Blowing agent is a blend of Cyclopentane and Isopentane. Nominal core density is 2.4 pcf with flame spread index of 15 and smoke-developed index of 350 when tested in accordance with ASTM E84-21.
Exterior skin:	Min. 26 ga., 40 ksi galvanized coated steel (ASTM A653), galvalume AZ50 or AZ55 coated steel (ASTM A792) with 'Box' profile and embossed or smooth finish as per FBC 2023 Section 1405.2. Minimum base metal thickness is 0.017".
Interior skin:	Min. 26 ga., 40 ksi galvanized coated steel (ASTM A653), galvalume AZ50 or AZ55 coated steel (ASTM A792) with 'Box' profile and embossed or smooth finish as per FBC 2023 Section 1405.2. Minimum base metal thickness is 0.017".
Support Description:	Min. 14 ga., 50 ksi steel section (Must be designed by others)
Design Pressure:	Inward and outward transverse loads are shown in the load span table. The allowable loads were determined from full scale tests with safety factor of 2.
Panel Fastening:	Panels will be fastened along the panel sidelap at each support with HFW clip using #12-14 self-drilling fasteners with DP3 drill tip. Two fasteners per clip for 2.5" panels and three fasteners per clip for 3" and thicker panels. Fastener shall be of sufficient length to penetrate through the support a minimum of 3/4".
Panel Clips:	16 ga. (0.058" thick), 3.15" long, 0.86" wide with 0.28" lip stamped clip
Test Standards:	Wall assemblies were tested in accordance with ASTM E1592-05(2017) 'Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure'. The mechanical properties of the panels were tested in accordance with ASTM E72-15 "Standard Test Methods of Conducting Strength Tests

of Panels for Building Construction” as outlined in Acceptance Criteria for Sandwich Panels AC04. The test procedure in the above test standard complies with the testing requirements of ASTM E330-14 “Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference”.

Test Equivalency: The test procedures in ASTM E84-21 comply with test procedures prescribed in ASTM E84-18b.

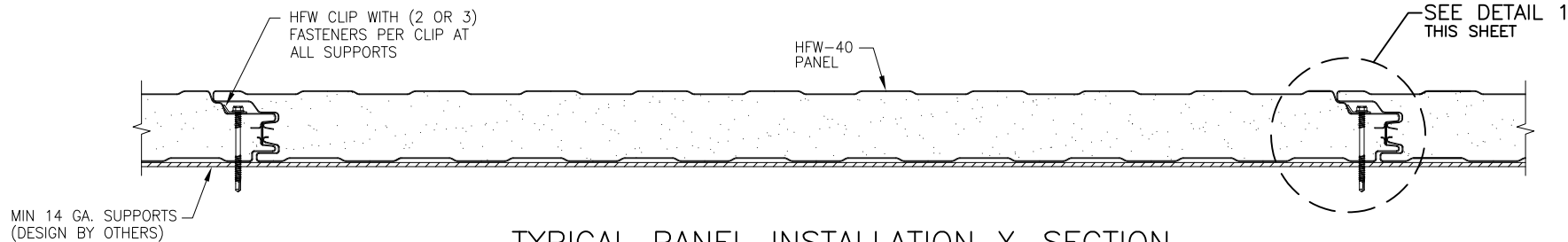
Code Compliance: The product described herein has demonstrated compliance with FBC 2023 Section 1404.5 and 2603.3.

Product Limitations: Design wind loads shall be determined for each project in accordance with FBC 2023 Section 1609 or ASCE 7-22 using allowable stress design. The design pressure for reduced panel spans may be computed using rational analysis prepared by a Florida Professional Engineer or FALK load span table. This evaluation report is not applicable in High Velocity Hurricane Zone.

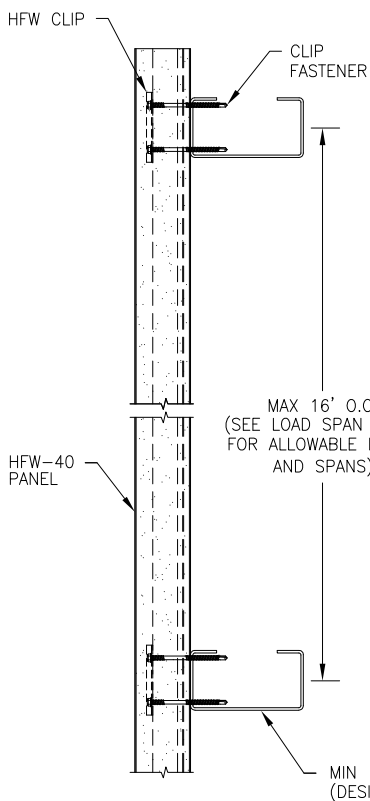
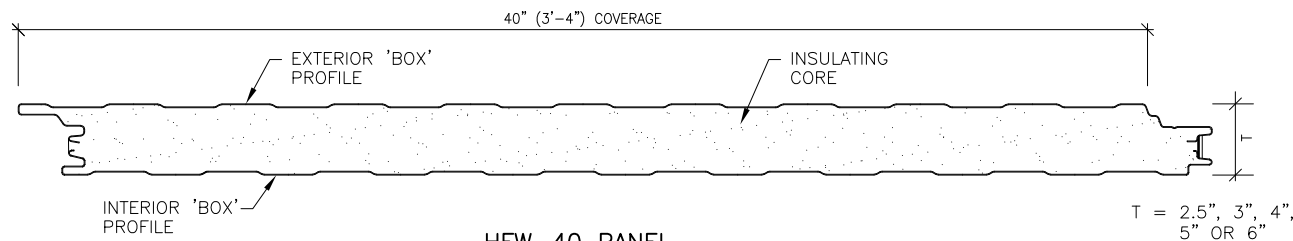
Supporting Documents: ASTM E1592 Test Report
ENCON Technology Inc.
C2523-1, Reporting Date 4/14/2022
C2641-1, Reporting Date 5/5/2023

ASTM E72 Test Reports
ENCON Technology Inc.
C2527-1, Reporting Date 3/26/2022
C2527-2, Reporting Date 3/26/2022
C2527-3, Reporting Date 4/18/2022
C2622-1, Reporting Date 4/18/2023
C2622-2, Reporting Date 4/18/2023

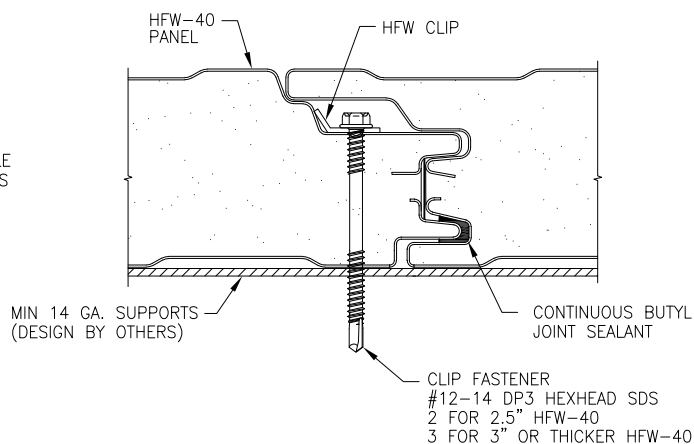
ASTM E84 Test Report
QAI Laboratories Inc.
TUL 0040, Reporting Date 8/25/2022



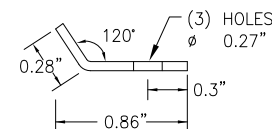
TYPICAL PANEL INSTALLATION X-SECTION



SECTION VIEW



DETAIL 1



16 GA. STANDARD CLIP 3.15" LONG

GENERAL NOTES:

1. THIS STRUCTURAL WALL PANEL SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH FLORIDA BUILDING CODE (FBC). THE DESIGN PRESSURES AS DETERMINED FROM SECTION 1609 AND ASCE 7-22 MUST BE MULTIPLIED BY 0.6.
2. PANELS ARE MAX 40" WIDE, CONSIST OF MIN. 26 GA. (t = 0.017" MIN.) EXTERIOR OR INTERIOR STEEL SKINS (F_y = MIN. 33 KSI) AND ARE SANDWICHED WITH FOAMED-IN-PLACE NON-CFC 2.4 LB/CU. FT. DENSITY POLYISOCYANURATE.
3. PANELS SHALL BE INSTALLED OVER WALL STRUCTURE AS SPECIFIED ON THIS DRAWING.
4. HORIZONTAL SEAMS MAY BE PRESENT AT CENTERLINE OF SUPPORTS PROVIDING THE SEAMS ARE FLASHED & PROPERLY SEALED PER FALK SPECIFICATIONS AND EACH PANEL END IS SECURED PER THIS DRAWING.
5. REQUIRED DESIGN WIND LOADS SHALL BE DETERMINED FOR EACH PROJECT. THIS PANEL SYSTEM MAY NOT BE INSTALLED WHEN THE REQUIRED DESIGN WIND LOADS ARE GREATER THAN THE ALLOWABLE WIND LOADS SPECIFIED ON LOAD SPAN TABLE.
6. ALL CLIPS AND SCREWS SHALL BE CORROSION RESISTANT.
7. THE SUPPORTING STRUCTURE, OVER WHICH THE PANELS ARE TO BE INSTALLED, MUST BE MINIMUM 14 GAGE (MIN. 0.071") STEEL WITH MIN. F_y = 50 KSI.
8. THESE WALL PANELS SHALL NOT BE CONSIDERED TO OR BE USED FOR TRANSFER OF DIAPHRAGM ACTION OF WALL TO SUPPORTING STRUCTURE.

DRAWN BY: B.S.	CHECKED BY: M.M.
PLOT:	DATE: 12/16/22
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE HFW-40 PANEL	MANUFACTURER FALK PANEL, LLC 1782 NORTHDRIVE DR. NW WALKER, MI 49544 616-541-4500
CONSULTANTS BALA SOCKALINGAM, PH.D., P.E. 1216 N LANSING AVE, SUITE C TULSA, OK 74106 PHONE: 918-492-5992 FAX: 866-366-1543	REV. 2726-1
PAGE NO. 1	OF 1

FALK Panel
HFW-40 Panel
Allowable Inward & Outward Loads

Panel Thickness	Span Condition	Allowable Inward and Outward Loads (psf)												
		Panel Span (ft)												
		4	5	6	7	8	9	10	11	12	13	14	15	16
2.5" thick	Two Spans	46.3	36.5	30.1	25.6	22.3	19.7	17.8	16.2	14.8	13.6	12.6	11.7	11.0
	3 or More	47.5	37.9	31.7	27.2	23.9	21.4	19.4	17.7	16.4	15.1	14.0	13.1	12.2
3" thick	Two Spans	48.7	38.4	31.7	27.0	23.5	20.8	18.7	17.1	15.7	14.4	13.3	12.4	11.6
	3 or More	49.7	39.7	33.2	28.5	25.1	22.5	20.4	18.6	17.2	15.9	14.7	13.7	12.9
4" thick	Two Spans	53.2	42.2	34.9	29.7	25.9	23.0	20.7	18.9	17.4	15.9	14.7	13.7	12.8
	3 or More	54.0	43.3	36.2	31.2	27.4	24.6	22.3	20.5	18.9	17.4	16.2	15.1	14.1
5" thick	Two Spans	57.7	45.9	38.0	32.5	28.3	25.2	22.7	20.7	19.1	17.5	16.1	15.0	14.0
	3 or More	58.3	46.8	39.2	33.8	29.8	26.7	24.3	22.3	20.6	19.0	17.6	16.4	15.4
6" thick	Two Spans	62.0	50.2	42.3	36.7	32.5	29.3	26.7	24.7	23.0	21.6	20.4	19.4	18.5
	3 or More	62.6	51.0	43.4	38.0	34.0	30.9	28.4	26.4	24.7	23.4	22.2	21.1	20.2

Notes

1. Based on HFW-40 panel with 26 ga. Box exterior & interior faces (min Fy = 33 ksi).
2. For connection with clips to min. 14 ga. steel, HFW standard clips are fastened with (2) 12-14 SDS DP 3 for 2.5" panels and (3) 12-14 SDS DP 3 for 3" and thicker panels. For 12 ga. or thicker steel, #12-24 SDS DP 5 may be used.
In lieu of self-drilling screws, self-tapping screws may be used.
3. Allowable inward and outward load is the lowest value of panel bending strength, shear strength, deflection limit and connection strength.
4. Allowable loads based on panel stress and deflection design criteria are derived from ASTM E72 structural testing and calculated with factor of safety of 2.5 for bending stress, 3.0 for shear stresses and deflection limitation of L/180.
5. The panel outward or connection strength was determined from ASTM E1592 testing and the allowable loads are calculated with factor of safety of 2.
6. Panels must be installed as per Evaluation Report FL 41818.1 and FALK Panel's current installation procedure.
7. The structural capacity of the supports are not considered and must be examined independently by others.
8. Multiple equal spans are based on 2 spans or three or more spans conditions.