

**EVALUATION REPORT OF
KINGSPAN DESIGNWALL 2000R PANELS**

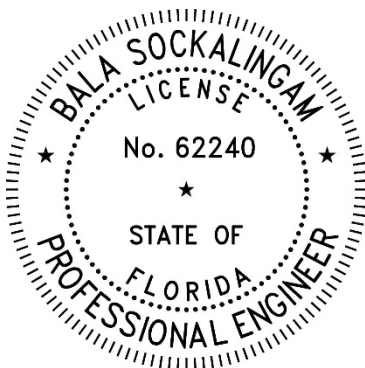
**FLORIDA BUILDING CODE 8TH EDITION (2023)
FLORIDA PRODUCT APPROVAL
FL 31365.1-R2
STRUCTURAL COMPONENTS
STRUCTURAL WALL**

Prepared For:
Kingspan Insulated Panels, Inc.
726 Summerhill Drive
Deland, FL 32724
Telephone: (386) 626-6789

Prepared By:
Bala Sockalingam, Ph.D., P.E.
Florida Professional Engineer #62240
1216 N Lansing Ave., Suite C
Tulsa, OK 74106
Telephone: (918) 492-5992

This report consists of
Evaluation Report (3 Pages including cover)
Installation Details (3 Pages)
Load Span Table (1 Page)

Report No. C2838-1
Date: 10.20.2024



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

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verified on any electronic copies.

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Manufacturer:	Kingspan Insulated Panels, Inc.
Product Name:	DesignWall (DW) 2000R Panels
Panel Description:	DesignWall 2000R panels are factory-assembled, metal faced, sandwich panels with a chemically bonded laminated foam plastic core. Coverage: 12", 16", 20" or 24" Panel thickness: 2.5", 3" & 4".
Panel Core:	Quadcore B foam core. Nominal core density is 2.2 pcf with flame spread index ≤ 25 and smoke-developed index ≤ 90 when tested in accordance with ASTM E84-20.
Exterior skin:	Min. 22 ga., 33 ksi galvanized coated steel (ASTM A653) or galvalume coated steel (ASTM A792) with embossed, smooth or coated finish as per FBC 2023 Section 1405.2. The exterior skin consists of 7/8" high asymmetrical ribs spaced at 4" o.c. Minimum base metal thickness is 0.0285".
Interior skin:	Min. 24 ga., 33 ksi galvanized coated steel (ASTM A653) or galvalume coated steel (ASTM A792) with embossed, smooth or coated finish as per FBC 2023 Section 1405.2. Minimum base metal thickness is 0.023".
Support Description:	Min. 16 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 for panel strength, connection and deflection limit of L/180 were developed from test data.
Panel Attachment:	Stainless steel clip (2.5" long, 0.68" wide, 14 ga.) fastened to steel supports with 1/4"-14 DP3 or 1/4"-20 DP5 hex head self-drilling screws. Two screws per clip at all supports. Clip fasteners must be designed by others for pullout load from support. Corrosion resistant as per FBC 2023 Section 1405.17.
Test Standards:	Wall assembly tested in accordance with TAS 202-94 'Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading' and 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.
Test Equivalency:	Quadcore B foam core used in Kingspan panels was tested in accordance with ASTM E84-17 as reported in FM Approvals Project ID

3058165 and with ASTM E84-20 as reported in Element Materials Technology Test Report 20-002-210.

ASTM E84-17 & E84-20 procedures utilized in these test reports comply with test procedures prescribed in ASTM E84-18.

The test procedure in ASTM E72-15 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”.

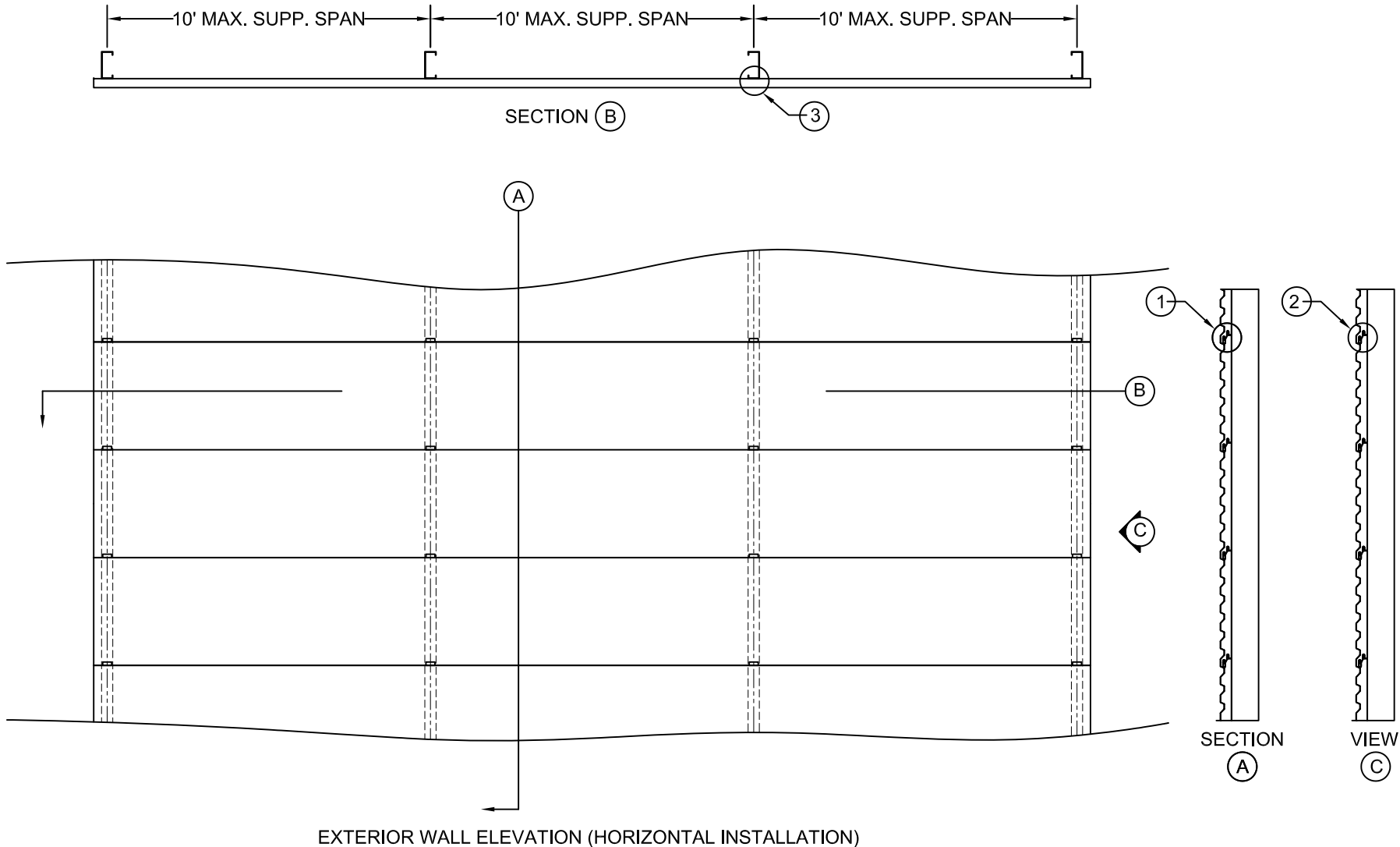
Code Compliance: The product described herein has demonstrated compliance with FBC 2023 Section 1404.5 and 2603.3.

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 maximum support spacing listed herein shall not be exceeded. The design pressure for reduced support spacing may be computed using rational analysis prepared by a Florida Professional Engineer or Kingspan load span table. This evaluation report is not applicable in High Velocity Hurricane Zone.

Supporting Documents: TAS 202 Test Report
Farabaugh Engineering and Testing Inc.
T298-15, Reporting Date 11/19/2015

ASTM E84 Test Report
FM Approvals, Norwood, MA
Project ID 3058165, Reporting Date 1/12/2018
Element Materials Technology Canada
20-002-210, Reporting Date 4/29/2020

ASTM E72 Test Report
Intertek Testing Services NA Ltd.
P0282.01-119-16-r2, Reporting Date 10/13/2022, Revised Date
10/11/2023



CODE COMPLIANCE
This structural wall panel has been designed in accordance with 2023 Florida Building Code (FBC). The design pressures as determined from Section 1609 and ASCE 7-22 must be multiplied by 0.6

Installation
Each panel shall be fastened at one edge with two 1/4-14" self drilling steel fasteners and one load bearing clip as per details 1, 2, 3 of these drawings. Fasteners must be coated for corrosion resistance.

- SUPPORTS & DESIGN LOAD**
- 1. The support assembly must be designed and built by others
 - 2. The support assembly will consist of horizontal or vertical studs for panels installed vertically or horizontally respectively.
 - 3. The material of the studs shall be steel with a minimum Y.S. of 55 ksi
 - 4. Thickness of the studs and spacing as dictated by the design loads in the span vs. load chart below.
 - 5. Maximum support spacing and design load shall not be exceeded.
 - 6. Support thickness in span vs. load chart shall be considered the minimum allowed.

- LIMITATIONS OF USE**
- 1. Product approval is limited to panels and load bearing clips
 - 2. Panels must be installed on structural framing complying with the 2023 Florida Building Code (FBC).
 - 3. Panels shall not carry axial load, and are not intended/designed to act as a diaphragm.
 - 4. The engineer of record or architect shall verify the supporting structure is capable of resisting the superimposed loads from the wall panel system, and that the supporting structure is capable of providing lateral stability to carry the wind loads to the building foundation

- GENERAL NOTES ON DESIGNWALL (DW) 2000R PANELS**
- 1. Kingspan's DW 2000R panels are factory assembled Metal Insulated Panels (MIP), consisting of steel facings with a plastic foam core in between.
 - 2. Panels are anchored to supports on one edge using bearing clips and screws and interlocking with the adjacent panel on the opposite.
 - 3. Panels can be installed in vertical or horizontal installation.
 - 4. Panel Width: 12 to 24".
 - 5. Panel Thickness: 2.5", 3.0", 4.0"
 - 6. Panel Length: 1' to 30'

DESIGNWALL 2000R INSULATED METAL WALL PANELS.

DESIGN OVERVIEW

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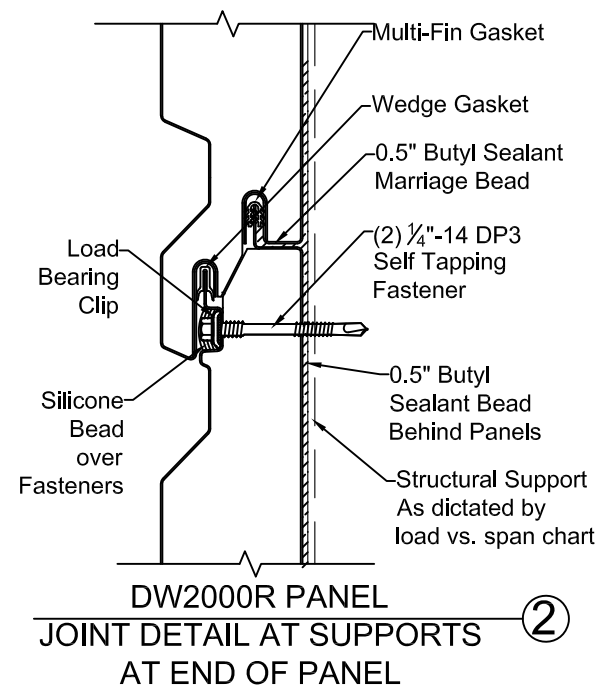
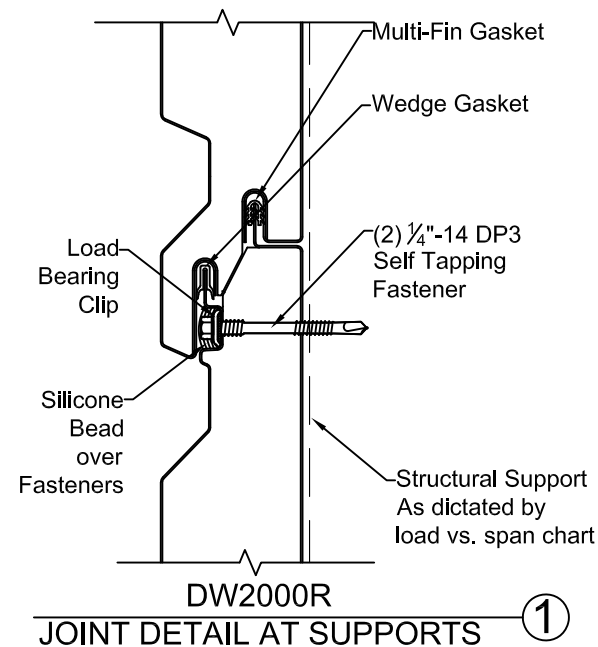
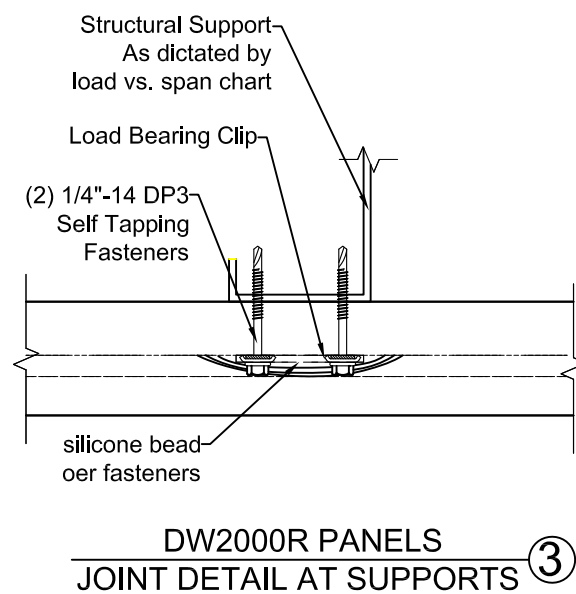
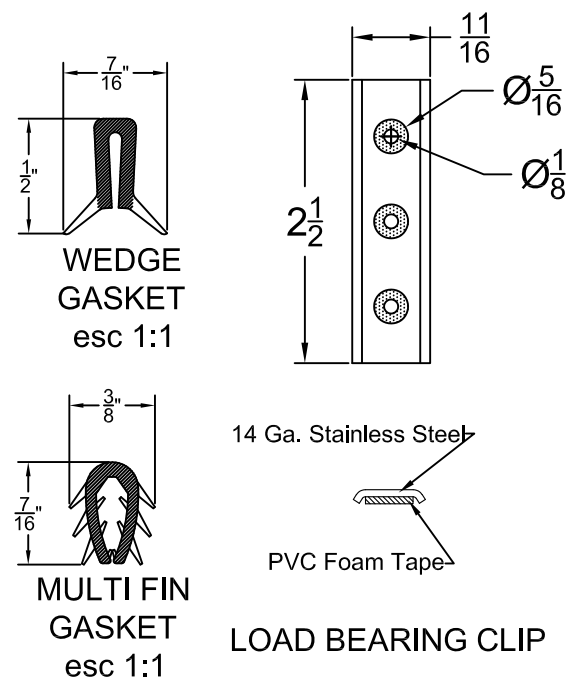
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Kingspan Insulated Panels, Inc.
726 Summerhill Dr. Deland, FL 32724
Phone: (386) 626 6789

Kingspan Benchmark
720 Marion Rd, Columbus, OH 43207
Phone: (614) 444-0110
www.kingspan.com/us/en

Consultant:

Bala Sockalingam, PhD., P.E.
1216 N Lansing Ave., Suite C
Tulsa, OK 74106
Phone: 918 492 5992



DESIGNWALL 2000R INSULATED
METAL WALL PANELS.

DETAILS

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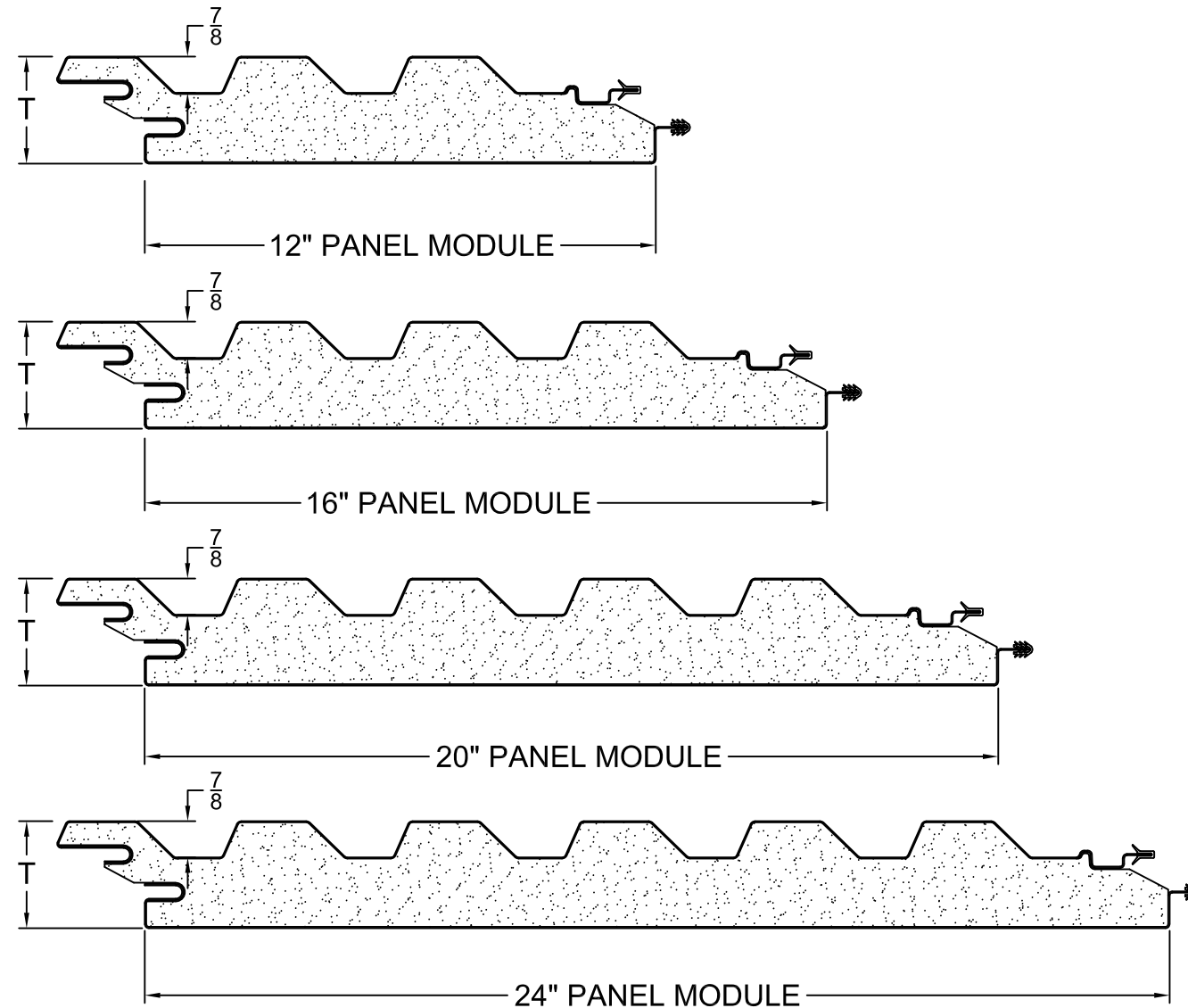


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DESIGNWALL 2000R INSULATED METAL PANEL

1. Exterior Facing: 22 Ga. Steel with a minimum 55 ksi yield strength, with G90 galvanized or AZ50 Galvalume ®/Zincalume ® coating protection in accordance with ASTM A653 or ASTM A792 respectively.
2. Interior Facing: 24 Ga. Steel with a minimum 55 ksi yield strength, with G90 galvanized or AZ50 Galvalume ®/Zincalume ® coating protection in accordance with ASTM A653 or ASTM A792 respectively.
3. Core: Quadcore-B foam. T= 2.5", 3" or 4"

DESIGNWALL 2000R INSULATED
METAL WALL PANELS.

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KingSpan DW2000R Wall Panel
(Max. 24" wide)
Allowable Inward and Outward Loads (psf)

Span Condition	Panel Span (Ft)	Allowable Inward and Outward Loads (psf)					
		Panel Core Thickness (22 ga. Exterior - 24 ga. Interior)					
		2.5"		3"		4"	
		Inward	Outward	Inward	Outward	Inward	Outward
Single Span	3	238.9	80.0	259.4	80.0	279.4	80.0
	3.5	197.1	80.0	217.5	80.0	238.8	80.0
	4	167.3	80.0	187.4	80.0	209.8	80.0
	4.5	144.7	72.8	162.3	80.0	184.3	80.0
	5	126.0	65.5	138.7	72.9	157.6	80.0
	5.5	109.7	59.6	121.1	66.3	137.6	79.6
	6	97.2	54.6	107.3	60.7	122.1	73.0
	7	79.0	46.8	87.5	52.1	99.6	62.6
	8	65.8	41.0	73.8	45.6	84.0	54.7
	9	54.7	36.4	63.8	40.5	72.7	48.7
	10	46.1	32.8	56.2	36.4	64.1	43.8
Two Spans	3	168.9	80.0	174.1	80.0	177.8	80.0
	3.5	131.8	80.0	136.9	80.0	140.8	80.0
	4	106.7	75.9	111.7	79.8	115.8	80.0
	4.5	88.8	67.5	93.6	71.1	97.8	77.9
	5	75.4	60.8	80.0	64.0	84.3	70.3
	5.5	65.1	55.2	69.5	58.2	73.8	64.0
	6	56.9	50.6	61.0	53.3	65.4	58.7
	7	44.8	43.2	48.5	45.5	52.7	50.2
	8	36.3	36.3	39.7	39.7	43.7	43.7
	9	30.2	30.2	33.2	33.2	37.0	37.0
	10	25.6	25.6	28.3	28.3	31.8	31.8
Three or More Spans	3	194.7	80.0	199.5	80.0	203.0	80.0
	3.5	150.0	80.0	154.6	80.0	158.3	80.0
	4	120.3	80.0	124.8	80.0	128.5	80.0
	4.5	99.4	74.0	103.6	77.4	107.4	80.0
	5	84.0	66.6	88.0	69.6	91.8	75.7
	5.5	72.2	60.5	76.1	63.3	79.8	68.8
	6	63.0	55.4	66.7	58.0	70.4	63.1
	7	49.6	47.5	52.9	49.6	56.4	54.0
	8	40.4	40.4	43.4	43.4	46.6	46.6
	9	33.7	33.7	36.4	36.4	39.5	39.5
	10	28.6	28.6	31.1	31.1	34.0	34.0

Notes:

1. Allowable positive load is the lowest value of panel bending strength, shear strength & deflection limit.
2. Allowable suction load is the lowest value of panel bending strength, shear strength, deflection limit and connection strength.
3. Loads based on panel stress, deflection and connection design criteria are derived from ASTM E-72 testing.
4. Allowable loads are calculated with a factor of safety of 2.5 for bending, 3.0 for shear and 2.0 for connection.
5. Panels will be fastened with 14 ga. clip and (2) 1/4"-20 SDS in minimum 3/16" steel. For supports thinner than 3/16" steel, the clip fasteners (1/4"-14 or 1/4"-20 SDS) must be designed by others for pullout load from support.
6. The structural capacity of the girts are not considered and must be examined independently.
7. Panels must be installed as per Evaluation Report FL 31365.1 and Kingspan current installation procedure.