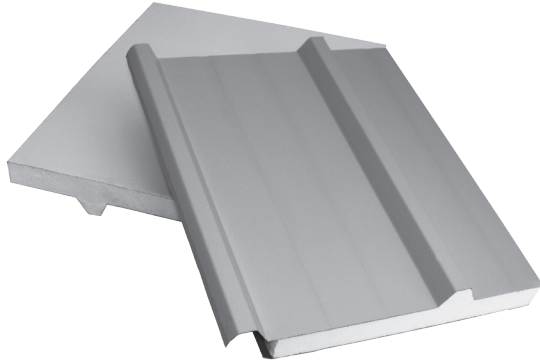




# **MANUAL INSTALACIÓN INSULFOIL TECHO**

# CHARACTERISTICS

The Insulfoil belongs to the Insulpanel family; it is a panel with the components of the Insulpanel classic but substitutes one of the sheets metal (interior or exterior ) for a polypropylene-based covering, reinforced with a fiberglass mesh; that is, a foil-type covering.



*Insulfoil Roof*

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## FEATURES INSULFOIL

<b>WMP-30</b> <i>POLYPROPYLENE / SCRIM / KRAFT</i> <i>Meets ASTM C1136, Type I, II, III, IV</i>			
FACING COMPOSITION	DESCRIPTION	VALUES (ENGLISH)	VALUES (METRIC)
White Film	Metallized Polypropylene	0.0015 in	38.1 micron
Adhesive	Flame Resistant		
Reinforcing	Tri-directional Fiberglass/Polyester	5 / in (MD) 5 / in (XD)	20 / 100 mm (MD) 20 / 100 mm (XD)
Kraft	Natural	30 lb / 3000 ft <sup>2</sup>	49 g / m <sup>2</sup>
PHYSICAL PROPERTIES	TEST METHOD	VALUES (ENGLISH)	VALUES (METRIC)
Basis Weight	Scale	26 lb / 1000 ft <sup>2</sup>	127 g / m <sup>2</sup>
Permeance (WVTR)	ASTM E96 Procedure A	0.02 perm (grains/h-ft <sup>2</sup> in Hg)	1.15 ng / N-s
Bursting Strength	ASTM D774	70 psi	4.9 kg / cm <sup>2</sup>
Puncture Resistance	ASTM C1136	105 beach units	3.1 Joules
Tensile Strength	ASTM C1136	55 lb/in width (MD) 40 lb/in width (XD)	9.6 kN / m (MD) 7.0 kN / m (XD)
Caliper / Thickness	Micrometer	0.010 in	254 micron
Accelerated Aging	30 Days @ 95% RH, 120°F (49°C)	No Corrosion No Delamination	No Corrosion No Delamination
	ASTM D1790 -40°F (-40°C)	Remains Flexible No Delamination	Remains Flexible No Delamination
High Temperature Resistance	4 hours @240°F (116°C)	Remains Flexible No Delamination	Remains Flexible No Delamination
Water Immersion	24 hours @ 73°F (23°C)	No Delamination	No Delamination
Mold Resistance	ASTM C665 / C1338	No Growth	No Growth
Dimensional Stability	ASTM D1204	0.25%	0.25%
Light Reflectance	ASTM C523	85%	85%
FIRE TEST			
		ASTM E84 / UL 723	CAN ULC-S102M
		Film Side      Kraft Side	Film Side      Kraft Side
Flame Spread		5                      10	5                      20
Smoke Developed		5                      20	5                      25

Insulfoil is available in two versions: Insulfoil Roof and Insulfoil Wall.

## A) Dimensions

Unlike Insulpanel, Insulfoil is available in pieces 30ft in length (for panels with a thickness of 4" or less), up to 36 ft in length (for panels with a thickness of 4" or more). The effective width for each panel is 40 in for roofs and 46 in for walls.

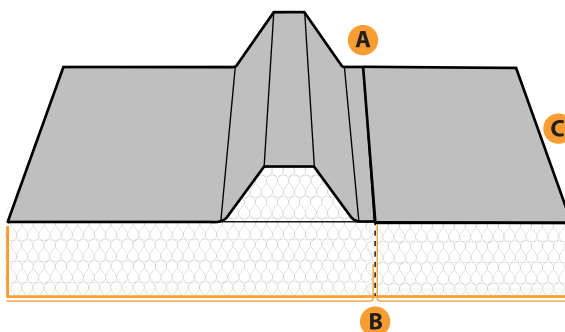
## B) Joints

On its exterior side for walls or roofs, the Insulfoil's joints are similar to those in the Insulpanel; and on its interior side, it has an excess of foil, which folds to the inside of the joint between each panel.

### Longitudinal overlap

A	Joint details
B	Insulfoil
C	Sheet metal

On the transverse overlap, the joint is applied on-site in the same way as the Insulpanel, with the added convenience of cutting the foil film instead of a sheet metal



## C) Maximum loads, weight and thermal properties

### 1. MAXIMUM LOAD CHARTS FOR THE INSULFOIL ROOF

Maximum loads table for the Insulfoil Roof																							
Simple support (lb/ft <sup>2</sup> )												Continued support (lb/ft <sup>2</sup> )											
Thickness (in)												Thickness (in)											
SPAN (ft)	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	SPAN (ft)	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"
3.00	30	43	53	62	73	83	94	105	115	126	137	4.00	28	42	56	70	84	98	112	127	141	155	169
4.00	24	30	36	43	51	58	65	73	80	88	95	5.00	22	33	42	49	58	66	74	83	91	100	108
5.00	16	19	23	28	32	37	42	46	51	56	61	6.50	15	19	23	28	32	37	42	46	51	56	61
6.00	-	0	15	17	20	23	26	29	32	35	38	8.00	-	12	15	18	21	24	27	30	33	36	39
6.50	-	0	13	16	18	21	24	26	29	32	34	10.00	-	0	0	12	14	16	19	21	23	25	27

#### Calculation conditions:

- 1.- Steel's yield stress = 2600 kg/cm<sup>2</sup> (37ksi).
- 2.- Maximum allowed deflection of L/240.
- 3.- Design based on the allowed stress criteria according to "Design of Foam Filled Structures" by John A. Hartsock and on the AISI Cold-Formed Steel Specification 1996.
- 4.- For wind loads, the stress was increased by 1/3 above the values of the allowed stress, as long as this load is not lower than the one required by dead and live loads, or by maximum deflections.
- 5.- It is considered that the section's total effectiveness is reduced (effective S).

## 2. MAXIMUM LOAD CHARTS FOR THE INSULFOIL WALL

Maximum loads table for the Insulfoil Wall																							
Simple support (lb/ft²)												Continued support (lb/ft²)											
Thickness (in)												Thickness (in)											
SPAN (ft)	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	SPAN (ft)	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"
3.00	18	26	35	44	53	62	70	79	88	97	106	4.00	31	47	63	78	94	110	125	141	156	172	188
4.00	12	18	25	31	37	43	49	55	61	67	73	5.00	22	33	44	54	65	76	87	98	109	119	130
5.00	8	12	16	19	24	27	31	35	39	43	47	6.50	14	21	28	35	42	49	56	63	70	76	83
6.00	-	-	11	14	16	19	22	24	27	30	33	8.00	-	15	19	24	29	34	39	43	48	53	58
6.50	-	-	9	11	13	15	18	20	22	24	26	10.00	-	12	16	20	24	27	31	35	39	43	47

### Calculation conditions:

- 1.- Steel's yield stress = 2600 kg/cm<sup>2</sup> (37ksi).
- 2.- Maximum allowed deflection of L/180.
- 3.- Design based on the allowed stress criteria according to "Design of Foam Filled Structures" by John A. Hartsock and on the AISI Cold-Formed Steel Specification 1996.
- 4.- For wind loads, the stress was increased by 1/3 above the values of the allowed stress, as long as this load is not lower than the one required by dead and live loads, or by maximum deflections.
- 5.- The values of the maximum loads are determined by the compression stress on the face.

## 3. INSULFOIL'S WEIGHT

Insulfoil Roof		Insulfoil Wall	
Thickness (in)	Weight (lb/ft <sup>2</sup> )	Thickness (in)	Weight (lb/ft <sup>2</sup> )
2"	5.63	2"	4.93
3"	6.04	3"	5.34
4"	6.45	4"	5.75
5"	6.85	5"	6.15
6"	7.26	6"	6.56
7"	7.66	7"	6.96
8"	8.07	8"	7.37
9"	8.47	9"	7.78
10"	8.88	10"	8.18
11"	9.29	11"	8.59
12"	9.70	12"	9.00

### *Thermal Properties Insulfoil Roof and Wall*

<i>Thickness in (cm)</i>	<i>R- Value (ft<sup>2</sup>-°F-h/Btu)</i>	<i>U - Value (Btu/h-ft<sup>2</sup>-°F)</i>
2" (5.08)	7.69	0.130
3" (7.62)	11.54	0.087
4" (10.16)	15.38	0.065
5" (12.70)	19.23	0.052
6" (15.24)	23.08	0.043
7" (17.78)	26.92	0.037
8" (20.32)	30.77	0.033
9" (22.86)	34.62	0.029
10" (25.40)	38.46	0.026
11" (27.94)	42.31	0.024
12" (30.48)	46.15	0.022

## METAL PANEL S. DE R.L. DE C.V.

LE OFRECE UN EXCELENTE SERVICIO PARA APOYARLO DESDE EL MOMENTO DEL ANTEPROYECTO Y HASTA LA INSTALACIÓN EN CAMPO, YA QUE CONTAMOS CON LA INFRAESTRUCTURA Y PERSONAL ALTAMENTE CAPACITADO, GARANTIZADO CON ESTO SU COMPLETA SATISFACCIÓN EN LA ADQUISICIÓN DE NUESTROS SISTEMAS CONSTRUCTIVOS.



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