



INSULATED  
**METAL PANELS**

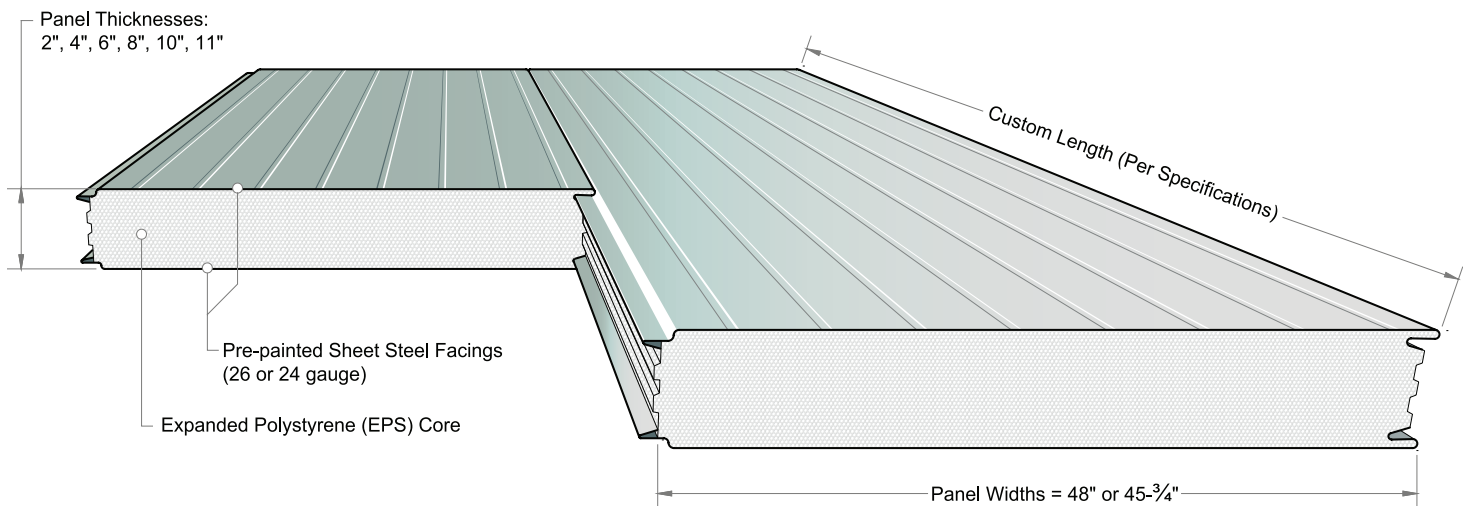
BUILDING ENVELOPES AND COLD-STORAGE UNITS



airfoam

# Insulated Metal Panels

Insulated Metal Panels offer high performance building solutions that lower emissions, reduce lifetime costs and enhance indoor environmental quality. Energy-efficient and airtight insulated metal panels help create advanced building envelopes and cold-storage units. Environmentally responsible, continuous insulation cores are sandwiched between pre-painted steel facings. **Build attractive, sustainable, and budget-friendly facilities in record times** by combining insulation, finishes, air, vapour & water-resistive barriers.



Insulated Metal Panels are highly **versatile, available with various finished looks, and fast to install** onto structural framing. Custom-manufactured to the specified lengths and thicknesses, the lightweight modular panels arrive at the jobsite ready to place. Unique interlocks help ensure continuous insulation and minimal air leakage with sealant applied between panels at the jobsite.

Insulated Metal Panels are produced by **Airfoam Industries Ltd.**,  
an **ISO 9001:2015 and 14001:2015** Certified Company.

**ISO: 9001**  
**ISO: 14001**  
**Certified Company**

# Applications

Insulated Metal Panels are an excellent fit in the following areas:

- Warehouse Curtain and Partition Walls
- Cooler / Freezer Rooms
- Commercial Buildings
- Refrigerated, Climate Controlled Buildings
- Cold-Storage Facilities
- Industrial Buildings
- Agricultural Buildings
- Etc.



Hatchery in Armstrong, British Columbia



Metal workshop in Northern Alberta



Blueberry processing plant in the BC Coastal area

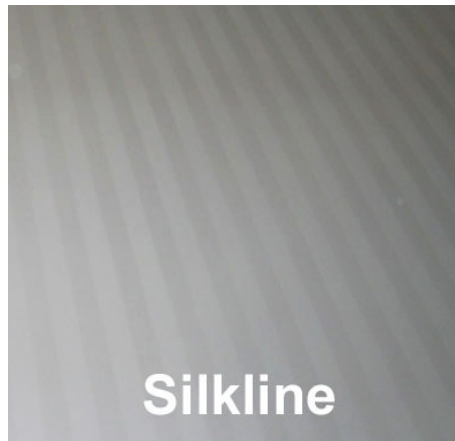


Installation of a vegetable freezer in Washington state

# Profiles and Colours

Usually the panel sides facing the interior are made with white smooth steel that's CFIA (Canadian Food Inspection Agency) approved and meets USDA requirements under part 16 (Sanitation).

For the other “exterior” side, you can choose between the same smooth steel (e.g. for coolers, freezers, partition walls) or standard, silkline or mesa profiles. Custom colors (light, not dark) are available for larger projects.



Standard (L), silkline (C), and mesa (R) profile options for the exterior sides of the panels

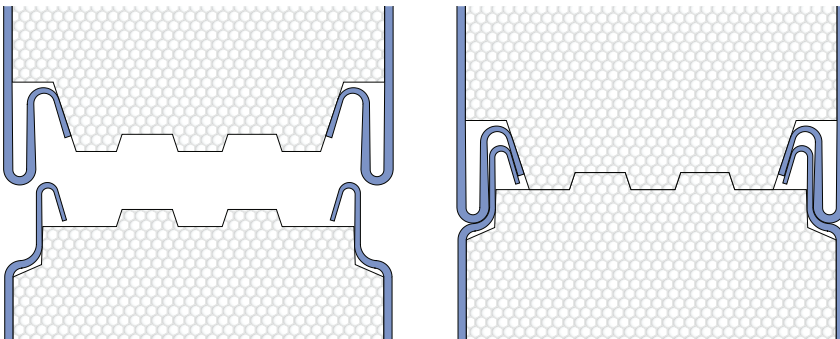
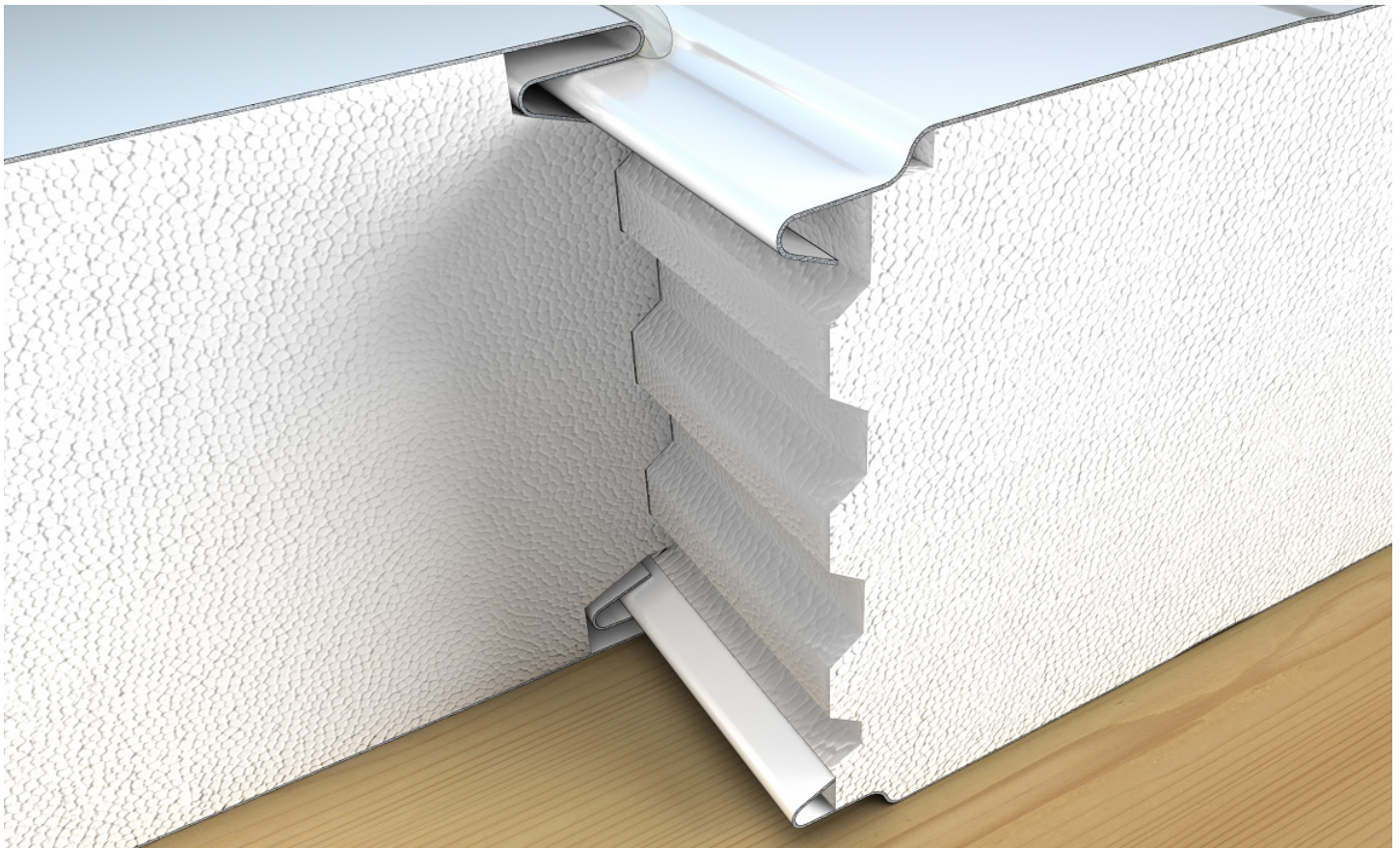
## Wash-Down Finish

Fiber Reinforced Plastic (FRP) or similar protective boards can be applied after installation of the panels to the building providing additional protection for applications with special wash down environments such as food processing areas. The boards can be applied to the whole length of the panels or select areas.

# Panel Interlocks

To help keep air leakage & thermal bridging minimal, our unique insulation finger joints and roll formed steel edges help to ensure:

- airtight connections with continuous sealant applied between the steel facings, usually on both the interior and exterior sides and
- EPS overlaps between the panels. When only a butt end is used in competing products, small gaps can develop over time which result in thermal bridging and shadow lines.



**Top Graphic:** close-up of the panel interlock, showing our unique insulation finger joints and roll formed steel edges

**Left Graphics:** Panel interlock schematics: unassembled (L) and assembled (R)

# Doors

We can provide many types of doors for coolers, freezers, and production area applications, standard man doors, pallet doors and sliding doors. Options are available for stainless steel trim and aluminum kick plates. Freezer doors are available with 120 volt CSA approved heater wire, temperature gauge and ventilator port.



Standard man doors, pallet doors, and sliding doors are among the types of doors that can be produced

## Code Compliance

Insulated Metal Panels have been extensively tested to ensure they have reliable, quality performance and meet building codes. The following tests have been performed on Insulated Metal Panels:

**Room Fire Growth** CAN/ULC-S138 Certificate of Compliance (ULC Certificate Number 20190320-R38495)

**Air Permeance & Water Penetration** ASTM E283 & E331 (Intertek Report Number 100498116COQ-001B)

**Surface Burning Characteristics for Panels with Metal Facings** CAN/ULC-S102

Without joints: Intertek Report Number 100095979COQ-004

With typ. joints incl. exposed sealant: Intertek Report Number 104655432COQ-002-R1

**Intertek Listed & Inspected** Spec ID: 49083

**Canadian Food Inspection Agency (CFIA)** Approval with and without FRP

**Uniform and Concentrated Loads for Floor Panels** (Intertek Report Number 101220551COQ-001)

**Foam Cores** CAN/ULC-S701.1 & ASTM C578 (Intertek CCRR-0379)

## Air Spaces and Sheet Metal

Insulated Metal Panels do not contain an air space.

The steel facings of the Insulated Metal Panels are either 26 Gauge [0.55mm] or 24 Gauge [0.70mm].

The steel's melting point is reported by the vendor to be 1,530°C.

# Technical Information

The panels are 2-11" thick [50-280mm], 48" [1219mm] or 45-¾" [1162mm] wide and custom-cut to lengths per approved designs. The panels' facings are pre-painted, AZ50 aluminum-zinc coated or G90 galvanized steel in 26 or 24 gauge. They are bonded to the closed cell, expanded polystyrene (EPS) insulation core with a specially formulated adhesive.

Panel Thickness	mm	50	102	152	203	254	280
	Inch	2	4	6	8	10	11
<b>Thermal Resistance</b> <sup>1,2</sup> typical per ASTM C518 or C177							
R-value ft <sup>2</sup> ·hr·°F/BTU	@ 75° F	8.08	15.4	23	31	39	42
	<b>@ 40° F</b>	<b>8.8</b>	<b>16.7</b>	<b>25</b>	<b>33</b>	<b>42</b>	<b>46</b>
	@ 25° F	9.2	17.4	26	35	44	48
R <sub>SI</sub> m <sup>2</sup> ·°C/W	@ 24° C	1.4	2.71	4.07	5.42	6.78	7.46
	<b>@ 4.4° C</b>	<b>1.55</b>	<b>2.94</b>	<b>4.41</b>	<b>5.88</b>	<b>7.34</b>	<b>8.08</b>
	@ -4° C	1.62	3.06	4.6	6.13	7.66	8.43
<b>Air Permeance</b> tested	ASTM E283	0.002 l/(s·m <sup>2</sup> ) at 300 Pa 0.0004 CFM/ft <sup>2</sup> at 6.26 psf					
<b>Water Penetration</b> tested	ASTM E331	Passed at 137 Pa					
<b>Fire Growth</b> of Insulated Building Panels <b>Surface Burning Characteristics</b> for Panels with Facings	CAN/ULC-S138	Passed in Full-Scale Room Configuration					
without joints	CAN/ULC-S102-07	Flame-Spread Rating 5 Smoke Developed Classification 175					
with typ. joints incl. exposed sealant	CAN/ULC-S102-18	Flame-Spread Rating 65 Smoke Developed Classification 310					
<b>Panel Cores:</b> <u>Korolite® Expanded Polystyrene (EPS)</u>							
Canada EPS Type	CAN/ULC-S701.1	2	1	1	1	1	1
USA EPS Type	ASTM C578	II	I	I	I	I	I
<b>Panel Weights</b>	lbs/sqft	2.18	2.35	2.54	2.72	2.91	3.0
with 26 ga. facings	kg/m <sup>2</sup>	10.6	11.5	12.4	13.3	14.2	14.65

<sup>1</sup> Foam Core Values are calculated by extrapolation of 1 inch thick EPS samples. Data provided AS-IS solely for informational purposes.

<sup>2</sup> R means resistance to heat flow. The higher the R-value, the greater the insulating power.

## Additional Properties of EPS

Expanded Polystyrene (EPS) **resists mold & fungi growth** per ASTM C1338 and has no nutritional value for insects. To protect against termites place adequate physical barriers such as membranes around below-grade EPS.

**Max. Service Temperature:** Long-Term Exposure 75°C [167°F], Intermittent Exposure 80°C [176°F]

**Thermal Expansion coefficient:** 5-7·10<sup>-5</sup>/°K

**Solubility:** Insoluble in water and in general chemically inert. EPS dissolves in hydrocarbons (e.g. fuels, oils, tar), organic solvents (e.g. acetone/ketones, benzene, paint thinner), ethers, esters, aldehydes and amines.

**Capillarity:** None

**UV-light surface degradation:** white EPS can be exposed to direct sunlight for a few weeks. Prolonged exposure to ultraviolet light creates a yellow dust on the surface of EPS products which has negligible impact on the products' properties but may require removal before adhering other materials such as stucco or self-adhesive membranes.

**Surface Burning Characteristics** **Canada** CAN/ULC-S102.2: Flame-Spread Rating ≤295, Smoke Developed Classification over 500.

**USA** ASTM E84 (UL 723)<sup>3</sup>: Flame Spread Index ≤25, Smoke-Developed Index ≤450 up to 6" thick.

**Limiting Oxygen Index:** min. 24% per ASTM D2863. Airfoam's EPS for construction applications contains a polymeric (non-HBCD) fire retardant modifier.

**CAUTION: EPS products are combustible** and must not be exposed to excessive heat, sparks, open flames, or any other sources of ignition. A protective barrier or thermal barrier is required as specified in the appropriate building code. If stored/used in closed containers, confined, or low-lying areas, **ensure adequate ventilation** to prevent accumulation of flammable pentane vapours. **Prevent inhalation of smoke, fumes or dust** from burning or fabrication activities.

**GHS Classification:** Non-Hazardous, [see SDS](#)

<sup>3</sup> Ceiling measurement only, conducted through determination of flame spread index and smoke-developed index with the removal of any contribution of molten materials ignited on the floor of the Steiner tunnel.



**Airfoam Industries Ltd.**

British Columbia  
19402 56 Avenue, Surrey, BC, Canada V3S 6K4  
800.663.8162 or +1.604.534.8626

Ontario  
81 Folsetter DrParis, ON N3L 0E2  
+1.226.263.2088

**[www.airfoam.com](http://www.airfoam.com)**

**Please contact us for a free estimate or additional information: [www.airfoam.com](http://www.airfoam.com)**

NOTICE: Airfoam assumes no obligation or liability for the information in this document. Neither Airfoam nor its employees, representatives, or resellers make any representation or warranty, express or implied, whether arising by statute, operation of law, custom of trade or otherwise, with respect to the accuracy or completeness of information contained in this document or its fitness for any particular purpose, nor do they assume any liability for damages or injury resulting from the use of such information. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.