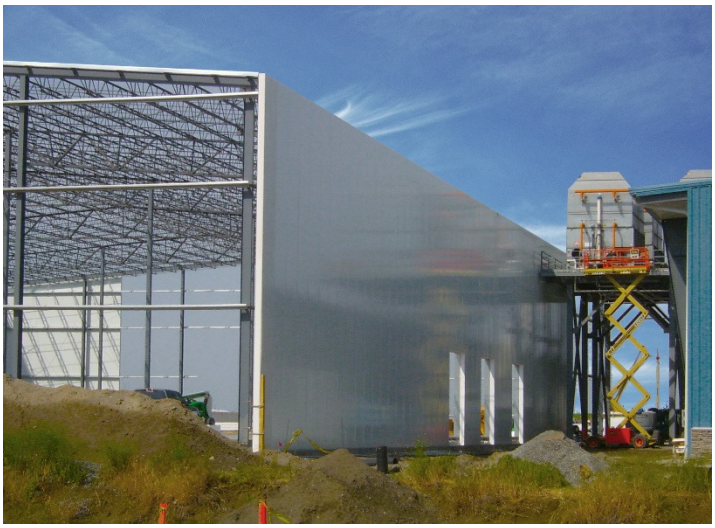
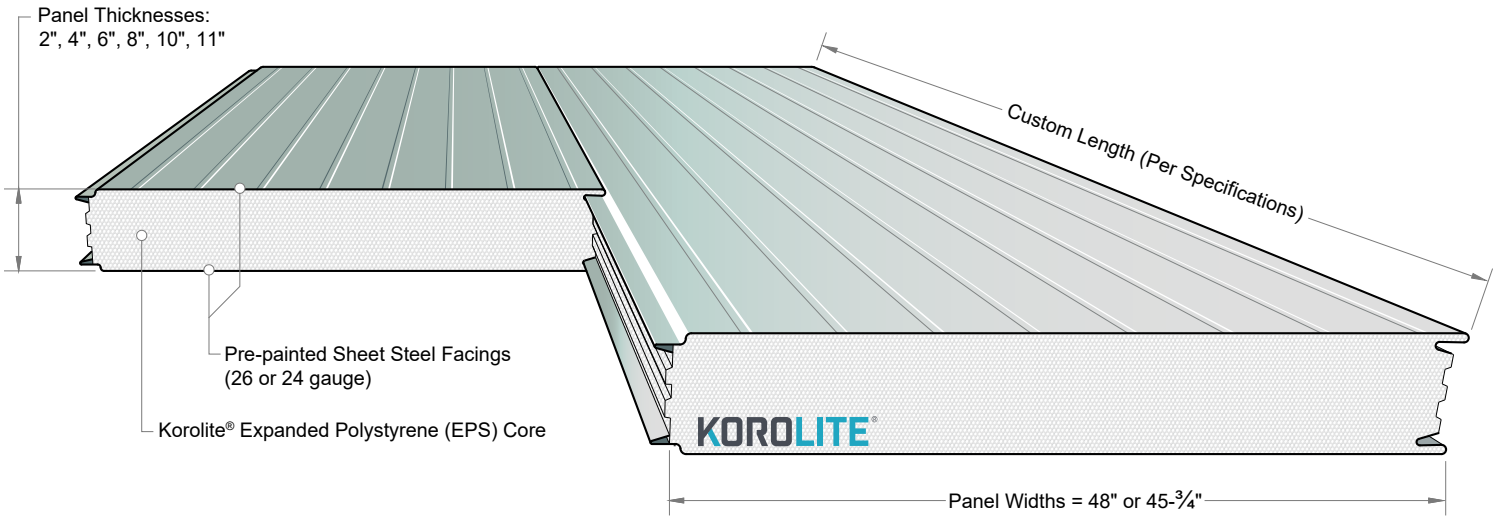
# KOROLITE®

# Insulated Metal Panels



# Insulated Metal Panels

Korolite® 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 using environmentally responsible, continuous insulation cores 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.




Korolite® 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.

ISO: 9001
ISO:14001
Certified Company

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

# Applications

Curtain walls & partition walls for Warehouses, Cooler / Freezer Rooms, Commercial, Industrial, Agricultural, Cold-Storage Facilities, Refrigerated, Climate Controlled Buildings & more.

Hatchery in Armstrong, British Columbia

Metal workshop in Northern Alberta

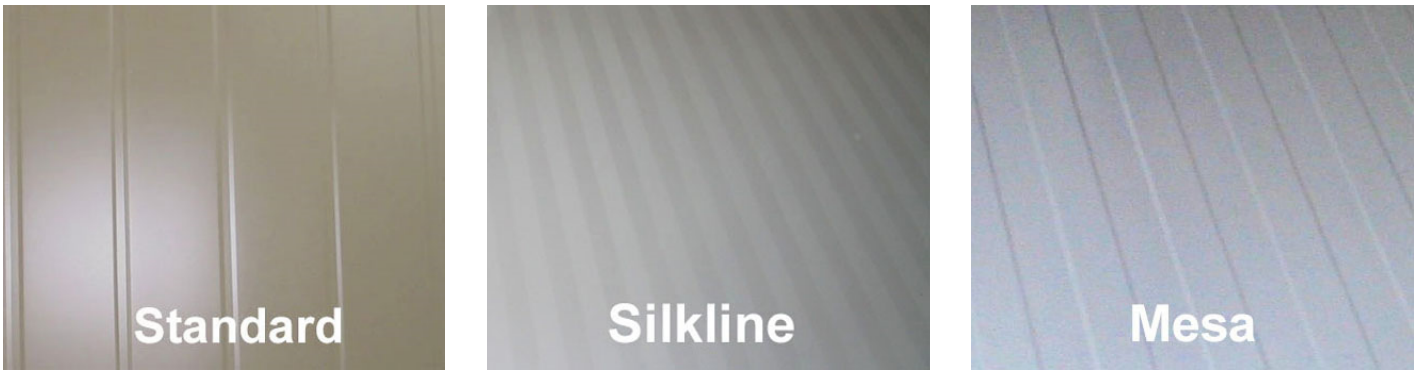
Blueberry processing plant in the BC Coastal area

Installation of a vegetable freezer in Washington state

# Profiles and Colors

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.



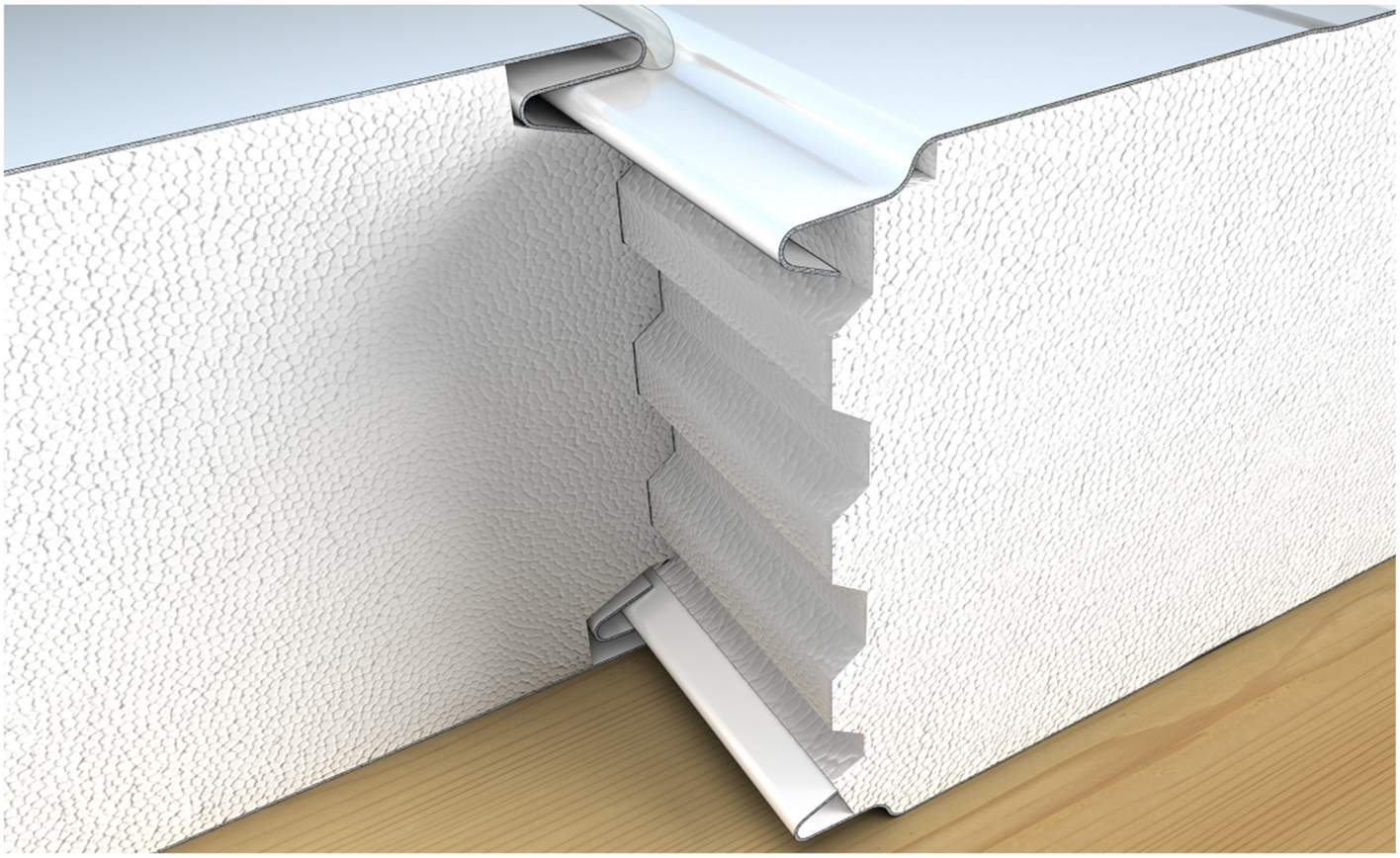

Standard **(L)**, silkline **(C)**, and mesa **(R)** profile options for the exterior sides of the panels

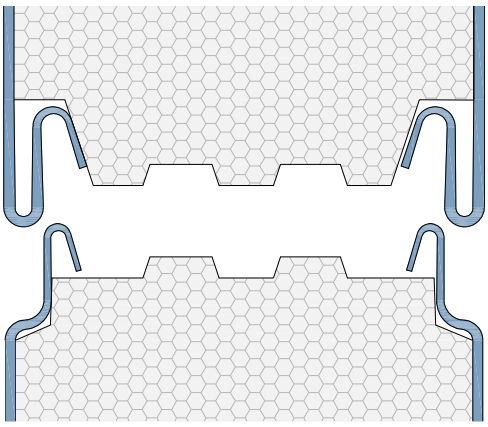
## Wash-Down Finish

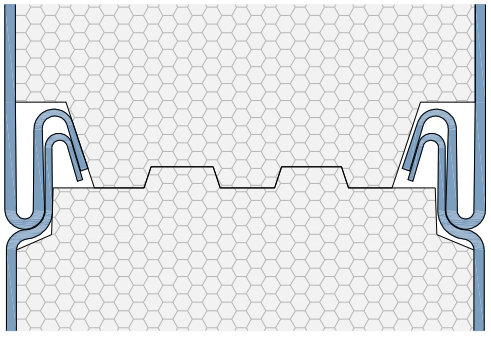
Fiber Reinforced Plastic (FRP) or similar protective boards can be applied after installation of the Korolite® panels to the building providing additional protection for applications with special wash down environments such as food processing areas. The boards can be applied to the whole length of the Korolite® 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:** close-up of the panel interlock, showing our unique insulation finger joints and roll-formed steel edges
**Bottom:** 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

Korolite® panels have been extensively tested to ensure they have reliable, quality performance and meet building codes. The following tests have been performed on Korolite® 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)

## Air Spaces and Sheet Metal

Korolite® Insulated Metal Panels do not contain an air space.

The steel facings of the Korolite® Insulated Metal Panels are either 26 Gauge [0.45mm] or 24 Gauge [0.61mm]. 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 |
| **Thermal Resistance**[1,2] typical per ASTM C518 or C177 | | | | | | | | |
| R-value $ft^2 \cdot hr \cdot °F/BTU$ | @75°F | | 8.08 | 15.4 | 23 | 31 | 39 | 42 |
| | **@40°F** | | **8.8** | **16.7** | **25** | **33** | **42** | **46** |
| | @25°F | | 9.2 | 17.4 | 26 | 35 | 44 | 48 |
| $R_{SI}$ $m^2 \cdot °C/W$ | @24°C | | 1.4 | 2.71 | 4.07 | 5.42 | 6.78 | 7.46 |
| | **@4.4°C** | | **1.55** | **2.94** | **4.41** | **5.88** | **7.34** | **8.08** |
| | @-4°C | | 1.62 | 3.06 | 4.6 | 6.13 | 7.66 | 8.43 |
| Air Permeance tested | ASTM E283 | | 0.002 l/(s•m²) at 300 Pa<br>0.0004 CFM/ft² at 6.26 psf | | | | | |
| Water Penetration tested | ASTM E331 | | Passed at 137 Pa | | | | | |
| Fire Growth of Insulated Building Panels | CAN/ULC-S138 | | Passed in Full-Scale Room Configuration | | | | | |
| Surface Burning Characteristics for Panels w/ Metal Facings | | | | | | | | |
| 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 | | | | | |
| Core: Korolite® Expanded Polystyrene | Canada CAN/ULC-S701 Type | | 2 | 1 | 1 | 1 | 1 | 1 |
| | USA ASTM C578 Type | | II | I | I | I | I | I |
| Panel Weights with 26 ga. facings | lbs/sqft | | 2.18 | 2.35 | 2.54 | 2.72 | 2.91 | 3.0 |
| | kg/m² | | 10.6 | 11.5 | 12.4 | 13.3 | 14.2 | 14.65 |

[1] Foam Core Values are calculated by extrapolation of 1 inch thick EPS samples. Data provided AS-IS solely for informational purposes.
[2] 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 • $10^{-5}$/°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 ≤290, Smoke Developed Classification over 500.
**USA** ASTM E84 (UL 723)[a]: 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.

[a] 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.

# Contact Information

KOROLITE®

## Insulated Metal Panels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**Please contact us for a free estimate or additional information: www.airfoam.com**