



PEX EXPANDED POLYSTYRENE RADIANT-HEATING HYDRONIC PIPING FLOOR PANELS



Product Data • Details • 3-Part Specification



PEX EPS RADIANT-HEATING HYDRONIC PIPING FLOOR PANELS

The thermal and mechanical properties of expandable polystyrene (EPS) make it ideal for commercial, industrial and residential “wet” applications where R (RSI) - value and moisture resistance are critical. A growing trend in energy-efficient products helps minimize a building’s carbon footprint – and plastic hydronic (hot water) piping in concert with specially designed EPS floor panels provide even heat and cleaner air resulting in lower operating costs.

DESCRIPTION

The Amvic PEX floor panel – produced using the most technically advanced automated molding equipment in North America – consists of a white EPS panel with “mushroom-shaped” nubs to lock the PEX piping/tubing in place simply by walking over the tubing. The name PEX is the mechanical term used for Cross-linked Polyethylene which is used for hydronic heating and other water plumbing tubing needs.

For added reflective and vapor retarding properties, a silver colored polyethylene film facer is factory vacuum and heat applied to the top portion of the EPS floor panel to direct the heat upward. The floor panels also have a four-sided tongue and groove interlock system for a quick, easy and secure installation.



Interlocking EPS Panel Joint

EPS Floor Panel Sizes

Board Size

49.25” x 25.25” (1250 mm x 640 mm) – Includes panel interlock

48” x 24” (1220 mm x 610 mm) – Usable board size

Overall Thickness Including “Mushroom” Nubs

AMPEX 2015F: 3-3/8” (86 mm)

AMPEX 2020F: 3-3/8” (86 mm)

AMPEX 2515F: 3-7/8” (98 mm)

AMPEX 2520F: 3-7/8” (98 mm)

AMPEX 3015F: 4-3/8” (111 mm)

AMPEX 3020F: 4-3/8” (111 mm)

AMPEX 2015F and 2020F: 2” (51 mm)

AMPEX 2515F and 2520F: 2.5” (64 mm)

AMPEX 3015F and 3020F: 3” (76 mm)

Note: The portion of the EPS floor panel that has a continuous thickness minus the “mushroom” nubs is as follows:



PEX Pipe/Tube Size Accommodation

3/8", 1/2", 5/8", 3/4", 1" (9.5 mm, 12.7 mm, 15.8 mm, 19.1 mm, 25.4 mm) diameter.

RECOMMENDED USE

- Commercial, industrial, institutional, and residential “wet” installations that make use of the large thermal mass of a concrete slab floor or lightweight concrete over a wooden subfloor.
- All areas of a building with cast-in-place concrete floors.
- Slab-on-grade or sandwich slab applications.
- Snow and ice melt applications for driveways and walkways
- New construction or renovation.
- Customized installations.

FEATURES/BENEFITS

Optional compressive strengths: Available in several densities and thicknesses to withstand load and backfill forces.

Closed cell structure: Provides permanent, stable thermal insulation properties and water resistance.

Does not promote mold or mildew: Has no pest nutrient value, will not decay over time, and is CFC (chlorofluorocarbons) free.

Quick, convenient installation: Combination of tongue and groove interlocking joints and “mushroom” nubs allows tubing to be firmly “walked” into panels, resulting in reduced installation costs.

Prevents significant heat loss: “heat sink” into ground is reduced thereby enhancing overall efficiency of the radiant-slab system by allowing the slab to reach a desired temperature quicker, resulting in greater control of room temperature.

Comfort is huge benefit: Radiant surfaces heat occupants directly rather than by typical convection.

Barefoot benefits: EPS insulation keeps residential floors warm, allowing occupants to walk around barefoot even in winter.

Design Versatility: Allows for customized installations i.e. if installers do not like layout, the EPS panels can be easily re-configured.



EPS radiant floor heat is extremely quiet: An important feature in high rise/midrise construction is acoustical issue. Also “invisible” system allows for more flexible furniture layout.

PHYSICAL PROPERTIES*

Property	Standard	Special Order					
		AMPEX 2015F	AMPEX 2020F	AMPEX 2515F	AMPEX 2520F	AMPEX 3015F	AMPEX 3020F
Density	ASTM D 1622	1.5 lbs./ft ³	2.2 lbs./ft ³	1.5 lbs./ft ³	2.2 lbs./ft ³	1.5 lbs./ft ³	2.2 lbs./ft ³
Thermal Resistance	ASTM C518-10	10°F.ft ² .h/Btu R10	11°F.ft ² .h/Btu R11	12°F.ft ² .h/Btu R12	13°F.ft ² .h/Btu R13	14°F.ft ² .h/Btu R14	15°F.ft ² .h/Btu R15
R-Value		(RSI 1.76)	(RSI 1.94)	(RSI 2.11)	(RSI 2.29)	(RSI 2.47)	(RSI 2.64)
Compressive Strength	ASTM D1621-10	30.0 psi	45.5 psi	30.0 psi	45.5 psi	30.0 psi	45.5 psi
Flexural Strength	ASTM C203-05a(2012)	51.9 psi	68.6 psi	51.9 psi	68.6 psi	51.9 psi	68.6 psi
Vapor Barrier	ASTM E961E96M – 12	23.8 (ng/Pa.s.m ²) 0.42 Perms	17.5 (ng/Pa.s.m ²) 0.31 Perms	23.8 (ng/Pa.s.m ²) 0.42 Perms	17.5 (ng/Pa.s.m ²) 0.31 Perms	23.8 (ng/Pa.s.m ²) 0.42 Perms	17.5 (ng/Pa.s.m ²) 0.31 Perms

*Test performed by QIA Laboratories, Toronto, On

PEX RADIANT HEAT VS. OTHER HEATING SYSTEMS

Radiant floor heating has a number of advantages. It is more efficient than baseboard heating and usually more efficient than forced-air heating because it eliminates duct losses. People with allergies prefer radiant heat because it doesn’t distribute allergens like forced air systems. Also, hydronic (liquid-based) systems use little electricity. Hydronic systems are the most popular and cost-effective radiant heating systems for heating-dominated climates.

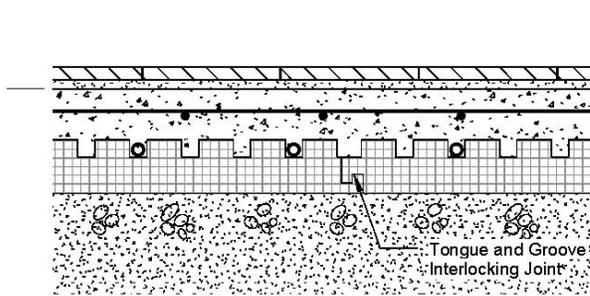
Design Considerations

Ceramic tile is the most common and effective floor covering for radiant floor heating because it conducts heat well and adds thermal storage. Common floor coverings such as vinyl and linoleum sheet goods, carpeting or wood can also be used, but any covering that insulates the floor from the room will decrease the efficiency of the system.

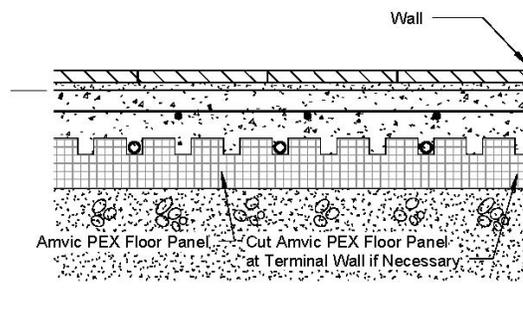
The Amvic PEX panel is available in both commercial and residential densities. Commercial has R values of R11, R13 and R15 (RSI 1.94, RSI 2.29 and RSI 2.64). Residential has R values of R10, R12 and R14 (RSI 1.76, RSI 2.11 and RSI 2.47). See “Physical Properties” chart.

DETAILS



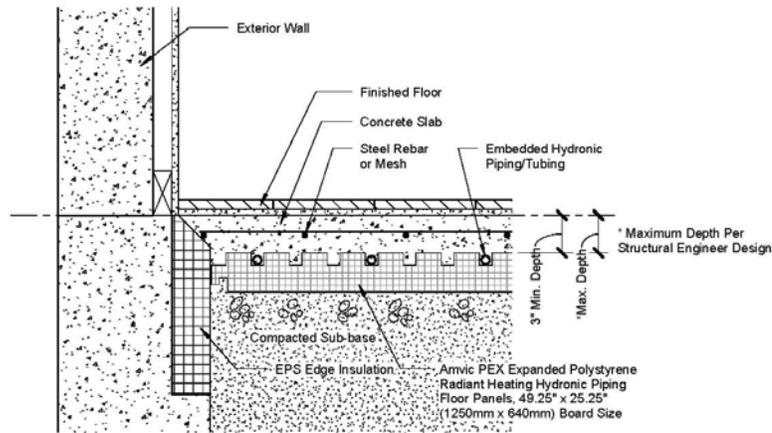


① Typical Amvic PEX Floor Panel Joint
1 1/2" = 1'-0"



NOTE:
STARTING FROM LEFT AT EXTERIOR WALL, USE HALF PANEL TO STAGGER JOINTS FOR SECOND ROW (RUNNING BOND LAYOUT)

② First Row Amvic PEX Panel at Terminal Wall
1 1/2" = 1'-0"



① PEX Panel at Slab-on-grade (Starter Wall)
1 1/2" = 1'-0"

LEED DATA

The Amvic Insulated Radiant PEX panels are cost effective, sustainable and environmentally friendly. As architects and builders accelerate the transformation to high performing, healthy green buildings, homes and communities, Amvic has responded to their needs and for LEED compliant building materials.

Amvic Insulated Radiant PEX panels can make a significant LEED point contribution to your buildings for enhanced energy performance



INSTALLATION

Before Starting:

- The useable area of the Amvic PEX panels is 24" X 48" (610 mm x 1220 mm). Measure the total area of the installation and divide by the square feet or square meters to arrive at the number of PEX panels required.
- The Amvic PEX panel will accommodate 3/8", 1/2", 5/8", 3/4" and 1" (9.5 mm, 12.7 mm, 15.8 mm, 19.1 mm and 25.4 mm) PEX tubing.
- Design to accommodate a 3" (76 mm) o.c. pattern. The tubing layout will need to use the same o.c. and multiples thereof for the project.
- Ensure that the sub-base is smooth, compacted and at the proper grade.
- Check local building code for any vapor barrier requirement.

Installation Steps

Installation of the Amvic PEX panel is very simple; follow the 4 steps outlined in the Installation Guide contained in each bundle, as follows:

1. Work room from left corner to right, interlocking the T & G edges as the work progresses. When at the end of first row, cut last panel if necessary.
2. Start next row staggered from first, ensuring panels are properly interlocked and aligned.
3. Maintain staggered running bond layout. Where necessary, glue small pieces of panels using construction adhesive compatible with EPS e.g. Lepage / Loctite Foam board Adhesive PL300.
4. Install PEX hydronic tubing by walking and seating tubing into nubs of panels according to design layout.



AVAILABILITY & COSTS

Available throughout North America. Contact Amvic for current cost information.

Ordering Data

PACKAGING	AMPEX 2015F	AMPEX 2020F	AMPEX 2515F	AMPEX 2520F	AMPEX 3015F	AMPEX 3020F
Panels per bundle	20	20	18	18	16	16
Sq. ft. (m ²) per bundle	160 (11.148)	160 (11.148)	144 (13.378)	144 (13.378)	128 (11.892)	128 (11.892)
Bundles per truckload	92	92	92	92	92	92
Panels per truckload	1840	1840	1656	1656	1472	1472

MAINTENANCE

No maintenance required.

ARCHITECT/CONSULTANT CUSTOM SERVICES

Custom services provides technical support, specification assistance, information updates and other data on our website www.amvicsystem.com

3-PART GUIDE SPECIFICATION

Refer to www.amvicsystem.com website for Microsoft Word (editable) 3-Part specification documents for both U.S. and Canada.

OTHER AMVIC PRODUCTS

- Insulated Concrete Forms (ICF)
- AmDeck Floor & Roof System (EPS forms)
- SilverBoard Expanded Polystyrene (EPS) Comfort Insulation
- Amdry Subfloor System
- Geofoam Lightweight Fill (Geotechnical)
- Thermoquiet High Performance Underlay
- Ecoair Ground-Air Heat Exchange System



AMVIC – THE COMPANY

Amvic is an industry leading manufacturer of **Insulated Concrete Forms (ICF), Rigid Foam Insulation (EPS) and other products** that consistently exemplify exceptional quality, superior strength and ease of installation. Since Amvic began operations in 1999, the company has experienced increasing demand for its products which has led to rapid growth and expansion that is anticipated to continue in the future.

Amvic's primary manufacturing facilities are in Toronto, Ontario and Calgary, Alberta, Canada. The head office is also located in Toronto, Canada. The company has also aligned itself with an exceptional network of facilities in the United States and internationally to produce high quality, energy efficient products that can be delivered promptly anywhere in North America.

All Amvic facilities are equipped with top of the line machinery, which ensures that the highest quality of energy efficient products are manufactured consistently.

President of Amvic – Dr. Victor Amend, PHD Building Science, has been actively involved in the construction industry since obtaining his undergraduate degree in Civil Engineering in 1981.

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