



CSI: DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING
Section: 23 21 13—Hydronic Piping

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Products: Heatlink Radiant PEX Tubing

Listee: Heatlink Group, Inc.
115-11500 Stonehill Drive NE.
Calgary, Alberta T3N 2M7
Canada
www.heatlink.ca

Compliance with the following codes:

2024, 2021, 2018, 2015, 2012 and 2009 *International Mechanical Code*® (IMC)
2024, 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
2024, 2021, 2018, 2015, 2012 and 2009 *Uniform Mechanical Code*® (UMC)*
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Compliance with the following standards:

ASTM F876-2024a, Standard Specification for Cross-linked Polyethylene (PEX) Tubing.
ASTM F877-2024, Standard Specification for Cross-linked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems.
ICC-ES LC1004 (June 2010), PMG Listing Criteria for PP, PEX, PEX-AL-PEX and PP-AL-PP Piping, Tube and Fittings Used in Radiant Heating and Water Supply Systems.

Identification:

Tubing shall be marked spaced at interval of not more than 5 feet (1524 mm) with the following:

- Company name or trademark (Heatlink)
- Product designation (PEX Tubing)
- Nominal tube size
- Material designation (PEX)
- Standard dimension ratio (SDR9)
- Temperature and pressure ratings
- ASTM F876 designation
- Production code
- The ICC-ES PMG listing mark

Installation:

Heatlink Radiant PEX Tubing must be installed in radiant heating systems in accordance with the applicable code and the manufacturer's published installation instructions.

Details of the design and installation of the radiant heating system must be submitted to the code official for approval. All circuits must be formed from continuous lengths of tubing, from manifold supply to return. No splices are allowed. The system may be installed in either concrete or wood floors. When the system is embedded in concrete floors, a moisture barrier must be laid over a concrete base slab that has a minimum thickness of 3½ inches (38 mm). Under-floor insulation and reinforcing mesh must be placed on the slab. The tubing is uncoiled and attached to the mesh using soft steel wire or clips. A concrete topping is laid over the tubing. When embedment is in concrete, the installation, including minimum concrete cover, must comply with Chapter 19 of the *International Building Code*® (IBC) or Chapter 5 of *International Residential Code*® (IRC), as applicable. In areas using the Uniform Mechanical Code, PEX tubing is not to be installed within the first 18 inches (457 mm) of piping connected to a water heater. When the tubing is installed over polystyrene boards, the boards must comply with IBC Chapter 263 or IRC Chapter 3, as applicable.

Models:

Heatlink Radiant PEX Tubing consists of cross-linked polyethylene (PEX) tubing recognized for use in radiant heating systems. The tubing complies with ASTM F876 and ASTM F877.

The tubing is available in nominal diameters of 3/8, 1/2, 5/8, 3/4, 1, 1-¼ and 1-½ inch (10, 13, 16, 19, 25, 32, and 38 mm), and in coils 100 to 1600 feet (30.5 to 487.8 m) long. Heatlink Radiant PEX Tubing is pressure-rated for 100 psi (689 kPa) at 180°F (82°C) with a standard dimension ratio of 9. Standard dimension ratio is the ratio of outside diameter to wall thickness.

Conditions of Listing:

1. Details on the design and installation of the heating system must be submitted to the code official for approval.
2. The tubing must be pressure-tested for leaks before installation of covering. The leak test must be witnessed by the code official or the code official's designated representative.
3. When installation is in fire-resistance-rated assemblies, evidence of compliance with IBC Section 713 (Penetrations), IBC Section 721 (Prescriptive Fire Resistance), IBC Section 708 (Fire Partitions) or UBC Section 711 (Horizontal Assemblies), as applicable, must be provided to the code official for approval.
4. The tubing must be protected from exposure to direct sunlight. Tubing must be protected from physical damage with an oversized flexible corrugated sleeve at structural mass penetrations and when the tube is uncovered. Annular spaces between sleeves and pipes must be filled or tightly caulked in an approved manner.
5. All systems must be installed by Heatlink trained installers in accordance with Heatlink Radiant PEX Tubing installation instructions, which are provided with the product. Installation must conform to relevant requirements of the referenced codes and is subject to approval by the code official. Manufacturer's instructions must be furnished to the code official upon request.
6. During placement of the cover over the tubing, the tube must be maintained at the greater of 1½ times the working pressure or 100 psi (689.4 kPa).
7. Clearances from heat-producing equipment must be in accordance with the applicable code.
8. Minimum bending radius of the tube must be six times the outside tube diameter for cold-bent tube and three times the outside diameter for hot-bent tube. Outside diameter is nominal diameter plus 1/8 inch (3.2 mm).
9. The tubing is limited to applications using potable water as the transfer fluid.
10. The potable water connections must be protected against backflow from the hydronic heating system.
11. The tubing are under a quality control program with two inspections per year by ICC-ES.