

# **ICC-ES PMG Product Certificate**



**PMG-1087** 

Effective Date: June 2024

This listing is subject to re-examination in one year.

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A Subsidiary of the International Code Council®

CSI: DIVISION: 22 00 00—PLUMBING

Section: 22 11 16—Domestic Water Piping

DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

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: PureLink Plus PEX Tubing

SureLink PEX Tubing

HeatLink Radiant PEX Tubing PureLink Reclaimed PEX Tubing

Listee: Heatlink Group, Inc.

#115, 11500 - Stonehill Drive NE

Calgary, Alberta T3J 4S1

Canada

www.heatlink.com

### Additional listee:

Heatlink Group, Inc. 3615 32 Street NE Calgary, Alberta, T1Y5Y9 Canada

www.heatlink.com

# Compliance with the following codes:

2024, 2021, 2018, 2015, 2012, 2009 and 2006 International Plumbing Code® (IPC) 2024, 2021. 2018, 2015, 2012, 2009 and 2006 International Mechanical Code® (IMC) 2024, 2021, 2018, 2015, 2012, 2009 and 2006 International Residential Code® (IRC) 2024, 2021, 2018, 2015, 2012, 2009 and 2006 Uniform Plumbing Code® (UPC)\* 2024, 2021, 2018, 2015, 2012, 2009 and 2006 Uniform Mechanical Code® (UMC)\* 2024, 2021, 2018, 2015, 2012 and 1997 National Standard Plumbing Code<sup>©</sup> (NSPC) 2022, 2019, 2016, 2013 and 2010 California Plumbing Code (CPC) 2022, 2019, 2016, 2013 and 2010 California Mechanical Code (CMC) 2023, 2020 and 2017 City of Los Angeles Plumbing Code 2023, 2020 and 2017 City of Los Angeles Mechanical Code

2023, 2021, 2017 and 2007 Code of Massachusetts Regulation 248 CMR 10.00: Uniform State

Plumbing Code



2023, 2021 and 2017 Massachusetts State Building Code 780 CMR Ninth Edition: Chapter 28 2022 Uniform Illustrated Plumbing Code - India (UIPC-India)\*

# Compliance with the following standards:

ASTM F876-2024, Standard Specification for Crosslinked Polyethylene (PEX) Tubing

ASTM F877-2024, Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems

ICC-ES AC122-2014, Acceptance Criteria for PP, PEX, PEX-AL-PEX and PP-AL-PP Piping, Tube and Fittings Used in Radiant Heating and Water Supply Systems

ICC-ES LC1004-2010, 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

NSF/ANSI 14-2023, Plastic Piping System Components and Related Materials

NSF/ANSI/CAN 61-2023, Drinking Water System Components - Health Effects

ASTM F2159-2023a, Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised-temperature (PE-RT) Tubing

ASTM F1807-2023, Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised-temperature (PE-RT) Tubing

ASTM F1960-2023b, Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing

ASTM E84-2023d, Standard Test Method for Surface Burning Characteristics of Building Materials UL 723 (Ed. 11), Test for Surface Burning Characteristics of Building Materials

ULC S102.2 (Ed.8), Standard Method of Test for Surface Burning Characteristics of Floor, Floor Coverings, and Miscellaneous Materials and Assemblies

### Identification:

Tubing: Shall be marked every 5 feet (1524 mm) with the following:

- Manufacturer's name or trademark name (PureLink Plus, SureLink, HeatLink or PureLink Reclaimed)
- Nominal tube size
- Material designation (5106 PEX)
- Potable water designation (PW)
- Standard dimension ratio (SDR9)
- Temperature and pressure ratings
- ASTM F876/F877 designation
- Production code
- The ICC-ES PMG listing mark (on label acceptable)

<u>Fittings:</u> The markings shall be applied to the fittings in such a manner that is remains legible after installation and inspection.

Marking on brass fittings shall include the manufacturer's name or trademark, ASTM F1807 and the ICC-ES PMG listing mark. Marking on plastic fittings shall include manufacturer's name or trademark, ASTM F2159 and ICC-ES PMG listing mark.

Marking on brass fittings packaging must include manufacturer's name, fittings size, and ASTM F1807. Marking on plastic fittings packaging must include manufacturer's name, fittings size and ASTM F2159.

#### Installation:

Heatlink PEX tubing and fittings must be installed in accordance with the applicable code and the manufacturer's published installation instructions.

Water Distribution: Horizontally laid pipe must be secured in such a manner that temperature-induced expansion and contraction are accommodated. Mounting brackets and installation hardware

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are provided by the manufacturer. In areas using the UPC, PEX tubing is not to be installed within the first 18 inches (457 mm) of piping connected to a water heater.

**Water Service:** The tubing is to be installed underground in a manner that ensures external loads will not cause a decrease in the vertical dimension of the cross section exceeding 5 percent. Tubing installation is to provide an allowance for contraction of the tubing due to temperature change prior to backfilling. In areas with poor soil conditions (plastic clays), the trench bottom is to be prepared using granular material, to provide a stable base. Potable water service tubing is not to be located in, under or above cesspools, septic tanks, septic tank drainage fields or pits.

Radiant Heating Systems: 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 IBC Section 1906.3, or IRC Section R506, as applicable. When the tubing is installed over polystyrene boards, the boards must comply with IBC Section 2603 or 2009 IRC Section R314 (2006 IRC Section R316), as applicable.

**Fire Resistive Assembly Rating:** Installation in accordance with the manufacturer's instructions and the requirements of the latest edition of the applicable code. Additional ratings based on UL 263 or ULC S101 besides those noted in tables below can also be found under UL file #R21174.

ASTM E84/UL 723 Test Method		
	Flame Spread Index (FSI)	Smoke Developed Index (SDI)
PureLink (red, white, blue, natural)  Up to 2 inch (51 mm) nominal diameter pipes and accessories installed with ½-inch (13 mm) pipe insulation; no spacing requirements between adjacent runs of tubing.	≤ 25	≤ 50
PureLink (natural)  2 inch (51 mm) nominal diameter pipe supported continuously with 20-gauge pipe supports covering minimum half exposed pipe area. PureLink exposed between pipe supports requires encasing with ½ inch (13 mm) approved pipe insulations. Piping is to be clamped with standard support clamps following manufacturer's installation instructions.	≤ 25	≤ 50
HeatLink (natural)  Up to 1-1/2 inch (38 mm) nominal diameter pipe and accessories installed with rated ½ inch (13 mm) pipe insulation; no spacing requirements between adjacent runs of tubing.	≤ 25	≤ 50

NOTE: The following list of insulation types which are approved by HeatLink for use with their PEX tubing/fittings and accessories at the maximum sizes outlined in the tables above.

<u>Insulation:</u> Mason Alley-K; Johns Manville Micro-Lok HP; Johns Manville Micro-Lok; Owens Corning Vapor Wick; Owens Corning Fiberglass; GLT Pipe and Tank; Knauf Earthwool; Redi-Klad

Requirements: A minimum thickness of  $\frac{1}{2}$  inch (13 mm); Listed and in compliance with ASTM C547; have a flame spread index of  $\leq$  25 and smoke developed index of  $\leq$  50.

ASTM UL S102.2 Test Method		
	Flame Spread Index (FSI)	Smoke Developed Index (SDI)
PureLink (red, white, blue, natural)  Up to 2 inch (51 mm) nominal diameter tubing product and accessories installed with rated ½ inch (13 mm) pipe insulation; no spacing requirements between adjacent runs of tubing.	≤ 25	≤ 50
PureLink (natural, red, white, blue)  Up to 2 inch (51 mm) nominal diameter piping for water filled pipe.  There are no spacing requirements between adjacent runs of this pipe assembly. Optional pipe insulation can be installed to maintain the ratings noted.	≤ 25	≤ 50
HeatLink™ (natural)  Up to 1-1/2 inch (38 mm) nominal diameter pipe and accessories installed with rated ½ inch (13 mm) pipe insulation; no spacing requirements between adjacent runs of tubing.	≤ 25	≤ 50

NOTE: The following list of insulation types which are approved by HeatLink for use with their PEX tubing/fittings and accessories at the maximum sizes outlined in the tables above.

<u>Insulation:</u> Mason Alley-K; Johns Manville Micro-Lok HP; Johns Manville Micro-Lok; Owens Corning Vapor Wick; Owens Corning Fiberglass; GLT Pipe and Tank; Knauf Earthwool; Redi-Klad

Requirements: A minimum thickness of  $\frac{1}{2}$  inch (13 mm); Listed and in compliance with ASTM C547; have a flame spread index of  $\leq$  25 and smoke developed index of  $\leq$  50.

#### Models:

**PureLink Plus and SureLink** are cross-linked polyethylene (PEX) tubing used in potable hot- and cold-water distribution systems and are available in the following colors: red, blue, white, or natural. The PEX materials comply with NSF14 as well as ASTM F876. The tube is available in nominal diameters of  $^{3}/_{8}$ ,  $^{1}/_{2}$ ,  $^{3}/_{4}$ , 1, 1- $^{1}/_{4}$ , 1- $^{1}/_{2}$  and 2 inches (10, 13, 19, 25, 32, 38 and 51 mm) in straight lengths, and in coils 100 to 1000 feet (30.5 to 304.8 m) long. They are pressure-rated for 100 psi (689 kPa) at 180°F (82°C), and 160 psi (1100 kPa) at 73°F (23°C), for a standard dimension ratio of 9. Standard dimension ratio is the ratio of outside diameter to wall thickness and is constant for all tube sizes over  $^{1}/_{2}$  inch (12.7 mm).

**HeatLink** is a cross-linked polyethylene (PEX) tubing used in radiant heating systems and is available in natural color. The tube is available in nominal diameters of  $^{1}/_{2}$ ,  $^{5}/_{8}$ ,  $^{3}/_{4}$ , 1,  $^{1-1}/_{4}$ , and  $^{1-1}/_{2}$  inch (10, 16, 19, 25, 32, and 38 mm) in coils 100 to 1000 feet (30.5 to 304.8 m) long. They are pressure-rated for 100 psi (689 kPa) at 180°F (82°C), for a standard dimension ratio of 9. Standard dimension ratio is the ratio of outside diameter to wall thickness and is constant for all tube sizes over  $^{1}/_{2}$  inch (12.7 mm).

**PureLink Reclaimed** is the same product as PureLink, but available in purple color noting its use exclusively with non-potable water.

**Fitting assemblies** for HeatLink®, Inc., PEX tubing must be brass or plastic fittings, complying with ASTM F1807, ASTM F1960, ASTM F2080 or ASTM F2159, and must be recognized in a current ICC-ES PMG listing.

# Conditions of listing:

- 1. 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.
- 2. When installation is in fire-resistance-rated assemblies, evidence of compliance with IBC Section 712 (penetrations) or IBC Section 720 (prescriptive fire resistance) as applicable, must be provided to the code official for approval.
- The tubing and fittings must be protected from exposure to direct sunlight. Tubing and fittings 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.
- 4. All systems must be installed by HeatLink®, Inc., trained installers in accordance with the manufacturer's published 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.
- 5. 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).
- 6. Clearances from heat-producing equipment must be in accordance with the applicable code.
- 7. Minimum bending radius of the tube must be six times the outside tube diameter. The outside diameter is nominal diameter plus <sup>1</sup>/<sub>8</sub> inch (3.2 mm).
- 8. HeatLink is for use in radiant systems only and PureLink Reclaimed for reclaimed water systems only. Neither are for use in potable water systems.
- 9. The tubing and fitting systems are under a quality control program with two surveillance inspections per year by ICC-ES.