

ICC-ES PMG Listing**PMG-1053**

Effective Date: October 1, 2009

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

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A Subsidiary of the International Code Council®

CSI: DIVISION: 15—MECHANICAL
Section: 15180—Heating and Cooling Piping

Products: Mr. PEX® Barrier PEX Tubing

Use: Radiant Heating Systems

Listee: Safelink Systems, Inc.
dba Mr. PEX Systems, Inc.
2613 – 87th Court West
Northfield, Minnesota 55057
www.mrpexsystems.com

Compliance with the following codes:

2009 *International Mechanical Code*® (IMC)
2009 *International Residential Code*® (IRC)
2009 IAPMO *Uniform Mechanical Code* (IAPMO UMC)

Compliance with the following standards:

ASTM F 876, Standard Specification for Crosslinked Polyethylene (PEX) Tubing.
ASTM F 877, Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems.
LC1004, PP, PEX, PEX-AL-PEX and PP-AL-PP Piping, Tube and Fittings Used in Radiant Heating and Water Supply Systems.

Identification:

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

- Company name (Mr. PEX® Systems, Inc.)
- Product designation (Mr. PEX® Barrier PEX Tubing)
- Nominal tube size
- Material designation (PEX)
- Standard dimension ratio (SDR9)
- Temperature and pressure ratings
- ASTM F 876 designation
- Production code
- The name of the inspection agency [NSF International (AA-633)]
- The ICC-ES PMG listing mark

Installation:

Mr. PEX® Barrier 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 3¹/₂ 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 Section 1906.3 of the 2009 *International Building Code*[®] (IBC), Section 1906.3 of the 1997 *Uniform Building Code*[™] (UBC) or IRC Section R506, as applicable. In areas using the IAPMO UPC, 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 Section 2603, UBC Section 2602 or IRC Section R314, as applicable.

Models:

Mr. PEX[®] Barrier PEX Tubing consists of cross-linked polyethylene (PEX) tubing recognized for use in radiant heating systems. The tubing complies with ASTM F 876 and ASTM F 877.

Mr. PEX[®] Barrier PEX Tubing has a red exterior oxygen barrier. The tubing is available in nominal diameters of 3/8, 1/2, 5/8, 3/4, and 1 inch (10, 13, 16, 19 and 25 mm), and in coils 100 to 1600 feet (30.5 to 487.8 m) long. Mr. 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 720 (Prescriptive Fire Resistance), UBC Section 709 (Walls and Partitions) or UBC Section 710 (Floor/ceiling or Roof/ceiling), 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 Mr. PEX[®], Inc., trained installers in accordance with Mr. PEX[®], Inc., 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 1¹/₂ 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 is manufactured by LK PEX AB in Ulricehamn, Sweden, under a quality control program with three inspections per year by NSF International (AA-633).