



CSI: DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING (HVAC)
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.

Product: Watts Radiant RadiantPERT Tubing

Listee: Watts Regulator Company
815 Chestnut Street
North Andover, MA 01845
www.watts.com

Infloor Radiant Heating
PO Box 4945
503 Gregg Drive
Buena Vista, Colorado 81211

Compliance with the following codes:

2024, 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
2024, 2021, 2018, 2015, 2012 and 2009 *International Mechanical Code*® (IMC)
2024, 2021, 2018, 2015, 2012 and 2009 *Uniform Mechanical Code*® (UMC*)

**Uniform Mechanical Code is a copyrighted publication of the International Association of Plumbing and Mechanical Officials*

Compliance with the following standards:

ASTM F2623-2024(e1), Polyethylene of Raised Temperature (PE-RT) SDR9 Tubing
NSF/ANSI 14-2023, Plastic Piping System Components and Related Materials

Identification:

Watts RadiantPERT tube is marked every 5 feet (1524 mm) with the Watts company name, the nominal tube size, the material designation (PE-RT 2708), the standard dimension ratio (SDR 9), the temperature and pressure ratings, the ASTM F2623 designation, the production code, and the ICC-ES PMG listing mark.

Installation:

Watts RadiantPERT tubing must be installed in accordance with the manufacturer's published installation instructions and the applicable code. Installation is subject to approval by the code official having jurisdiction.

System must be installed using Watts Radiant RadiantPERT tubing. All connections must be made using Watts Radiant CinchClamp, CrimpRing, Compression, or Cold Expansion fittings of corresponding size and be recognized in a current ICC-ES evaluation report or listing.

Radiant heat piping: The tubing must be pressure-tested for leaks before installation of the cover, as noted in IRC Section M2103.4, IMC Section 1209.2, or IAPMO UMC Section 1207.0, as applicable. The leak test must be witnessed by the code official. Embedded piping must be provided with a thermal barrier in accordance with IMC Section 1209.5 or IRC Section M2103.2 as applicable.

Clearances from heat-producing equipment must be in accordance with Section 503.7.8 of the 2012 *International Fuel Gas Code*[®], Section M1306 of the IRC or Section 802.10.5 of the IAPMO UMC, as applicable.

Models:

Watts Radiant RadiantPERT is a 5-Layer PE-RT (polyethylene raised temperature) tubing used for radiant heating, cooling, snow melting, and non-potable water distribution piping. RadiantPERT is manufactured with an integral ethylene vinyl alcohol (EVOH) DIN Standard O2 barrier to limit oxygen diffusion through the walls of the tubing to less than 0.10g/m³/day at 104°F (40°C) water temperature.

The orange-colored tubing is SDR-9 and is available in nominal diameters of $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and 1 inch (10, 13, 16, 19, and 25 mm) and in coils of various lengths.

Conditions of listing:

1. When code approval is required, details on the design and installation of the heating system must be submitted to the code official for approval.
2. During placement of the cover over the tubing, the tube must be maintained at the greater of 1-1/2 times the working pressure or 100 psi (689.4 kPa), whichever is greater.
3. When code approval is required, the tubing installation must be pressure-tested for leaks in the presence of the code official or the official's designated representative prior to covering.
4. When installation is in fire-resistive-rated assemblies, evidence of compliance with the 2012 *International Building Code*[®] (IBC) Section 713 (penetrations) must be provided to the code official.
5. The potable water connections must be protected against backflow from the hydronic heating system.
6. The tubing must not be used as a source of electrical ground.
7. Minimum bending radius is six times the outside tube diameter of the PE-RT tube. The outside diameter is the nominal diameter plus $\frac{1}{8}$ inch (3.2 mm).
8. The tubing serving as a component of radiant systems is limited to applications using potable water or potable water/anti-freeze solution based on anti-freeze products approved for hydronic heating system use as the transfer fluid.
9. When the system is embedded in concrete, tubing must be covered a minimum of $\frac{3}{4}$ inch (19.1 mm) and installation must comply with IBC Section 1906.3.
10. The tubing is manufactured in Titusville, Pennsylvania under a quality control program with semi-annual inspections by ICC-ES.