

## ICC-ES PMG Listing

## PMG-1013

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*This listing is subject to re-examination in one year.*[www.icc-es.org/pmg](http://www.icc-es.org/pmg) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

CSI: Division 15–Mechanical  
Section: 15140–Domestic Water Piping  
Section: 15180–Heating and Cooling Piping

Products: REHAU RAUPEX, UV-SHIELD and O<sub>2</sub> Barrier Tube and Fittings

Listee: REHAU Incorporated  
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Compliance with the following codes:

2009 *International Plumbing Code*® (IPC)  
2009 *International Residential Code*® (IRC)  
2009 *International Mechanical Code*® (IMC)  
1997 ICBO *Uniform Mechanical Code*™ (ICBO UMC)  
1997 *Standard Plumbing Code*® (SPC)  
2009 IAPMO *Uniform Plumbing Code* (IAPMO UPC)\*  
2009 IAPMO *Uniform Mechanical Code* (IAPMO UMC)\*

\*UPC and UMC are copyrighted publications of IAPMO.

Compliance with the following standards:

ASTM F 876, Specification for Cross-linked Polyethylene (PEX) Tubing  
ASTM F 877, Specification for Cross-linked Polyethylene (PEX) Plastic Hot and Cold Water Distribution Systems  
NSF 14, Plastic Piping System Components and Related Materials  
NSF 61, Drinking Water System Components – Health Effects  
LC1004 PMG Criteria for PEX, PEX-AL-PEX and PP-AL-PP Piping, Tubing and Fittings Used in Radiant Heating and Water Supply Systems

Identification:

**Tubing:** The tubing is marked every 3 feet (914 mm) with the following: REHAU company name, product designation (REHAU RAUPEX, RAUPEX UV-Shield or RAUPEX O<sub>2</sub> BARRIER), nominal tube size, material designation (PEX 3006), potable water designation (PW), standard dimension ratio (SDR9), temperature and pressure ratings, ASTM F 876 / F 877 designation, production code, the name of the inspection agency (NSF International AA-633), and one of the following: ICC-ES evaluation report number (ESR-1576), the ICC-ES PMG listing number (PMG-1013) or the ICC-ES PMG listing mark.

**Fittings:** REHAU fittings are marked with the following: REHAU name, nominal diameter, potable water marking (PW), letter designation of fitting manufacturer, and logo of the inspection agency (NSF International).

**Installation:**

REHAU tubing and fittings must be installed in accordance with the manufacturer's published installation instructions, the applicable codes and this listing.

**Water Distribution:** Horizontally-laid pipe must be secured in such a manner that temperature-induced expansion and contraction are accommodated. In jurisdictions enforcing the IAPMO UPC, PEX tubing must not be installed within the first 18 inches (457 mm) of piping connected to a water heater.

**Inspection of Water Distribution Tubing:** Installed piping must be pressure-tested and inspected as required by IPC Section 312, IRC Section P2503.7 or IAPMO UPC Sections 103.5 and 609.4.

**Radiant Heating Systems:** The tubing must be pressure-tested for leaks before installation of the cover, as noted in IRC Section M2103.4, IMC Section 1208 or IAPMO UMC Section 1207, as applicable. The leak test must be witnessed by the code official.

Clearance from heat-producing equipment must be in accordance with IFGC Section 503.7.8, IRC Section M1306 or IAPMO UMC Section 802.10.5, as applicable.

**Models:** **Tubing:** REHAU tubing products are manufactured from cross linked polyethylene (PEX) materials.

RAUPEX tube is white.

O<sub>2</sub> Barrier is similar to RAUPEX but has an added red-colored oxygen barrier coating.

RAUPEX UV SHIELD is similar to RAUPEX but has an added white-, red- or blue-colored polyethylene coating.

The tube is available in  $\frac{3}{8}$ -,  $\frac{1}{2}$ -,  $\frac{5}{8}$ -,  $\frac{3}{4}$ -, 1-,  $1\frac{1}{4}$ -,  $1\frac{1}{2}$ - and 2-inch (10, 13, 16, 19, 25, 32, 38 and 51 mm) nominal diameter sizes, and in coils 100, 300, 500 and 1000 feet (30.4, 91.4, 152.4 and 304.8 m) long, or in straight lengths 20 feet (6.2 m) long. REHAU tube and fitting products 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 REHAU tube sizes.

**Fittings:**

Two REHAU brass compression fitting types are utilized: compression sleeve fittings and compression nut fittings.

The permanent compression sleeve fittings, identified as EVERLOC, are used to join tubes for couplings, elbows, tees and adapters, and consist of fittings and sleeves. The compression sleeve fitting requires proprietary equipment for installation.

Compression nut fittings are used for adapters and to connect tubing to manifolds, and consist of an insert, a split brass compression ring and a compression nut.

When used with RAUPEX tubing and when installed in accordance with this listing, the REHAU compression fittings described above comply with ASTM F 877. The compression fittings are illustrated in Figure 1.

**Conditions of Listing:**

1. Details on the design and installation of the heating system must be submitted to the code official for approval.

2. During placement of cover over the tubing, the tube must be maintained at the greater of  $1\frac{1}{2}$  times the working pressure or 100 psi (689.4 kPa).
3. The tubing installation must be pressure-tested for leaks in the presence of the code official or the code official's designated representative.
4. When installation is in fire-resistance-rated assemblies, evidence of compliance with IBC Section 713 (penetrations), UBC Section 709 (walls and partitions) or UBC Section 710 (floor/ceiling or roof/ceiling), as applicable, 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. The minimum cold bending radius is six times the outside tube diameter for cold-bent tube and three times the outside diameter for hot-bent 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 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 or UBC Section 1906.3, as applicable.
10. REHAU 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.
11. The tubing is manufactured by REHAU in Viechtach, Germany and Cullman, Alabama. The fittings are manufactured for REHAU in Roncadelle, Italy; Weyers Cave, Virginia; Frankfort, Illinois; and Marshall, Michigan, under a quality control program with inspections by NSF International (AA-633).

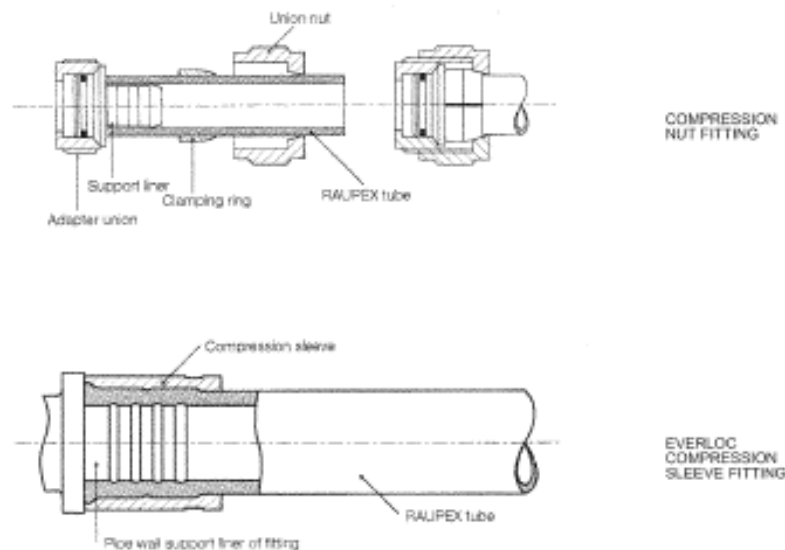


FIGURE 1—REHAU FITTINGS