

SEATTLE / KING COUNTY PUBLIC HEALTH
Community Environmental Health
Plumbing / Gas Piping Inspections

**DECISIONS / INTERPRETATIONS
of the Chief Plumbing Inspector**

Date: January 6, 2009

Decision No. 04-015
REVISED

Subject: Hydronic Piping in Concrete Slabs

Code / Section: 2003 UPC Section 313.12

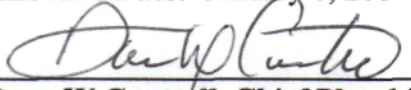
Decision. Cross-linked polyethylene piping and tubing systems (PEX) may be installed within a concrete slab for the purpose of hydronic heating (radiant floor heat) when first approved by the manufacturer.

Background. Typical installations of hydronic systems in a concrete slab floor will require that the piping or tubing be placed within the concrete on top of the wire mesh which rests on the vapor barrier above the compacted soil. This is consistent with the 2003 International Mechanical Code, Chapter 12 and the 2003 International Residential Code, Chapter 21. (Note specifically Section M2104.2, Item #1 of the IRC.) While the UPC does restrict the embedding of plumbing *piping* in concrete, it does not specifically restrict the embedding of *tubing*. PEX piping and tubing is resistant to certain solvents that may affect other materials. It can be produced by several different manufacturing processes, each yielding piping or tubing complying with the referenced standards, yet each with unique characteristics. Thus, manufacturer's specifications shall apply. Manufacturer's specifications shall also apply to other types of piping or tubing materials to be embedded in concrete.

Please note that the IRC Section M2103.3 requires a minimum 100 psi pressure test of the tubing system to be held for at least 30 minutes. Non-floor type hydronic systems require the 100 psi test for 15 minutes per the IRC Section M2101.10.

Seattle/King County Public Health requires a permit and inspection for potable (flow-through-open) hydronic piping or tubing systems. The cost shall be \$10.00 per zone. Non-potable (closed) systems fall under the provisions of the mechanical codes and are thus subject to the permit and inspection processes of Seattle DPD or King County DDES.

Effective Date: January 6, 2009


Dave W Cantrell, Chief Plumbing Inspector