



Division 238300

Radiant Heating Units

DESIGN GUIDE

1 General

1.1 General

- A. Reserved for future content.

2 Materials

2.1 Indoor Radiant Slabs

- A. When slabs are heated and/or cooled, utilize PEX A piping rated at 100 psig minimum gauge pressure at 180 degrees F.
- B. Design zone circuits to eliminate or minimize fittings imbedded in slab or below grade by utilization of piping shipped in 300 foot rolls.
- C. Provide with factory approved tie-down systems.
- D. Each circuit of the zone shall be provide with a balance and flow shut-off device and air bleeding device.
- E. Design in control safeties to prevent operation in event temperatures exceed pipe temperature/ pressure ratings.
- F. Do not utilize except in large common areas due to lack of flexibility for zoning revisions or penetration of slab as partition walls are moved.
- G. Coordinate with structural engineer for slab expansion and contraction.



2.2 Outdoor Radiant Slabs

- A. The campus does not have and does not desire snowmelting systems due to increased energy and construction cost. Snow melt is typically handled at outside entrances with shovels and brooms and mechanical snow removal equipment for main walkways and campus malls.

3 Execution

3.1 General

- A. Hydrostatically pressure test and clean and flush and disinfect piping prior to connection to campus utility (or existing connections in buildings).
- B. Air test piping to 100 psi or 1.5 times the maximum working pressure (whichever is greater) for thirty minutes. As the piping expands, restore pressure, first at ten (10) minutes into the test and again at twenty (20) minutes. At the end of the thirty (30) minute preliminary test, pressure must not fall by more than 5 psig (56 kPa) from the maximum.
- C. After the air test, perform the hydrostatic test immediately for a minimum of 2 hours. The test pressure should be restored and not fall more than 3 psig after 2 hours. No leakage shall be detected.
- D. Test in the presence of the Owner's representative. Provide copies of test to the Owner's representative and include in the O&M manual.
- E. After completion, fill, clean, and treat systems. Refer to Section 232500.
- F. Install piping, valves and equipment in accordance with the manufacturer's requirements.

3.2 Installation

- A. Install in conformance with the manufacturer's requirements.
- B. Provide pipe protection where pipe bends penetrate the slab.



- C. Maintain dimensional locations of imbedded tubing in the slab in the Record Drawings for consideration with future renovations.

4 Appendix

4.1 Reserved for future content.

