

**SECTION 15772 - RADIANT HEATING PIPING**

**PART 1 - GENERAL**

**SUMMARY**

This Section includes radiant heating piping, including pipes, manifolds, fittings, and piping specialties.

See Division 15 Section "Hydronic Piping" for pipes and connections to hydronic systems.

**SUBMITTALS**

Product Data: Radiant heating piping specialties, including rated capacities and water flow and pressure drops of selected models.

Shop Drawings: Show piping layout and details drawn to scale, including valves, manifolds, controls, and support assemblies and their attachments to the building structure.

Operation and maintenance data.

**COORDINATION**

Coordinate layout and installation of radiant heating piping and suspension system with building and structural components.

Coordinate size and location of access panels to allow access to manifolds concealed in ceilings, walls, and floors.

Coordinate thickening of slabs where required for adequate encasement of radiant heating piping components.

Revise locations and elevations from those indicated as required to suit field conditions and ensure integrity of piping and as approved by Architect.

**PART 2 - PRODUCTS**

**MANUFACTURERS**

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Distribution Manifolds:

Heatlink USA Inc.  
Heatway, Inc.  
Hume Snow Melting Systems, Inc.  
Infloor Heating Systems.  
Rehau Inc.  
Tekmar Control Systems, Ltd.

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Vanguard Plastics, Inc.  
Wirsbo Co.

Mixing Valves:

Heatlink USA Inc.  
Infloor Heating Systems.  
Rehau Inc.  
Wirsbo Co.

Controls:

Heatlink USA Inc.  
Hume Snow Melting Systems, Inc.  
Infloor Heating Systems.  
Tekmar Control Systems, Ltd.  
Wirsbo Co.

Thermostats:

Heatlink USA Inc.  
Infloor Heating Systems.  
Rehau Inc.  
Tekmar Control Systems, Ltd.  
Wirsbo Co.

HEAT-TRANSFER PIPES AND FITTINGS

PEX Plastic: ASTM F 876.

Fittings: ASTM F 1807, copper or brass compression type.

Single-Tube Rubber Hose: Braided-fiber-reinforced, EPDM elastomeric with extra carbon steel with high-temperature, oxygen-barrier cover; for service at **100 psig (690 kPa)** and **210 deg F (99 deg C)**.

Fittings: ASTM F 1807, copper with stainless-steel crimps or clamps.

PIPING SPECIALTIES

Radiant-Pipe Mounting Tracks: Aluminum, with pipe supports permitting pipe spacing at **2-inch (50-mm)** intervals.

RADIANT HEATING SPECIALTIES

Distribution Manifolds: Brass, copper or plastic modular design with four-way mixing valve, main shutoff and balancing valves with thermometers, zone shutoff and balancing valves with flow meter, and identification plate.

Mixing Valves: **125 psig (862 kPa), 230 deg F (110 deg C)** maximum operating pressure and temperature, brass or cast-bronze body, EPDM seals, and threaded connections.

Identification Plate: Valve plate shall identify room served and loop number.

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If more than one loop serves a room, provide identification plates on manifolds to identify rooms served.

CONTROLS

Thermostats: 32 to 160 deg F (0 to 71 deg C), 3 position, 24 V for day and night setback and clock program.

Radiant Heating Control Sequence: Flow-through radiant heating piping is modulated to satisfy space thermostat.

PART 3 - EXECUTION

HEAT-TRANSFER PIPING INSTALLATION

Install piping downstream from manifolds without joints.

Secure piping in concrete floors by attaching pipes to concrete reinforcement using plastic tie straps.

Install a sleeve of foam-type insulation around tubing and extending for a minimum of 3 inches (75 mm) on each side of the slab penetration to protect the tubing passing through expansion joints.

Install manifolds in accessible locations.

Fill system with 50 percent of propylene glycol-to-water solution.

FIELD QUALITY CONTROL

Test Preparation:

Temporarily restrain expansion joints so they are not damaged due to test pressure. If temporary restraints are impractical, isolate expansion joints from testing.

Flush with clean water, and clean strainers.

Install relief valve set at a pressure no more than one-third higher than test pressure.

Tests:

Subject piping to hydrostatic test pressure that is not less than 1.5 times the design pressure but not more than 100 psig (690 kPa).

After hydrostatic test pressure has been applied, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.

Prepare a written report of testing.

END OF SECTION 15772