

Uponor

The World's First and Most Widely Used PEX System

Uponor's durable crosslinked polyethylene (PEX) tubing has a long history in heating and plumbing applications. Uponor's Wirsbo AQUAPEX® tubing started in the residential markets, but has quickly moved to the commercial arena. Now, more and more builders, architects and engineers are choosing Wirsbo AQUAPEX in high-rise residential applications. Its speed of installation coupled with its strength and durability makes Wirsbo AQUAPEX the preferred material for specifying plumbing engineers.



Tube-in-tube application for a potable water system embedded in the concrete pour

Over 35 Years of Proven Reliability

Uponor PEX (formerly Wirsbo) first entered the European heating market in 1971. During the following year, it was introduced for domestic plumbing systems. Twenty years later, the state of Michigan approved Wirsbo AQUAPEX, making it the first state in North America to use PEX tubing for potable water plumbing systems. In 1993, the Building Officials Conference of America (BOCA) listed ASTM F876 PEX in their model code. Since then, all U.S. model codes have listings for PEX in hot and cold potable water distribution systems.

Uponor was the first PEX manufacturer to actively pursue and gain PEX listings for domestic water systems. With more than 2 billion feet of Uponor PEX tubing in service in North America alone, and over 12 billion feet installed worldwide, Uponor continues to be the leading force in PEX systems.



Uponor plumbing system in Lanikea, Honolulu



Residential high-rise condos in Vancouver, BC, with Wirsbo AQUAPEX tubing



A contractor uses an expander tool to make an Uponor ProPEX® fitting during the installation of a turf conditioning system at a professional soccer team's new stadium (Chicago Fire).

Hydronic Turf Conditioning

Uponor was the first PEX manufacturer to provide hydronic turf conditioning systems to the National Football League (NFL) as well as soccer fields in Europe. With turf conditioning systems installed in several sporting fields, Uponor has the knowledge and proven track performance

to assist project engineers with heating, and now cooling, natural grass fields.

In turf conditioning systems, the heart of the system supports the root bulb temperature of the plant. Optimum root temperature allows the plant to recover

from play damage and promotes growth, providing a longer playing season and a better surface for players.

Snow and Ice Melting

Snow and ice melting has become an important tool in the design engineer's arsenal. Safety is the single most important function for snow and ice melting systems, which offer customers a safe and

clean environment and alleviate liability concerns for business owners. In fact, an Uponor snow and ice melting system can help business owners comply with the Americans with Disabilities Act (ADA) requiring safe and easy public access.

Furthermore, some snow and ice melting system designs can use waste heat from within the structure to efficiently melt the snow or ice surrounding a building. This helps the design professionals meet their goal of providing safety with efficient use of energy.

Uponor's snow and ice melting systems are ideal for areas that are small, confined or otherwise difficult to remove snow and ice, including stairs, sloping sidewalks, slanted loading docks and parking ramps.



Operation photo from a ski resort in Park City, Utah



Installation photo from a ski resort in Park City, Utah

Hydronic Radiant Floor Heating and Cooling Systems

Uponor is the undisputed leader in radiant heating technology, and is quickly leading the future of radiant cooling for commercial applications as well. Radiant cooling allows the design engineer to reduce the project's air conditioning loads by absorbing a portion of the sensible and solar loads through PEX tubing embedded in the concrete floors or walls.

In a radiant cooling system, chilled water circulates through the PEX tubing to remove heat energy within the structure. As a passive system, radiant cooling uses off-peak electric power at night to lower the load within the structure. Passive systems are a great benefit, offering savings to the building owner without sacrificing occupants' comfort.

Additionally, building owners can use a radiant system year round, providing both radiant heating and radiant cooling as the seasonal climate dictates.

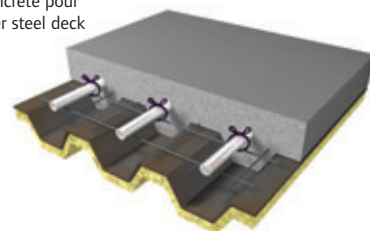
And as always, Uponor continues to offer reliable application design support to the project engineer for radiant heating and radiant cooling systems.



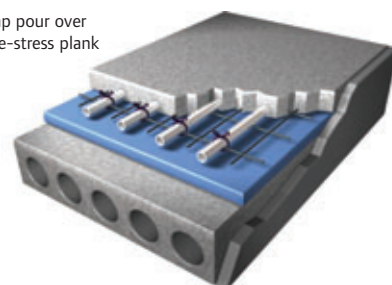
Guests appreciate the comfort of radiant floor heating and cooling at the Hunter Museum in Chattanooga, Tenn.

Uponor

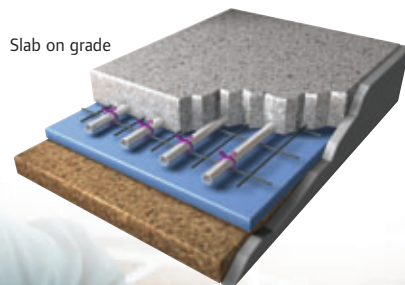
Concrete pour over steel deck



Cap pour over pre-stress plank



Slab on grade



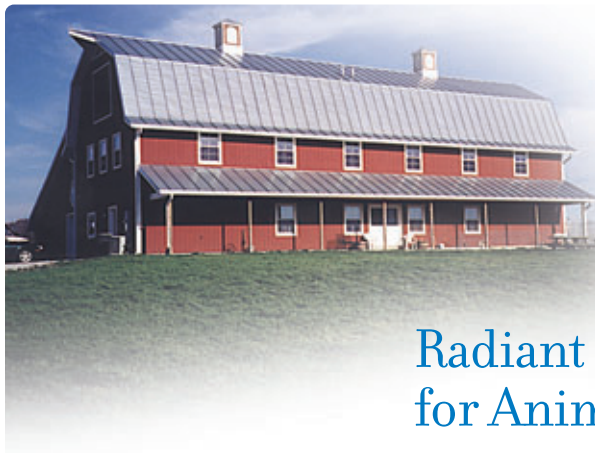
Permafrost Prevention Systems

Uponor's hydronic permafrost system provides frost protection beneath freezer plants. This system uses PEX tubing embedded in the soil under the freezer's slab insulation. Waste heat from compressors transfers through a heat exchanger to the permafrost system. In this type of system, the owner pays for the pumps to circulate the fluid through the permafrost system, and waste heat comes from the compressors for the freezer. Often, this efficient system requires no other heat source, making it extremely appealing from an energy-savings standpoint.

Without a permafrost system below a freezer floor, the soil below can freeze and cause pressure on the floor. This can result in the floor heaving, which requires expensive repairs.



PEX tubing ready for backfill covering in a new cold storage facility



Radiant Floor Heating for Animal Habitats



Elephants benefit from radiant heat at the zoo.

An Uponor radiant floor heating system creates a perfect habitat for animals. The ability to create multiple zones within the radiant heating system

provides comfort similar to the animals' native environment. Whether used in cattle and horse barns, zoos, dog kennels or outdoor habitat reconstructions, radiant floor heating is the most effective way to meet the unique needs of any animal.



PEX tubing installed with mesh over insulation



A Komono Dragon enjoys radiant heat at the Minnesota Zoo.

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