

uponor



Hydronic systems portfolio

Uponor hydronic systems



PEX beats copper

With more than 40 years of proven performance and 17 billion feet of Uponor PEX installed worldwide, Uponor is the professionals' choice for commercial hydronic piping and radiant heating and cooling applications. With a longer system

performance life, lower material costs than copper and a connection method that is both trusted and proven to decrease installation time, it's easy to see why customers are saying no to copper and yes to Uponor PEX for their commercial projects.



ProPEX[®] connections are the only system that gets stronger over time.

Lightweight
and easier to handle



More stable
material costs

Uponor hydronic systems

Uponor PEX pipe and the ProPEX® expansion fitting system deliver high quality and performance for hydronic-based heating and cooling applications. And when the time comes to start your project, Uponor offers unmatched support that no other PEX manufacturer in the industry provides. Which means from initial design to construction to completion, and throughout our 25-year warranty, Uponor is with you every step of the way.

The Uponor system advantage

- Most tested and third-party listed PEX in the industry
- 25-year system warranty on Uponor PEX pipe and ProPEX fittings
- Comprehensive field training for the installer
- Engineering resources including BIM, CAD, specifications and submittals
- Team of in-house professional designers and project managers
- Established nationwide distribution as well as local and regional support
- Comprehensive list of fire-resistive assembly ratings

Over **17 billion feet**
of Uponor PEX installed,
which equals 130 trips around the Earth



100-year life expectancy

25-year system warranty



Uponor PEX pipe

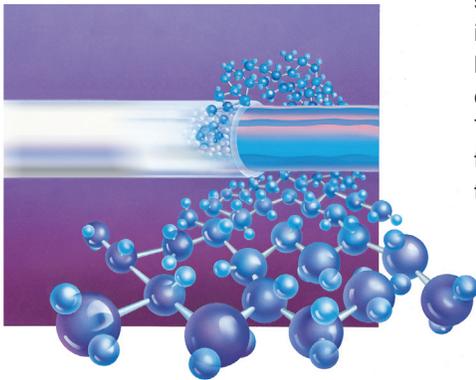
The professional's choice

The core of Uponor systems features PEX pipe, which is quickly becoming the product of choice over copper for hydronic piping systems due to its longevity and its ability to resist corrosion, pitting and scaling.

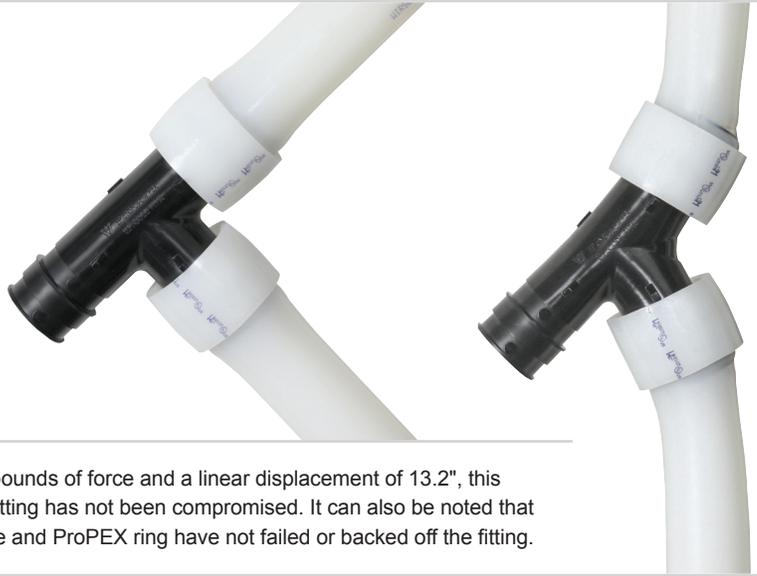
The Uponor PEX manufacturing method uniformly bonds carbon atoms to one another throughout the pipe wall, giving the pipe its inherent ability to always return to its original shape.

This "shape memory" of the pipe allows for larger-internal-diameter ProPEX expansion fittings — the only PEX fitting system that actually gets stronger over time.

And because of the manufacturing process, Uponor PEX also offers thermal memory, which means any kinks in the pipe can quickly be repaired with a simple shot of heat from a heat gun (you can't do that with just any PEX pipe).



The molecular structure of Uponor PEX highlighting the carbon-to-carbon bonds



With 3,000 pounds of force and a linear displacement of 13.2", this 2" ProPEX fitting has not been compromised. It can also be noted that the PEX pipe and ProPEX ring have not failed or backed off the fitting.

Oxygen diffusion

Oxygen in an HVAC system can cause corrosion problems. All non-metallic (plastic or rubber) pipe is permeable to the passage of dissolved oxygen molecules through its walls. Permeability allows these dissolved oxygen molecules to enter an otherwise closed hydronic system. To alleviate this potential issue, Uponor manufactures Wirsbo hePEX™ which includes an oxygen-diffusion barrier built into the pipe. This barrier limits oxygen diffusion to levels below DIN 4726, ensuring the integrity of any metallic components.

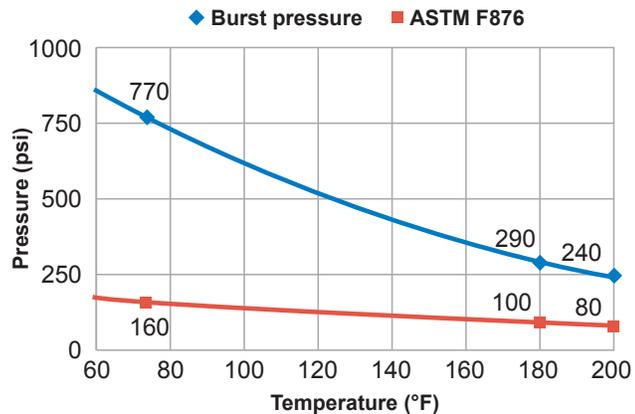
Chemical resistance

Crosslinked polyethylene offers enhanced resistance to chemical-dissolving agents. The unique molecular structure is stable, inert and unaffected by chemicals commonly found in most commercial HVAC systems.

For specific questions about chemical resistance, contact Uponor Technical Services at:

- 888.594.7726 (U.S.)
- 888.994.7726 (Canada)

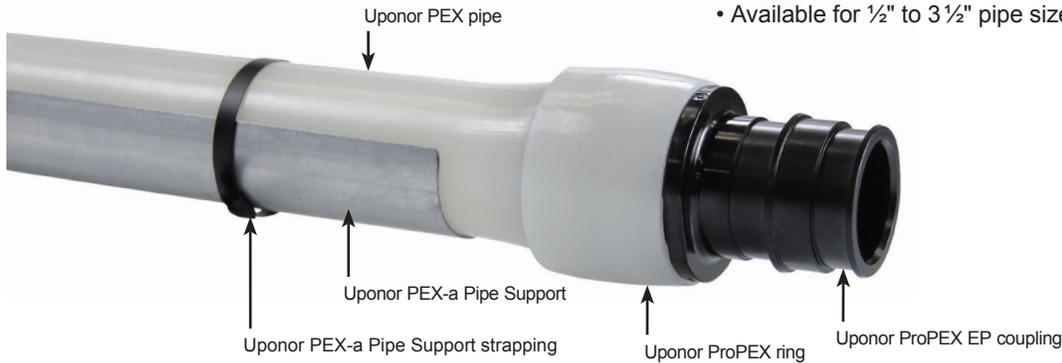
Uponor PEX burst pressure vs. ASTM F876



ProPEX fittings

Uponor PEX-a Pipe Support

PEX-a Pipe Support provides continuous support of Uponor PEX pipe for hydronic piping applications.



- Enables hanger spacing similar to that of copper
- Listed for bare-PEX plenum applications (ASTM E84/S102.2)
- Easily insulated around both pipe and PEX-a Pipe Support
- Controls PEX expansion rates to be similar to copper
- Available for 1/2" to 3 1/2" pipe sizes

The only PEX fitting system that gets stronger over time

Coupling Uponor PEX with ProPEX fittings is an ideal solution for replacing copper in hydronic piping applications. ProPEX fittings offer a high level of differentiation versus other PEX fittings, and also provide more value compared to traditional copper press and sweat fittings. The elastic memory of Uponor PEX allows the pipe to be expanded and the fitting to be inserted before the pipe returns to its natural shape, which creates a strong connection that holds tight up to 1,500psi.

The Uponor ProPEX fittings advantage

- Simple, fast, reliable visual connection in sizes up to 3"
- Cannot be dry fit, eliminating blow-off leaks
- No torches, glues, solder, calibration or flux
- Fitting and connection is the strongest part of the system
- 70% greater flow at similar pressure versus other PEX fittings
- Fitting burst pressures in excess of 3,000psi
- Broad offering of transition fittings

ProPEX engineered polymer (EP) fittings



ProPEX brass fittings and valves



Hydronic piping applications

Wirsbo hePEX pipe

Wirsbo hePEX oxygen-barrier pipe is manufactured for chilled water and heating hot water distribution. It is a very durable, cost-effective solution for transporting water to a variety of terminal units.

- Reheat coils
- Fan coils
- Baseboard radiators
- Heat pumps
- Chilled beams



Case studies



Washington State University Clean Technology Laboratory

Pullman, Wash.

Project: \$52.8 million interdisciplinary clean technology laboratory intended to help address a variety of global and environmental challenges

Size: 96,000 square feet

Owner: Washington State University

General contractor: Skanska Construction

Mechanical contractor: University Mechanical

Engineer: PAE | Seattle, Wash.

Features

- Uponor hydronic piping system
- Uponor domestic water system
- Coordinated and pre-fabricated construction



JW Marriott Mall of America

Bloomington, Minn.

Project: 15 floors, 332 rooms and 19,500 square feet of meeting space

Owner: Marriott Corporation

General contractor: Mortenson

Mechanical contractor: Metropolitan Mechanical Contractors, Inc. (MMC)

Features

- Uponor hydronic piping system
- Uponor domestic water system
- Uponor snow and ice melting system



Ecoflex® pre-insulated piping systems



The ideal underground pre-insulated solution

Going underground with your hydronic piping system? Look to Uponor's Ecoflex® pre-insulated pipe system for labor and energy savings. It features Uponor PEX piping encased in a multilayer, polyethylene-based foam insulation, then covered with a flexible, watertight, corrugated, high-density polyethylene (HDPE) jacket.

The Ecoflex advantage

- 60% less installation time compared to a rigid system
- Flexible and lightweight
- Eliminates the need for straight or level trenches
- No expansion loops necessary
- Snakes around obstacles
- Fewer (or no) underground connections
- Continuous runs
- No welders or robust tooling required
- System longevity
- Available in 3/4" to 4" PEX service pipe sizes



Radiant heating/cooling and snow melting

Uponor is the first and best at radiant

Uponor (formerly Wirsbo) was the first company to bring radiant floor heating with PEX to North America more than 40 years ago. Today we are the leader in radiant heating and cooling for residential and commercial applications.

Uponor radiant advantage

- 30% energy efficiency (over other HVAC solutions) when paired with a DOAS system
- Radiant cooling a key component of any high-performance, LEED®, or net-zero building
- Thermal comfort is second to none, which boosts occupant efficiency and wellbeing
- Uponor PEX and ProPEX fittings have the characteristics to maximize installation efficiency
 - Highest pressure and temperature ratings
 - Kink repairable, freeze-resistant pipe
 - Embeddable ASTM F1960 ProPEX EP fitting options
- Snow and ice melt and turf conditioning solutions
- Mechanical installer assistance and training
- Performance specification assistance
- In-house industry-leading design experts available to streamline the design process



Industrial/factory installation

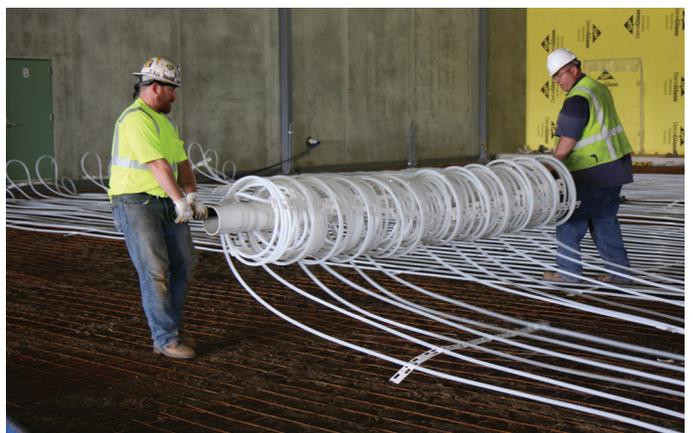


Radiant Rollout™ Mat advantage

- More than 50% labor savings over traditional installation methods
- 60% to 80% fewer manifold loops
- Reduces manifold cabinets and locations
- Custom designed to speed installation and commissioning
- 25-year warranty on the Uponor PEX pipe and ProPEX fittings



Retrofit museum installation



Industrial/factory installation

Technical resources

Uponorengineering.com

The Uponor engineering resource center is your single destination for designing and creating a desirable, cost-effective and energy-efficient structure. This portal is designed specifically for contractors and engineers.

Whether it's meeting specific LEED or other green-building certification standards or incorporating value engineering into a project, Uponor can provide all the tools and resources needed for a successful and efficient build.

Building information modeling (BIM)

Uponor offers an on-demand library of BIM files and CAD details on uponorengineering.com. Professionals can access hundreds of Uponor product parts in 32 available file formats to quickly and accurately design and estimate a project.

Specifications

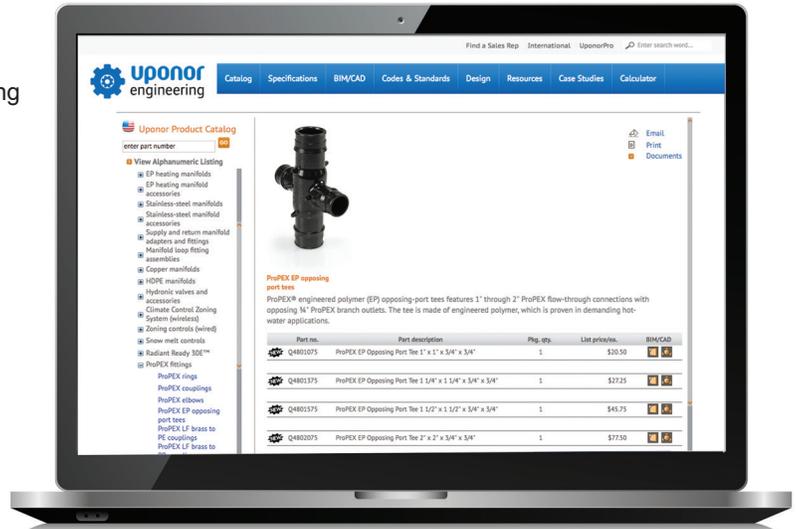
Uponor specifications for commercial plumbing, radiant heating/cooling and hydronic piping are available from the following websites.

- Uponorengineering.com
- Arcat.com
- ProductMasterSpec.com
- Specagent.com

Uponor also assists in custom specification writing solutions for customers, highlighting and calling out notes and changes for easy implementation.

Mechanical installer resources

- Pre-construction meeting with Uponor field support
- Jobsite training and audits to ensure ease of installation and quality control
- Factory and online training also available



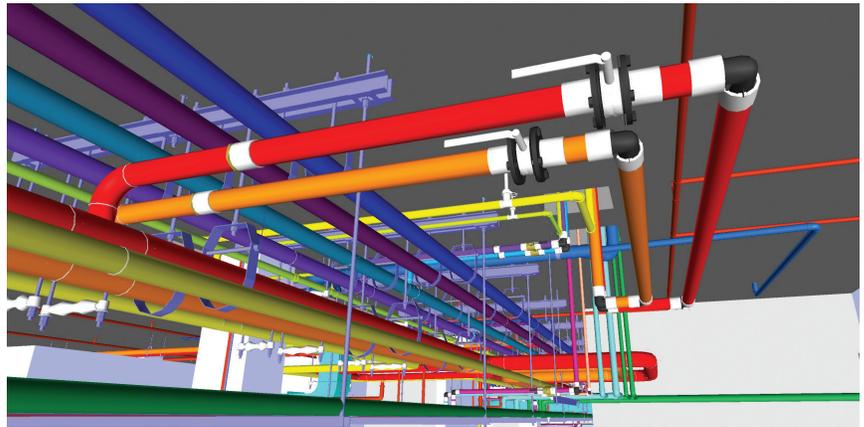
Technical resources

Integrated product data software solutions

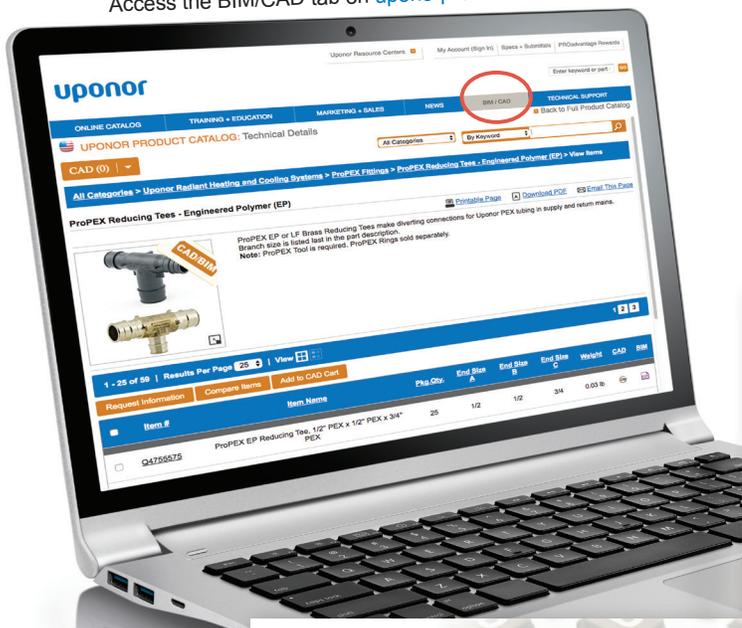
Uponor offers industry-leading CAD and BIM-aligned content for specifying and designing your next radiant heating/cooling and hydronic piping project.

Get Uponor product data in the right formats and in the right places to quickly and accurately design your PEX project.

- Uponor-hosted and maintained content
- Build your list of products and specify file types for download
- Revit® MEP start-up templates available



Access the BIM/CAD tab on uponorpro.com.



Supported CAD platforms

- AutoCAD®
- Trimble®
- PipeDesigner 3D®
- Pro/ENGINEER®
- Catia
- SolidWorks
- Solid Edge

BIM platforms

- Revit MEP
- AutoCAD® MEP
- Fabrication CADmep™
- Building-Data.net/TSI
- Bentley®

To download files, visit uponorpro.com.

uponor Pipe Sizing Calculator

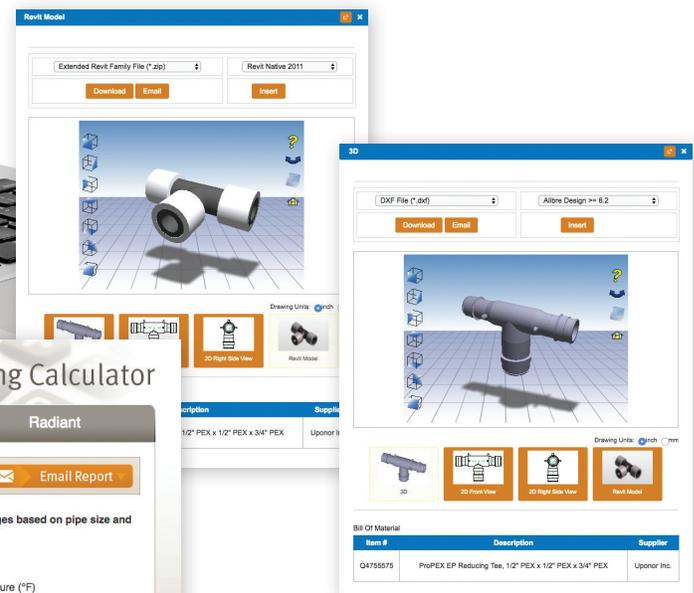
Plumbing **Hydronic** Radiant

For each calculator, provide the criteria and then click calculate. [Email Report](#)

Enter your distribution system parameters for each column to generate GPM flow ranges based on pipe size and input parameters:

Water Temp 1	Water Temp 2	Water Temp 3	Water Temp 4	
160	140	42	53	Water Temperature (°F)
1.5	1.5	1.5	1.5	Min. Velocity (ft./sec.)
8	8	8	8	Max. Velocity (ft./sec.)
4	4	4	4	Maximum Head Loss Per 100 Ft. of Pipe (ft.)
0%	0%	0%	0%	Glycol Mixture (%)

[Calculate](#)



Access the PEX pipe sizing calculator on uponorpro.com/calculator.

Design services

We are the PEX design experts

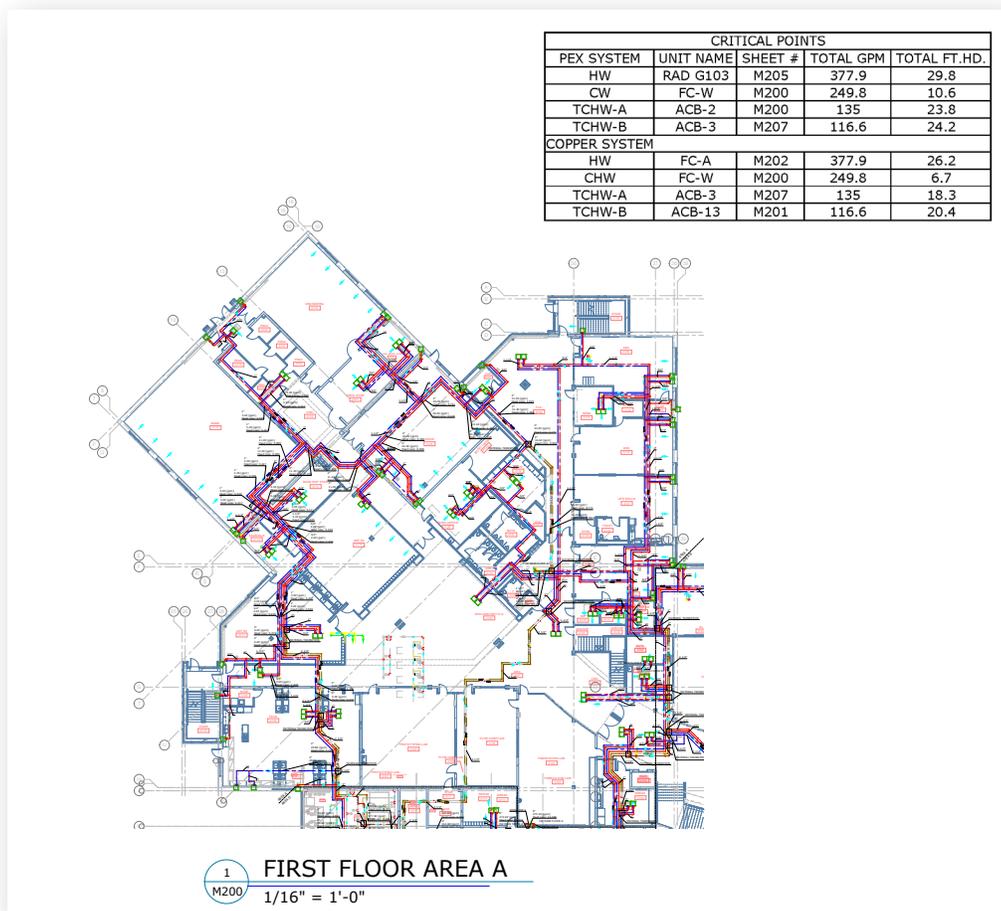
Providing the industry with PEX design support since 1994, Uponor Design Services is a dedicated team of experienced design professionals and project managers trained in commercial PEX applications for plumbing, radiant heating/cooling and hydronic piping systems.

Uponor's design staff of 30+ professionals specializes in PEX system design, employing best installation practices while optimizing piping layout and sizing procedures to meet the demanding needs of code requirements and industry standards.

Uponor design advantage

- Proven track record since 1994
- Experienced staff of design professionals; industry-affiliated and certified (AFSA, ASHRAE, ASPE, NFPA, NFSA, NICET, RPA)
- Experts specializing in PEX system design and material take-offs
- Client/designer relationships
- Improved pipe sizing using unique properties of Uponor PEX systems

- Personalized project consultants for tailored support based on project phase
- Broad suite of services from concept to construction
- Estimates with labor data
- Efficient piping layouts using Uponor Logic design concepts
- Engineering calculation package for easy approval
- CAD/BIM content managed and hosted by Uponor
- On-demand CAD/BIM model generation via Navigator on uponorengineering.com



Hydronic piping design

Design services

Uponor hydronic piping design services

Uponor hydronic piping design services employs best engineering practices to analyze a mechanical design of a 2- or 4-pipe rigid pipe system to establish system parameters such as head loss, flow rates and the system's critical path. The project is then transitioned to an Uponor PEX system and pipe sizing is optimized to match the previously determined system parameters — providing the client with a complete set of PEX piping plans and bill of materials that can easily replace the engineer's rigid pipe design without affecting any other system components or equipment.

The Uponor hydronic piping design advantage

- Improved system performance
- More hydraulically balanced circuits
- Reducing branch pipe sizes, decreasing system volume

When it's time to move forward on a project, clients can feel confident with Uponor's comprehensive engineering resource support — from factory and online training to CAD files for BIM support to specifications and submittals — Uponor has all the information and support needed for a successful project from beginning to completion.

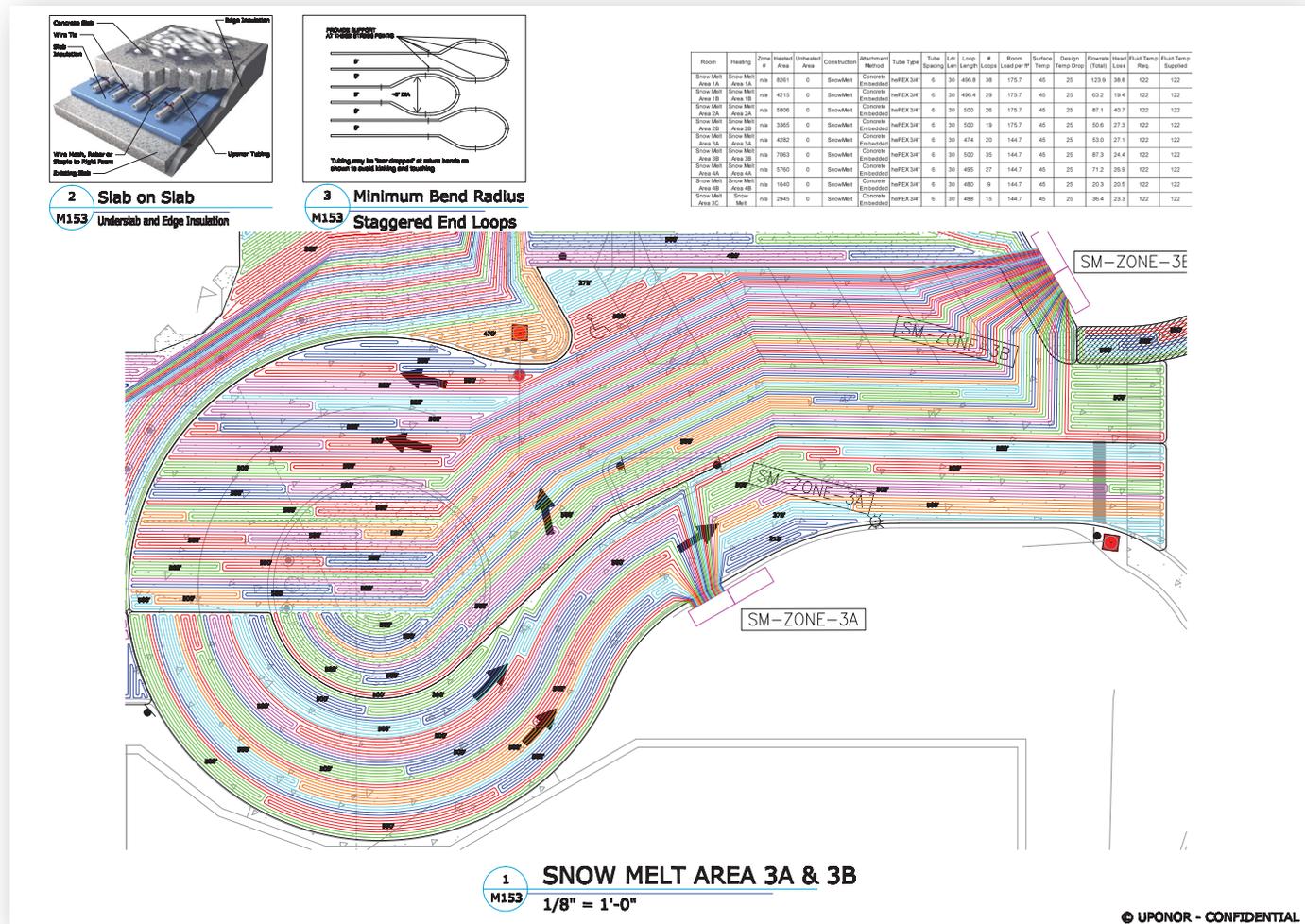
Contact us to get started today.

U.S.

888.594.7726
design.services@uponor.com

Canada

888.994.7726
design.ca@uponor.com



Uponor hydronic systems

Note: This list represents a small sample of projects completed in 2015 and 2016.

Project	City	State	Project	City	State
1640 Baltimore Avenue	Kansas City	MO	Embassy Suites	Boulder	CO
171 Buckthorn Drive	Baden	PA	Enatai Elementary School	Bellevue	WA
534 Albert Street Apartments	Strathroy	ON	Erie Elementary School	Erie	CO
725 Marine Drive Apartments	North Vancouver	BC	Federal Home Loan Bank Headquarters	Topeka	KS
80 Point Rotary Dairy	Nampa	ID	First Look Media	San Francisco	CA
Acura Dealership	Toronto	ON	Foothill-DeAnza Community College	Sunnyvale	CA
Aircraft Maintenance Instructional Bldg	Anncville	PA	Fort Dodge Community School District	Fort Dodge	IA
Allanivik Hotel	Bethel	AK	Fort Douglas Military Museum	Salt Lake City	UT
Amherst College Science Center	Amherst	MA	Foster Library	Tukwila	WA
Amway Hangar	Grand Rapids	MI	Fremont Townhomes Lot 10	Port Coquitlam	BC
Anchor Bank Building	Madison	WI	Fremont Townhomes Lot 7	Port Coquitlam	BC
Areté Kirkland	Kirkland	WA	Fulton State Hospital	Fulton	MO
ARIA	Vancouver	BC	Gallatin Field Ramp Hangars	Belgrade	MT
Baxter Toyota-Scion of Lincoln	Lincoln	NE	Genentech Community	San Francisco	CA
Bearizona Wildlife Park	Williams	AZ	Gentex North Riley Campus	Holland	MI
Bennett Town Hall & Fire Station	Bennett	CO	Great Enlightenment Buddhist Society Dormitory and Classroom	Charlottetown	PE
Boxotel Apartments	Montreal	QC	Great-West Financial	Greenwood Village	CO
BYU – Idaho Hinckley Center	Rexburg	ID	Guildwood GO Station	Scarborough	ON
Calvary Church	Grand Rapids	MI	Hamilton Port Authority	Hamilton	ON
Cambria Park Apartments and Townhomes	Vancouver	BC	Hayward Library	Hayward	CA
Canada Science & Technology Museum	Ottawa	ON	Health Pointe	Grand Haven	MI
Cascade Beach, LLC	Reno	NV	Henry Trust Project	Branson	MO
Cates Landing by Polygon	North Vancouver	BC	Heritage Towers Park	Edmonton	AB
Chateau at the Village	South Lake Tahoe	CA	Holiday Inn Montreal	Montreal	QC
Clatsop Community College	Astoria	OR	Holland Board of Public Works Energy Park	Holland	MI
City of Louisville City Service Facility	Louisville	KY	Indiana Farm Bureau Insurance	Indianapolis	IN
City of Marquette Public Works Municipal Center University	Marquette	MI	Indiana University	Bloomington	IN
Clemson University Douthit Hills East Zone	Clemson	SC	Institute for Contemporary Art	Richmond	VA
Cook Pharmica	Bloomington	IN	James Walk Apartments and Townhomes	Vancouver	BC
Creede Middle/High School	Creede	CO	JFK Center for Performing Arts	Washington	DC
D Condos	Winnipeg	MB	Johnson County Ambulance Facility	Iowa City	IA
Daimler Trucks North America	Portland	OR	Joint-use School – Evergreen	Saskatoon	SK
Dayton Metro Library	Dayton	OH	Jorgensen Plaza For Well-Being	Cedar Falls	IA
Deer Park	Steamboat Springs	CO	Jung Hotel	New Orleans	LA
Denver Water – Building 4	Denver	CO	JW Marriott	Bloomington	MN
Dickinson County Maintenance Shop	Milford	IA	Kansas State University West Hall	Manhattan	KS
École South Pointe School	Winnipeg	MB	Kemin Industries Worldwide Headquarters	Des Moines	IA
Elm on 17th	Calgary	AB	Kootenai Health Phase II	Coeur d'Alene	ID
El Paso Regional Communications Center	El Paso	TX	Laketown Elementary School	Waconia	MN

Uponor hydronic systems

Note: This list represents a small sample of projects completed in 2015 and 2016.

Project	City	State
Laurel Water Treatment Plant	Laurel	MT
Le Boisé Notre-Dame (Phase 5)	Notre-Dame	QC
Lift by Porte	Burnaby	BC
Lion	Vail	CO
Luhrs Marriott Residence Inn/Courtyard	Phoenix	AZ
LUX Lawrence	Lawrence	KS
Magnolia Gardens on the Park	Prince George	BC
Marriott Residence Inn	Kansas City	MO
Masters at Copper Creek	Copper Mountain	CO
Maysa Arena	Minot	ND
Mercedes-Benz of Denver	Denver	CO
Mercedes-Benz Trois-Rivières	Trois Rivières	QC
Missoula College	Missoula	MT
Moberly Motor Company	Moberly	MO
Molly Ockett Middle School	Fryeburg	ME
Monterey Bay Academic II Building	Seaside	CA
Moscone West Convention Center	San Francisco	CA
Motorcars Honda	Cleveland	OH
Mountain Equipment Co-op	Toronto	ON
Movati Athletic Barrhaven	Ottawa	ON
NAIT's Centre for Applied Technologies	Edmonton	AB
National Arts Centre	Ottawa	ON
New Central Library	Calgary	AL
Newell Hutterite Colony	Bassano	AB
Noel Manor Retirement Living	Verona	WI
North American Trailer	Inver Grove Heights	MN
Northglenn Justice Center	Northglenn	CO
Northwoods Manufacturing	Kingsford	MI
Nvidia	Santa Clara	CA
Ormidale Block	Vancouver	BC
Ottawa Train Station	Ottawa	ON
Oxford Street Flats	North Vancouver	BC
Paragon Station Condos	Salt Lake City	UT
Peninsula Seniors Village	Surrey	BC
Pier B Project	Duluth	MN
Place Ville Marie	Montreal	QC
Port of Morrow Warehousing	Boardman	OR
Prairie Winds Middle School	Mankato	MN
Provigo Boucherville	Boucherville	QC
The Residence at Quarry Hill	South Burlington	VT

Project	City	State
Radiance in Eaux Claires Condos	Edmonton	AB
Rexburg Water Reclamation	Rexburg	ID
Richmond Redevelopment and Housing Authority	Richmond	VA
River Bluff Education Center	Red Wing	MN
River District Parcel 16.1	Vancouver	BC
River District Parcel 43	Vancouver	BC
Rubey Park Transit Center	Aspen	CO
Rush Truck Center	Cincinnati	OH
Sacred Heart Community School	Regina	SK
Santa Clara Condominiums	Key West	FL
Schneider Electric Company	St. Louis	MO
Seneca College	Toronto	ON
Sequoia Square – Phase III	Saskatoon	SK
Shangri-La Penthouses	Toronto	ON
St. Joseph's Hospital	Thunder Bay	ON
St. Luke's Hospital	Ketchum	ID
St. Thomas Aquinas Seminary Phase III	Dillwyn	VA
Strom Spa Sherbrooke	Sherbrooke	QC
Strom Spa Mont-Saint-Hilaire	Mont-Saint-Hilaire	QC
SynAgri	Chesterville	ON
Taos Slopeside Phase II	Taos	NM
The Charmant Hotel	La Crosse	WI
The Residence at Quarry Hill	South Burlington	VT
The Village at Breckenridge	Breckenridge	CO
United Rehabilitation Services	Dayton	OH
University Corporation for Atmospheric Research	Boulder	CO
University of British Columbia – Site B	Vancouver	BC
VCU Institute for Contemporary Art	Richmond	VA
Veritas by Polygon	Burnaby	BC
Vortex Optics	Middleton	WI
Waiea at Ward Village	Honolulu	HI
Wasilla Public Library	Wasilla	AK
Waukee Center for Advanced Professional Studies	Waukee	IA
Webster County Maintenance Facility	Fort Dodge	IA
West Quay by Polygon	North Vancouver	BC
Western Riverside County Regional Wastewater Authority	Corona	CA
Wilfred Laurier University Grand River Hall	Waterloo	ON
Zinn Mechanical	Medina	OH



Aloft Tulsa Downtown, Tulsa, Okla.
Uponor plumbing and hydronic piping



The Wick Tower, Youngstown, Ohio
Uponor plumbing and hydronic piping



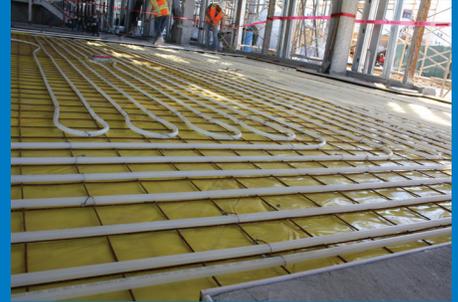
Belmont University, Nashville, Tenn.
Uponor plumbing and hydronic piping



National Renewable Energy Lab, Golden, Colo.
Uponor radiant heating and cooling



The Homestead of Rochester, Rochester, Minn.
Uponor plumbing and hydronic piping



San Diego State University, San Diego, Calif.
Uponor radiant heating and cooling



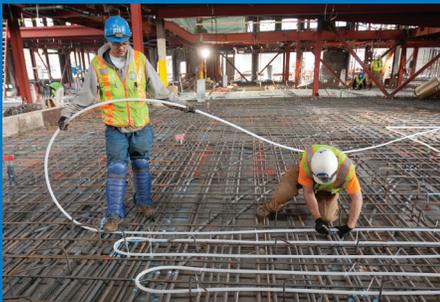
High West Distillery, Park City, Utah
Uponor plumbing and hydronic piping



**Wolf Ridge Environmental Learning Center
Finland, Minn., Ecoflex pre-insulated piping**



George Fox University Dorms, Newberg, Ore.
Uponor hydronic piping



Pier 15 Exploratorium, San Francisco, Calif.
Uponor radiant heating and cooling



Colorado State University, Fort Collins, Colo.
Uponor plumbing and hydronic piping



**UCLA Wasserman Eye Research Center
Los Angeles, Calif., Uponor radiant heating/cooling**

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