

# uponor

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specifications and operating parameters for all  
our Underfloor Heating & Plumbing Systems  
at any time as part of our policy of continuous  
product development.



Independent inspection organisations certify that our products meet the strictest standards.

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# uponor

simply more

# uponor



Utilisation of renewable energy  
with Uponor system solutions

PIPE SYSTEMS FOR BIOMASS

# Make your AD plant even more effective with Uponor Pre-Insulated Pipe Systems

## 2 from 1: energy and heat from one source

When using biogas generated from anaerobic digestion to fuel a co-generation plant, both electricity and heat are created. While the energy can possibly be fed into the local electricity network, making use of Feed in Tariffs (FIT), the heat can be used to heat the fermentation plant as well as buildings throughout the entire farmyard. Uponor pre-insulated pipes which come in lengths of up to 200 meters will make sure the generated heat will reach them in a safe and efficient way, so that heating costs can be reduced to a minimum.

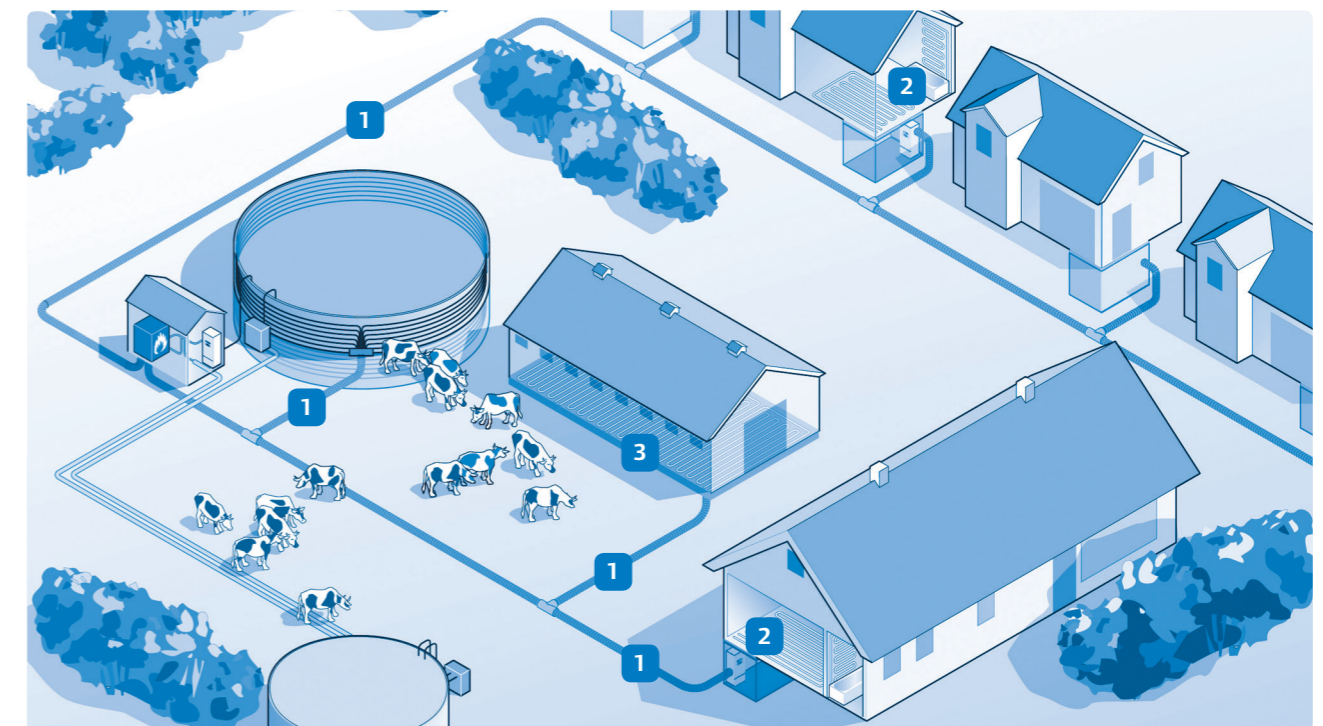
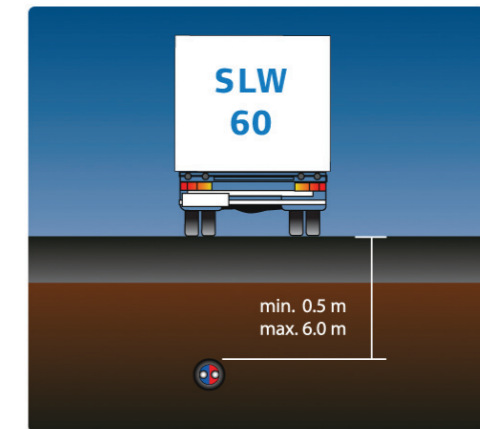
## Uponor: an experienced partner

Pre-insulated pipe systems made by Uponor are reliable, high-quality products, not least proven by over 25 million metres of pipe already installed worldwide. Production processes are under permanent quality control, and technical product data like heat loss is independently confirmed by outside agencies on a regular basis. We do this to make sure our products meet the strictest standards so you can trust the data we provide and know it is a good reflection of actual values. At every stage of your project our team of experienced engineers provide comprehensive support, be it for planning, layout or general project support.

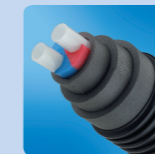
## Uponor pre-insulated pipes for optimal heat utilisation

The installation of Uponor pre-insulated pipes is both time and cost efficient, with pipes being delivered to site already cut to needed lengths, and a fitting system designed to allow for a fast and easy installation with no special tools required. The pipe design with several insulation layers and a corrugated jacket pipe makes it

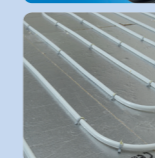
both highly flexible and robust at the same time. Obstacles can therefore be easily passed by and only very narrow trenches are needed for installation. When laid in accordance with defined conditions, a heavy traffic load suitability (SLW 60 = 60T) of our pipes is certified according to ATV DVWK-A127. This means that heavy loads like tractors, trucks and trailers will not negatively influence the life expectancy of the buried pipe.



**1 Local heat distribution**  
 ■ Uponor Thermo



**2 Floor and wall heating**  
 ■ Underfloor heating  
 ■ Radiators



**3 Heating of industrial and business areas**  
 ■ Uponor industrial radiant heating systems



Uponor pipe systems make sure that my biogas system is even more efficient



# Biomass at home: From boiler to building... effortlessly

## Getting the most out of your boiler

Whether your biomass boiler is located in an outbuilding and requires connection to the main building or vice versa, Uponor pre-insulated pipes can easily and cost-efficiently connect boiler and buildings without losing heat on the way. For bigger boilers entire pipe networks can be installed to supply several buildings through a district heating scheme, possibly making it eligible for commercial RHI (Renewable Heat Incentive) payments. Uponor pre-insulated pipes can handle heat loads as high as 1000kW.

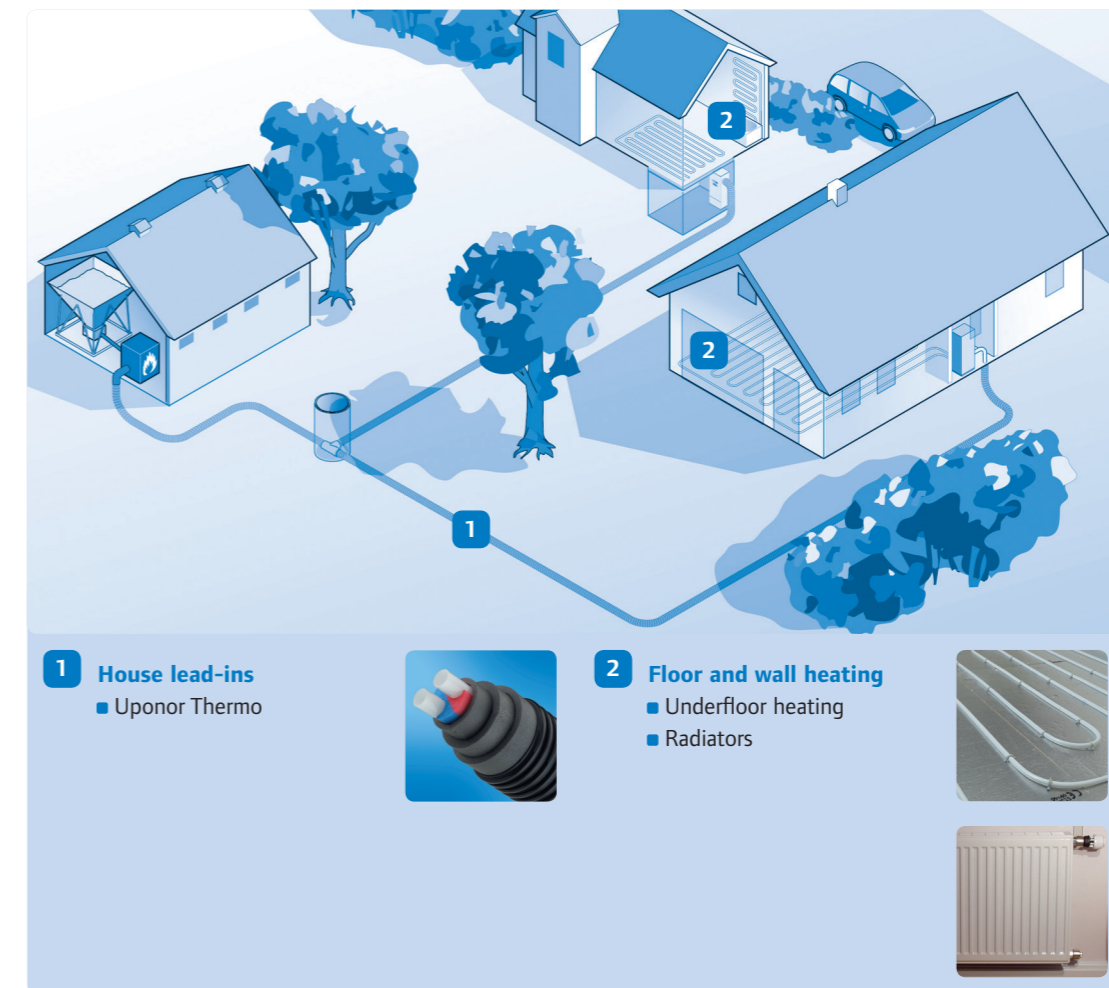
## Sustainable solutions from Uponor

The decision to invest into a biomass boiler is based on long term calculations and payoffs. Pre-insulated pipes from Uponor have a certified life expectancy of over 25 years and are basically maintenance free. That way the long term comfort of your home is guaranteed, while also keeping costs to a minimum. For an even more ecologically friendly, one stop solution, the heat can then be distributed throughout the building through our underfloor heating products, increasing the comfort level even further.

## Ease of installation

Uponor pre-insulated pipes can be installed on your premises quickly and with minimum disruption. Only narrow trenches are required since flow and return lines are incorporated into one single pipe system. For convenience Uponor will deliver directly to site with the

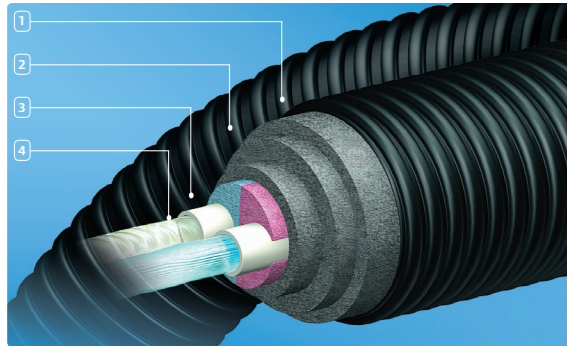
pipes cut-to-length to your requirements. Just uncoil directly into the trench, it's that easy! Re-instatement of the ground soon follows. Simple yet robust mechanical fittings (Wipex) mean you'll be connected up in no time. The reliability of Uponor pre-insulated pipe means it really is a case of "fit and forget".



“With Uponor pipe systems and local heat distribution outbuildings are heated trouble-free with our wood pellet heating unit.”



## Product overview



- 1 PE-HD jacket pipe: impact-resistant, long-life yet flexible due to the Uponor pipe geometry
- 2 Layered insulation made from PEX foam: ideal insulating properties, ageing-resistant, resistance to moisture and high flexibility
- 3 Coloured centring profile effectively avoids confusion between the flow and return pipes
- 4 PEX medium pipe: temperature-resistant, and immune to corrosion and encrustation

Uponor pre-insulated PEX heating pipes and related system components are designed according to EN 15632-3 (District heating pipes – Pre-insulated flexible pipe systems – Part 3: Non bonded plastic service pipes; requirements and test methods).

### Operating temperature and service life

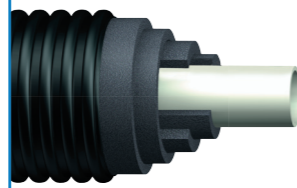
Uponor pre-insulated PEX pipe systems are, according to this European Standard, designed for a service life of at least 30 years when operated at 80°C.

### Did you know?

Our PEX heating pipes contain an oxygen diffusion barrier. This prevents permeation of oxygen, thus protecting metallic components in your heating system.

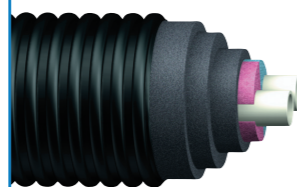
**As well as our Thermo pipes for heating applications, we also have a range of pre-insulated pipes suitable for distribution of hot tap water (Aqua) or chilled/cooling water (Supra). Full details from your local merchant or contact Uponor directly.**

### Thermo Single



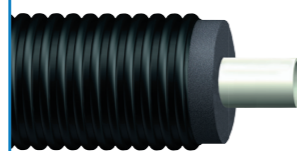
- Single PEX pipe for heating water. Max. 95°C/6 bar.
- Medium pipe 25-110 ø mm

### Thermo Twin



- Twin PEX pipe for flow and return lines for heating water.
- Max. 95°C/6 bar.
- 25/25, 32/32, 40/40, 50/50, 63/63 ø mm.

### Thermo Mini



- Single PEX pipe for heating water. Max. 95°C/6 bar, with small jacket pipe.
- Medium pipe 25 and 32 ø mm.
- Suitable for smaller scale schemes

Wipex couplings are specifically designed for connecting Uponor PEX pipes. Requiring only two spanners to assemble, these fittings clamp tightly to the pipe whilst sealing on the bore.



## Case Study



**Client:** AFBI  
**Product:** Uponor Pre-Insulated Pipe  
**Sizes:** 50mm to 110mm  
**Heat Source:** Biomass and CHP  
**Application:** District Heating

### Uponor goes the extra mile at Agri-Food & Biosciences Institute

Uponor is well known for going that extra mile but the Agri-Food and Biosciences Institute (AFBI) project in Hillsborough meant the company had to, quite literally, go the distance. By supplying over 2.7km of its pre-insulated plastic piping system for an innovative district heating system, the installation was one of the largest projects the company had undertaken in the UK.

AFBI carries out research into crop and animal production and is studying the feasibility of renewables for the agricultural sector. As part of the work by AFBI's Environment and Renewable Energy Centre, a district heating system was installed at the organisation's sizeable location covering the dairy offices, milking parlour, main pig unit, conference hall and a range of other facilities across over 200ha of land!

After assessing the demands of the project, M&E Contractor, Harvey Group, opted to utilise the expertise of Uponor, as Robert Hall, Project Manager, explained.

"The sheer size of the site at AFBI provided a wide range of challenges, not least getting the piping system over such a substantial area while maintaining temperature levels," he said. "After a lot of research we opted for Uponor's pre-insulated pipe as it provided a range of installation advantages as well as ensuring a high level of performance."

It is clear that the wide-ranging benefits of Uponor's plastic plumbing systems, when compared to 'traditional' methods, is the main reason why the likes of the pre-insulated range is now the product of choice.

Conservative estimates are that by utilising the easy-to-install pre-insulated system at AFBI saved three months on labour as opposed to other methods, such as black iron or fusion welding techniques. That is before you take into consideration the overall material cost savings and the high level of insulative performance! Robert added. "The fact that the product is already pre-insulated saves a substantial amount of time, as it avoids having to put in concrete ducts, while the simplicity of the mechanical wipex couplings also cuts back on our on-site time, as no specialist tooling was required.

"Despite the vast distances the pipe had to travel, which included over farmland and even under a road, there are very few joints and that simply means there is less that can go wrong."

All these little extras add up to huge advantages on a project of this size and when that is backed-up by the service and support offered by the local Uponor team then you can't fail to be impressed."

But while the installation process ran smoothly, the real test was always how well the system would run – and the results speak for themselves.

Detailed monitoring by AFBI shows an estimated 67% reduction in heating oil with the water temperature difference through the pre-insulated pipe across the 2.7km only 3- 5°C, highlighting the product's market-leading insulation properties.

Greg Forbes, Researcher at AFBI, said he is delighted at how well the system operates. "The idea was that, in addition to being able to research various renewable fuel types, we would be able to investigate the potential savings of installing a district heating system," he said. "We have substantially reduced heating oil costs and the Uponor system installed by Harvey Group is working extremely well. As well as fuel savings we have now cut back substantially on maintenance, having moved from a system using 12 to 14 boilers across the site to one back-up oil boiler."