

# joule Flexible pipe systems for many purposes



Joule Pre-insulated flexible pipe systems are available both as single and twin pipe solutions. Duo Pre-insulated pipes are particularly energy and cost-effective as heat loss is reduced to an absolute minimum - typically by up to 48 percent, depending on the dimension. In addition, installation of Duo Pipes requires less space and less joints, reducing installation costs considerably.

Easy to install and economical in operation Many years of experience from developing pre-insulated pipe systems enable us to produce the most energy efficient flexible pipe systems that can remain buried for the next 30 years without unforeseen maintenance costs. The pipes are available in coils of 50 or 100 meters, what minimizes the number of joints required.

- Joule Pre-insulated are available with service pipes of PEX, PEX/aluminum/PE, copper or steel, making it suitable for transportation of all kinds of liquids
- The insulation material is flexible polyurethane foam (PUR) with guaranteed insulation properties of  $\lambda 0.022 \text{ W/mK}$
- Between the casing pipe and the PUR insulation Pre-insulated Pipes are fitted with a diffusion barrier to prevent diffusion of cell gases. Thus, the pipes retain the same high insulation properties throughout their entire service life

# Specifications

## Optimum insulation properties and durability in a flexible packing

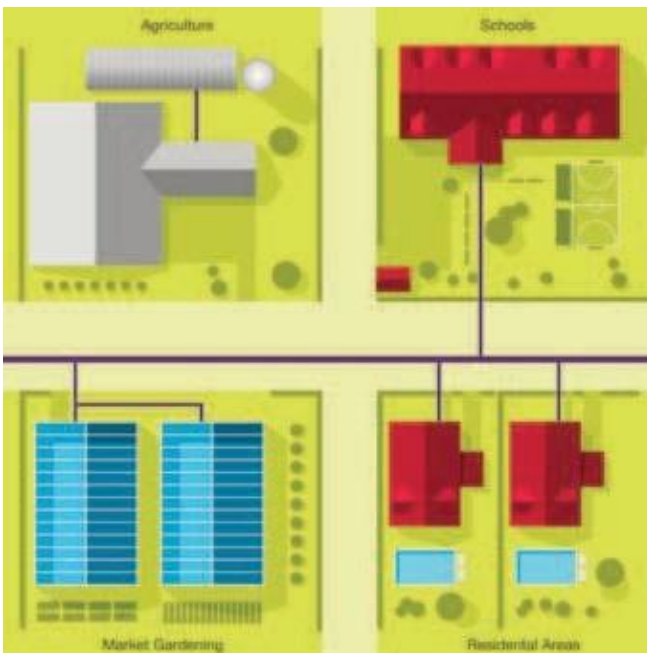
Due to the flexibility of the service pipes in the Joule Pre-insulated pipe systems, they absorb the effects of temperature fluctuations and eliminate any need for expansion measures.

Casing pipes and insulation material are also flexible, and the pipes can be bent on site to fit into any trench. Joule pipes are laid in traditional trenches or by means of tunneling techniques, dependent on the surroundings and the soil.

### Parameters

Energy price: 0.05 €/kWh  
 Pipe length: 40 m  
 Pipe type: Duo Pipes, Ø3X mm.  
 Insulation Series 1

Savings using Joule Duo Pipes compared to pipe with cellular plastic insulation amount to € 2,700 over 10 years.



Joule Pre-insulated DH District heating			
Coils of 50 or 100 m			
Dimensions (mm) - Service Pipe/ Outer casing			
Uno pipe		Duo Pipe	
Series 1	Series 2	Series 1	Series 2
20 / 77	20 / 90	2x16 / 90	2x16 / 110
25 / 77	25 / 90	2x20 / 90	2x20 / 110
32 / 77	32 / 90	2x25 / 110	2x25 / 125
40 / 90	40 / 110	2x32 / 110	2x32 / 125
50 / 110	50 / 125	2x40 / 125	2x40 / 140
63 / 125	63 / 140	2x50 / 160	
75 / 140	75 / 160		
90 / 160			
110 / 160			

Technical Data (DC)	
Service pipe	Steel, copper, PEX or PEX/Aluminum/PE
Insulation	Polyurethane foam (PUR) using cyclopentane as blowing agent
Insulation value	Thermal conductivity (50°C): $\leq 0.0XX$ W/mK
Diffusion barrier	Aluminum foil. PexFlex with polymer foil
Outer casing	Polyethylene (PE-LD)
Alarm wires	Copper. The Nordic system

### Uno Pre-insulated Pipe



### Duo Pre-insulated Pipe

