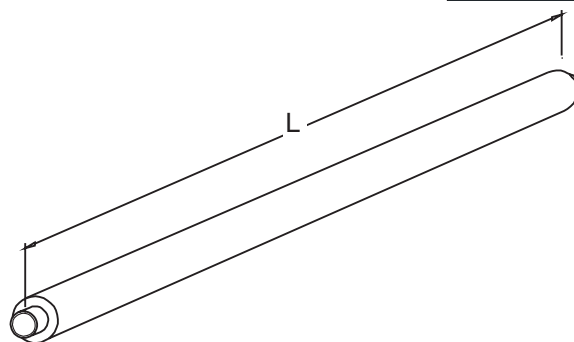


## District cooling pipe systems

### Straight pipes



#### DISTRICT COOLING, STRAIGHT PIPES

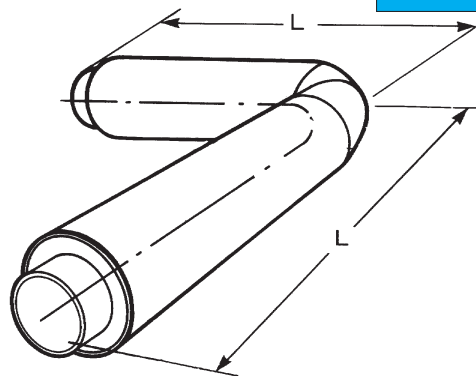
Article no.	DN	Service pipe Dy x s [mm]	Jacket pipe OD [mm]	Weight [kg/m]	Water content [l/m]
<b>L = 12 m</b>					
1003-200	200	219.1 x 4.5	280	30.0	34.7
1003-250	250	273.0 x 5.0	336	44.0	54.3
1003-300	300	323.9 x 5.6	400	58.0	76.8
1003-350	350	355.6 x 5.6	425	65.0	93.1
1003-400	400	406.4 x 6.3	500	83.0	122.0
1003-450	450	457.0 x 6.3	560	87.0	155.0
1003-500	500	508.0 x 6.3	595	101.0	193.0
1003-600	600	610.0 x 7.1	710	138.0	277.0
1003-700	700	711.0 x 7.1	800	190.0	378.0
1003-800	800	813.0 x 8.8	900	222.0	497.0
<b>L = 16 m</b>					
1004-200	200	219.1 x 4.5	280	30.0	34.7
1004-250	250	273.0 x 5.0	336	44.0	54.3
1004-300	300	323.9 x 5.6	400	58.0	76.8
1004-350	350	355.6 x 5.6	425	65.0	93.1
1004-400	400	406.4 x 6.3	500	83.0	122.0
1004-450	450	457.0 x 6.3	560	87.0	155.0
1004-500	500	508.0 x 6.3	595	101.0	193.0
1004-600	600	610.0 x 7.1	710	138.0	277.0
1004-700	700	711.0 x 7.1	800	190.0	378.0
1004-800	800	813.0 x 8.8	900	222.0	497.0

**Note:** For smaller dimension pipes than those given above, we refer you to our pre-insulated pipes, Series 1, single pipes in section 3:101 and double pipes in section 4:101



## District cooling pipe systems

### Fittings



#### Fittings for district cooling systems

Fittings such as bends, T-pieces, anchor points, curved pipes and valves are all manufactured in pre-insulated design described in section 3 but with insulation corresponding to Powerpipe standard for district cooling systems.

#### Article No.

XDxx – xxx

The "D" given in the second position of the article number gives the reference to a district cooling article. The rest of the article number is to be equivalent to the corresponding article number given in section 3.

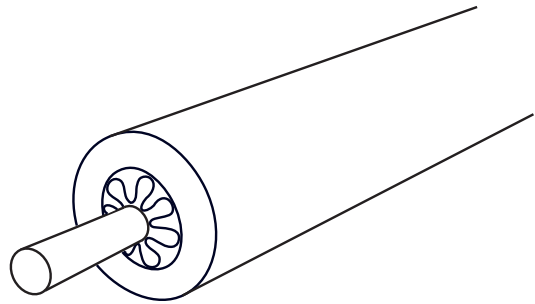
#### An example of how to order:

A 90 degree pre-insulated bend DN400 in 500 mm casing pipe for a district cooling system, Article No. 2D00-400-090



## High temperature pipe systems

### Straight pipes



#### PIPES FOR HIGH TEMPERATURE STEAM

Pre-insulated pipes for temperatures above 140° C

The steel service pipe is covered with an inside mineral wool insulation layer combined with an outside polyurethane insulation. The outer casing pipe is made of PEH like for conventional pre-insulated pipes.

During operation of the high temperature system, the steel service pipe will slide in the mineral wool jacket. For this reason, the system has to be designed with special anchor points and expansion devices.

For further information please contact us.

#### How to order:

This type of system is designed and manufactured to special customer conditions only.



## Introduction

Powerpipe offers a wide range of products and systems designs for the connection of small houses to district heating systems. An optimised, unique technical design can be offered based on the site conditions where the system is to be implemented. In order to guarantee future profitability of the installation, our systems are always designed to minimise the investment costs. However this do not affect our high quality and performance negatively.

### Proper quality is one key word

Heat losses when connecting small houses are normally high compared to the heat energy used. In some cases they will be almost 40%. In order to reduce these heat losses and at the same time reduce the investment costs Powerpipe double pipe system is to be used.

The use of Powerpipe double pipe system further reduces the number of field joints. This automatically reduces the risk of future breakdowns in the system. It has been proven that the large number of breakdowns in any district heating system originates from the field joints.

Proper design of the connecting pipes to the small houses and the substation is important initially to reduce the installation costs and later to achieve a good economic operation of the system. Over-dimensioning will lead to increased investment costs and higher future operation costs.

### Proper design is another key word

Powerpipe offers a variety of technical solutions for the expansion of district heating to small house areas. Our design is normally always based on the use of double pipe systems for the main feeding network ( i.e. flow and return service pipe in the same casing pipe ). This concept will reduce civil engineering work when installing the system and later as well as minimise the heat losses, later on.

## Double pipe systems with steel service pipes

The pre-insulated double pipes are equipped with built-in alarm wires. Preinsulated pipes with service pipe in dimensions 21.3mm and 26.9mm are manufactured with a flexible insulation foam which allows these pipes to be bent at the installation site. By using the Powerpipe bending tool type "B", a radius 0.8 m can be achieved.

**Straight Pipes:** Pipe length 12 alternatively 16 m

**Bends:** Not used.  
Straight pipes are bent at the installation site. Powerpipe bending tool is described as accessory equipment.

**T-pieces:** Not used.  
T-joint is made by hot tapping. For further information we refer you to section 6:701-706.

**House bends:** Not used.  
Straight pipes are bent at the installation site.

### Installation guidelines:

The Powerpipe double pipe system has a very high structural strength. Thus, it can be exposed to heavy work loads such as compression, impact and wear.

### Pipe lines in streets

The depth of the trench can be minimised. Only any requirements from the street owner needs to be considered. Existing excavated material to be used when refilling the trench.

The width of the trench can be minimised to be approximately pipe OD plus 10cm. Around joints the trench width is to be increased to allow the fitters space to make the installation. The pipe system can alternatively be assembled above earth for later installation in a trench.

The straight pipes can be delivered in 16 m length, which reduces the required number of joints.

### Pipe lines connecting the street main line as above with the small house

Depth of the trench can be minimised to 20cm refilling material covering the head of the casing pipe. A special earth net indicating the pipe should be placed 10 cm above the pipe to prevent future damage to the pipe.

Excavated material can be used when refilling the trench around the pipe.

The trench width can be minimised to approximately 15 – 20cm.

## PEX pipes

A flexible pre-insulated pipe using PEX as service pipe. Single pipe system as well as double pipe system available. Delivered in reels with pipe lengths of max. 500 m.

Joint-less installation is normal.

**Pipe on reel:** Pipe length max. 500 m  
Dimension service pipe 25 –110mm

**Bends:** Not used  
Bending of pipe takes place at site

**T-pieces:** Not used  
Pipes are installed without joints between the houses.

**House bends:** Not used  
Bending of pipe takes place at site

**Joints:** Not used  
Pipes are installed without joints between the houses.

## Installation guidelines:

### Main pipelines and house connection pipelines

Trenches are to be refilled with sand around the casing pipe

Pipes are easily bent to size at site. Trees, stones and other obstacles can be passed by without any problem.

The house connection is done by bending the pipe above earth level using Powerpipe bending tool type "B".

**This product can be offered on customers request**

## Flexible pre-insulated copper pipes

A flexible pre-insulated pipe using soft annealed Cu as service pipe. Single pipe system as well as double pipe system available. Delivered in reels with pipe lengths max. 25m.

The casing pipe is made of PEL.

Flexible Cu pipes can be used for small house connection and connected to Powerpipe main double steel pre-insulated pipes in the street.

**Pipe on reel:** Pipe length max. 25 m  
Dimension service pipe 22 and 28mm

**Bends:** Not used  
Bending of pipe takes place at site

**T-pieces:** Not used  
Hot tapping installation combined with casing T-joint for connection to the main street pipes.

**House bends:** Not used  
Bending of pipe takes place at site using Powerpipe bending tool.

## Installation guidelines:

### Pipes or connection of the small house to the street mains.

The flexible pre-insulated Cu pipe system has lower structural strength than Powerpipe double pipe. Thus it can not be exposed to the same heavy work loads such as compression, impact and wear as the steel double pipe system.

- The Cu pipes are to be covered by a mechanical protection before they are installed in the trench.
- This mechanical protection described under accessories consists of a PEH net easy to adapt.
- The trench can be made similar to the trench for Powerpipe double pipe systems with steel service pipe.
- Depth of the trench can be minimised to 20cm refilling material covering the head of the casing pipe. A special earth net indicating the pipe should be placed 10cm above the pipe to prevent future damage to the pipe.
- Excavated material can be used when refilling the trench around the pipe.