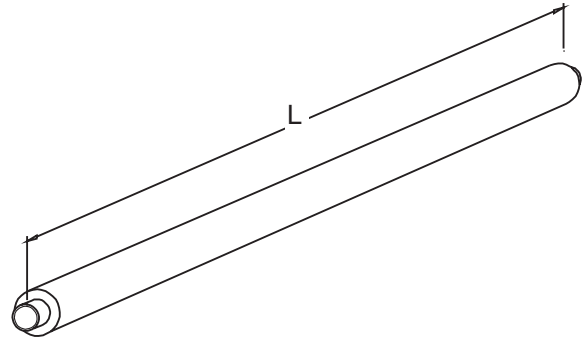


SPECIAL PIPES

5:101

District cooling pipe systems

Straight pipes



DISTRICT COOLING, STRAIGHT PIPES, 1003, 1004

Article no.	DN	Service pipe Dy x s [mm]	Jacket pipe DY [mm]	Weight [kg/m]	Water content [l/m]
L = 12 m					
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
L = 16 m					
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

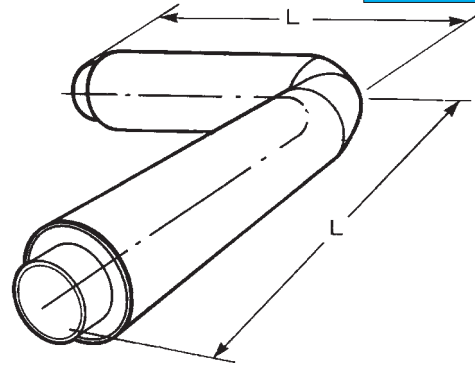
Note: For smaller dimension pipes than those given above, we refer to our pre-insulated pipes, Series 1, single pipes in section 3:101 and double pipes in section 4:101

SPECIAL PIPES

5:102

District cooling pipe systems

Fittings



FITTINGS FOR DISTRICT COOLING

Fittings such as bends, T-pieces, anchor points, curved pipes and valves are all manufactured in preinsulated design described in section 3.

Article No. for bends:

2100-DN-degree of bend-000

An example of how to order:

90 degree preinsulated bend DN 400/500 has Article No. 2100-400-090-000.

High temperature systems

Pipes for transportation of fluids at a temperature exceeding 140°C

Powerpipe offers a system for transportation of steam or other fluids at high temperature. The pipe construction consists of an inner carrier pipe of steel surrounded by shell of mineral wool. This layer of mineral wool is surrounded by polyurethane foam. An HDPE-pipe is a protective cover for the construction.

The quality of the steel pipe shall correspond to the demands in the Pressure directive and other local requirements. Commonly used steel qualities are St 35.8.1 according to DIN1629 (seamless pipes) and St 37.8.1 according to DIN1629 (welded pipes) or P235 GH/P265 GH according to EN10216/EN10217.

Powerpipe works with a computerized program for calculation/optimization of the system. Depending on dimension and temperature the program calculates thickness of mineral wool and polyurethane insulations and also heat losses and amounts of generated condense water in the pipe line.

In service situations the steel pipe will slide in the mineral wool sheet. This means that special fixing points and expansion joints are needed.

A sleeve that can transfer axial forces is needed to eliminate the risk for separation between the jacket pipes at two pipe components.

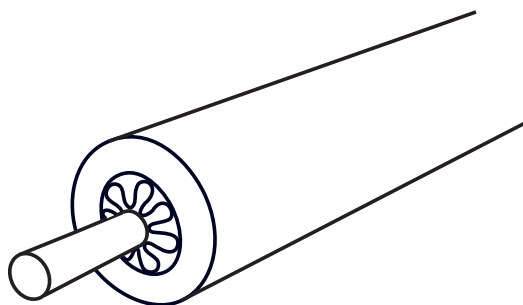
Standard pipes are normally for transport of condensate water.

The system consists of:

- Design as described above
- Insulated pipes
- Insulated fittings as bends, T-pieces
- Fixpoints
- Expansion absorbing units
- Joint system
- Condensate transport system
- Supervision under installation
- Quality assurance

High temperature pipe systems

Straight pipes



PIPES FOR STEAM AND OTHER FLUIDS WITH TEMPERATURE EXCEEDING +140°C 1803, 1804

PIPES FOR STEAM

Preinsulated 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 HDPE as for conventional preinsulated 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.

Article no.

1803-DN-Dy-xxx L = 12 m

Article no.

1804-DN-Dy-xxx L = 16 m

xxx = steel quality

St 35.8.1 is labelled as 145

St 37.8.1 is labelled as 004

P235 GH is labelled as 479

P265 GH is labelled as 480

At need of other steel qualities please contact Powerpipe.

An example of how to order:

Straight pipe DN 65 with outer jacket Ø250 mm and steel quality St 37.8.1, 12 m has Article No. 1803-065-250-004

PIPES FOR CONDENSATE WATER

Please see Straight pipes chapter 3!

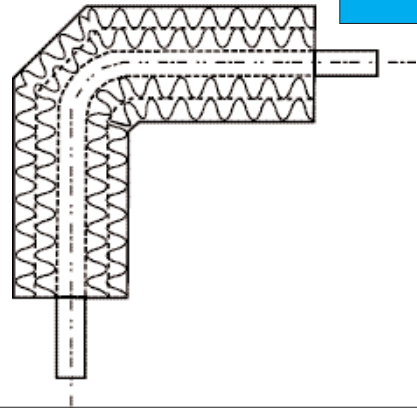


SPECIAL PIPES

5:203

High temperature pipe systems

Bend



BEND FOR HIGH TEMPERATURES AS STEAM > +140°C 2800

Article no.

2800-DN-Dy-xxx

xxx = steel quality

St 35.8.1 is labelled as 145

St 37.8.1 is labelled as 004

P235 GH is labelled as 479

P265 GH is labelled as 480

At need of other steel qualities please contact Powerpipe.

An example of how to order:

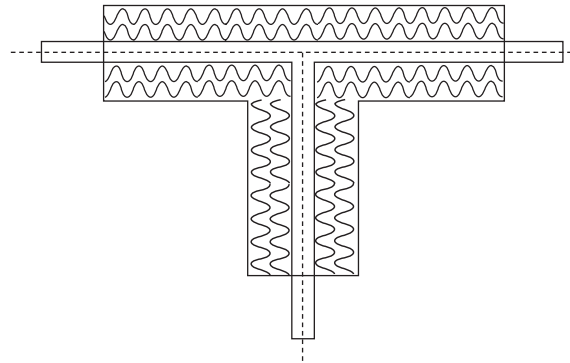
Bend with steel DN 65 and jacket pipe Ø250 mm with steel quality St 37.8.1, has Article No. 2800-065-250-004

PIPES FOR CONDENSAT WATER

Please see Straight pipes chapter 3!

High temperature pipe systems

T-piece



T-PIECE FOR HIGH TEMPERATURES AS STEAM > +140° C3800, 3810, 3830

Article No.

3800-DN (main pipe)-DN(branch)-xxx

3810-DN (main pipe)-DN(branch)-xxx

3830-DN (main pipe)-DN(branch)-xxx

45° T-piece

Parallel T-piece

Straight T-piece

xxx = steel quality

St 35.8.1 is labelled as 145

St 37.8.1 is labelled as 004

P235 GH is labelled as 479

P265 GH is labelled as 480

At need of other steel qualities please contact Powerpipe.

An example of how to order:

Straight T-piece with main pipe DN100 and branch DN65

and steel quality St 37.8.1

has Article No. 3830-100-065-004.

PIPES FOR CONDENSAT WATER

Please see Straight pipes chapter 3!



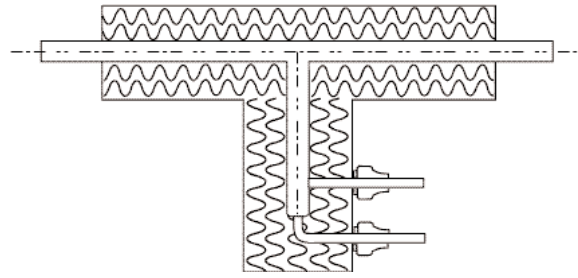
SPECIAL PIPES

5:205

High temperature pipe systems

Steam trap

Drainage pipe in stainless steel



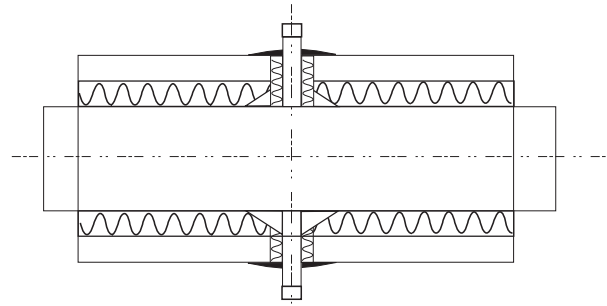
STEAM TRAP FOR TEMPERATURE $> +140^{\circ}\text{C}$

The steam trap will be delivered after detailed design

High temperature pipe systems

Anchor point

Power transmission from pipe to flange is made by small steel elements to minimize the heat transfer to the flange



ANCHOR POINT FOR TEMPERATURE $> +140^{\circ}\text{C}$ 5800

Article No.

5800-DN-Dy-xxx

xxx = steel quality

St 35.8.1 is labelled as 145

St 37.8.1 is labelled as 004

P235 GH is labelled as 479

P265 GH is labelled as 480

At need of other steel qualities please contact Powerpipe.

An example of how to order:

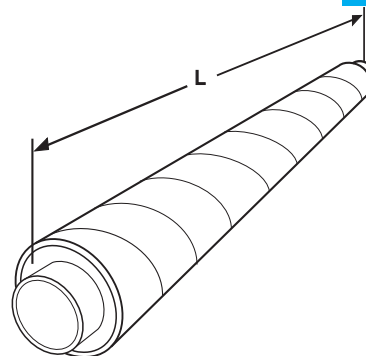
Anchor point for DN100 and jacket pipe $\text{Ø}315$ and steel quality St 37.8.1 has Article No. 5800-100-315-004.

SPECIAL PIPES

5:301

Staight pipes with spiral folded jacket pipe

Serie 1



STRAIGHT PIPES, 1103

Transmission capacity
 $\Delta T = 50^{\circ}\text{C}$

Article No:	DN	Service pipe OD x s [mm]	Jacket pipe Dy [mm]	Weight [kg/m]	Water content[l/m]	[m/s]	[kW]
L = 12 m							
1103-025	25	33.7 x 2.3	100	2.6	0.6	0.8	100
1103-032	32	42.4 x 2.6	100	3.4	1.1	0.8	180
1103-040	40	48.3 x 2.6	100	3.7	1.5	0.9	230
1103-050	50	60.3 x 2.9	125	5.2	2.3	0.9	370
1103-065	65	76.1 x 2.9	160	7.0	3.9	1.0	700
1103-080	80	88.9 x 3.2	160	8.4	5.3	1.0	1.000
1103-100	100	114.3 x 3.6	200	12.2	9.0	1.1	1.800
1103-125	125	139.7 x 3.6	225	15.4	13.8	1.3	3.300
1103-150	150	168.3 x 4.0	250	19.8	20.2	1.4	5.000
1103-200	200	219.1 x 4.5	315	28.9	34.7	1.6	10.000
1103-250	250	273.0 x 5.0	400	40.9	54.3	1.8	18.000
1103-300	300	323.9 x 5.6	450	52.9	76.8	2.0	28.000
1103-350	350	355.6 x 5.6	500	60.6	93.1	2.0	34.000
1103-400	400	406.4 x 6.3	560	76.2	122.0	2.0	45.000

Type of material, thickness of material and surface treatment of the jacket pipe has to be defined for each order in a specification.

Pipes and insulation can be delivered in fire classed performance according to NT FIRE 036, class P1 on demand.

Suffix for jacket pipe of spiral folded metal is 323.

Article No.

1103-DN-000-323.

An example of how to order:

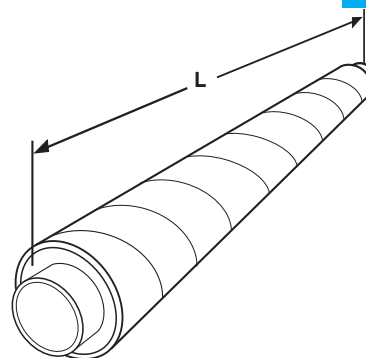
Straight pipe with spiral foldet jacket pipe, DN 100
has Article No. 1103-100-000-323

SPECIAL PIPES

5:302

Staight pipes with spiral folded jacket pipe

Serie 2



STRAIGHT PIPES, 1203,

Transmission capacity
 $\Delta T = 50^{\circ}\text{C}$

Article no:	DN	Service pipe OD x s [mm]	Jacket pipe OD [mm]	Weight [kg/m]	Water content [l/m]	[m/s]	[kW]
L = 12 m							
1203-025	25	33.7 x 2.3	125	2.6	0.6	0.8	100
1203-032	32	42.4 x 2.6	125	3.4	1.1	0.8	180
1203-040	40	48.3 x 2.6	125	3.7	1.5	0.9	230
1203-050	50	60.3 x 2.9	160	5.2	2.3	0.9	370
1203-065	65	76.1 x 2.9	200	7.0	3.9	1.0	700
1203-080	80	88.9 x 3.2	200	8.4	5.3	1.0	1.000
1203-100	100	114.3 x 3.6	225	12.2	9.0	1.1	1.800
1203-125	125	139.7 x 3.6	250	15.4	13.8	1.3	3.300
1203-150	150	168.3 x 4.0	315	19.8	20.2	1.4	5.000
1203-200	200	219.1 x 4.5	400	28.9	34.7	1.6	10.000
1203-250	250	273.0 x 5.0	450	40.9	54.3	1.8	18.000
1203-300	300	323.9 x 5.6	500	52.9	76.8	2.0	28.000
1203-350	350	355.6 x 5.6	560	60.6	93.1	2.0	34.000
1203-400	400	406.4 x 6.3	630	76.2	122.0	2.0	45.000

Type of material, thickness of material and surface treatment of the jacket pipe has to be defined for each order in a specification.

Pipes and insulation can be delivered in fire classed performance according to NT FIRE 036, class P1 on demand.

Suffix for jacket pipe of spiral folded metal is 323.

Article No.

1203-DN-000-323.

An example of how to order:

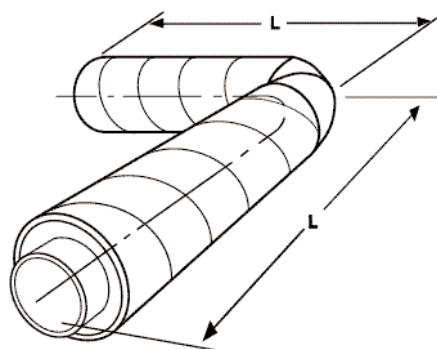
Straight pipe with spiral foldet jacket pipe, DN 100 has Article No. 1203-100-000-323

SPECIAL PIPES

5:303

Bend with spiro as jacket pipe

Serie 1, 2



BEND SPIRO 2100, 2200

Article No: Series 1	DN	Service pipe Dy x s [mm]	Jacket pipe Dy [mm]		L [mm]
			Series 1	Series 2	
2100-025	25	33.7x2.6	100	125	1000
2100-032	32	42.4x2.6	100	125	1000
2100-040	40	48.3x2.6	100	125	1000
2100-050	50	60.3x2.9	125	160	1000
2100-065	65	76.1x2.9	160	200	1000
2100-080	80	88.9x3.2	160	200	1000
2100-100	100	114.3x3.6	200	225	1000
2100-125	125	139.7x3.6	225	250	1200
2100-150	150	168.3x4.0	250	315	1200
2100-200	200	219.1x4.5	315	400	1200
2100-250	250	273.0x5.0	400	450	1200
2100-300	300	323.9x5.6	450	500	1200
2100-350	350	355.6x5.6	500	560	1200
2100-400	400	406.4x6.3	560	630	1200

Type of material, thickness of material and surface treatment of the jacket pipe has to be defined for each order in a specification.

Pipes and insulation can be delivered in fire classed performance according to NT FIRE 036, class P1 on demand.

Suffix for jacket pipe of spiral folded metal is 323.

Article No. Serie 1

2100-DN-deviation-323.

Article No. Serie 2

2200-DN-deviation-323.

An example of how to order:

Bend with spiral folded jacket pipe, DN 50, Series 2 90°
has Article No. 2203-050-090-323