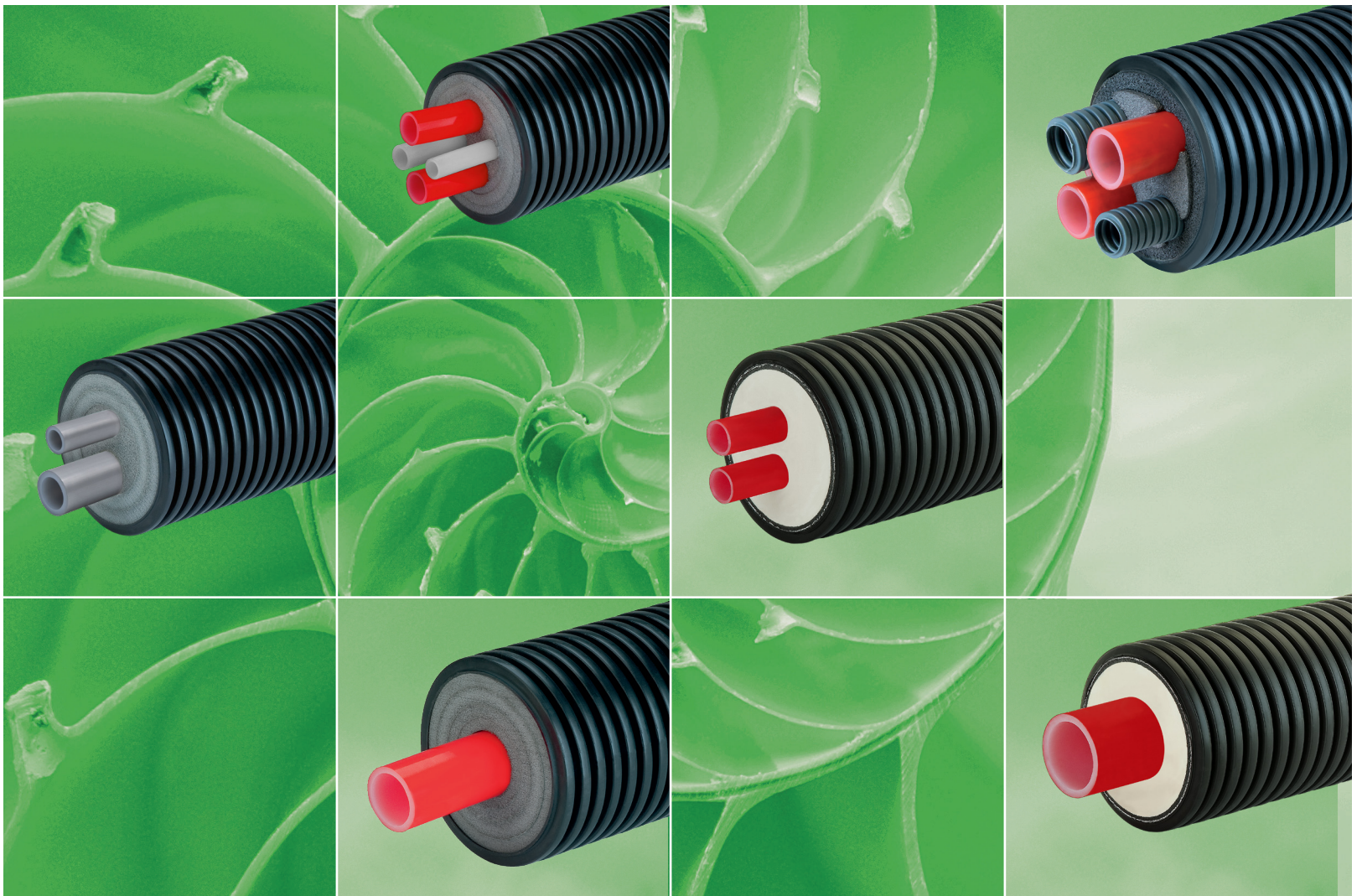




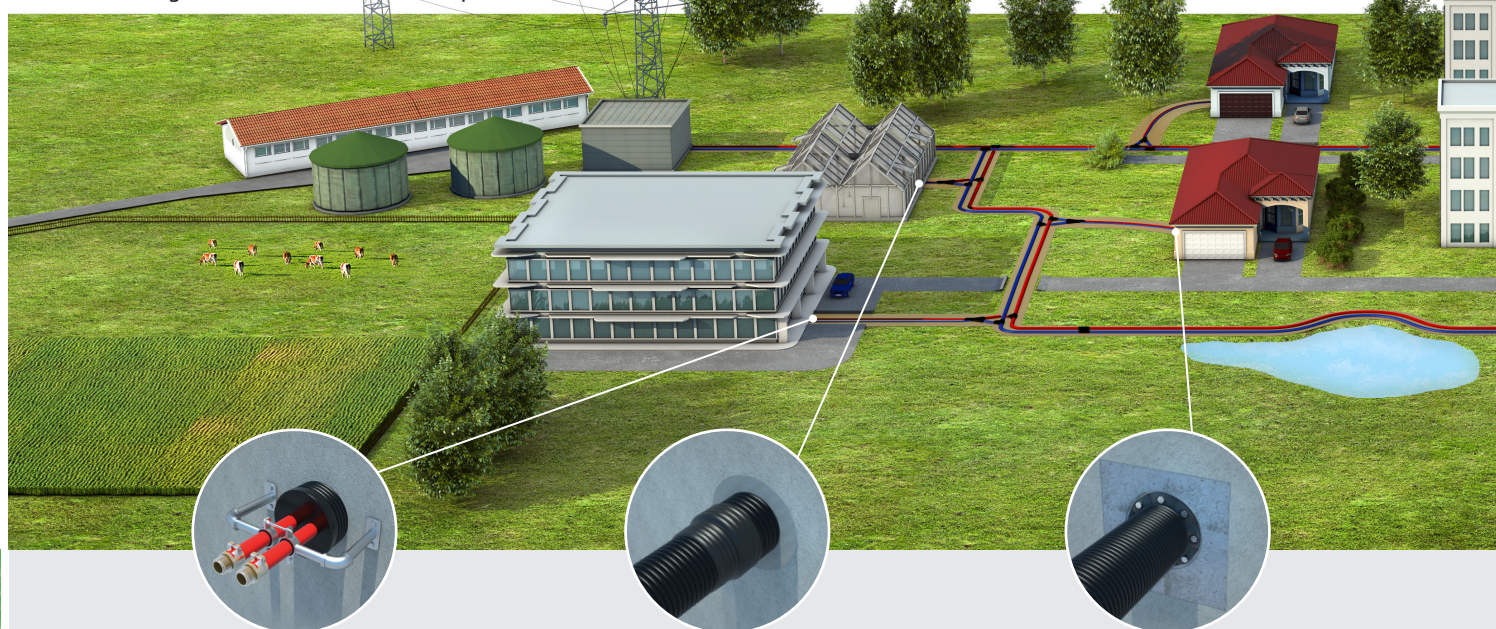
Technical Manual

Pre-Insulated Pipe Systems

AustroPUR and AustroPEX

Table of Contents

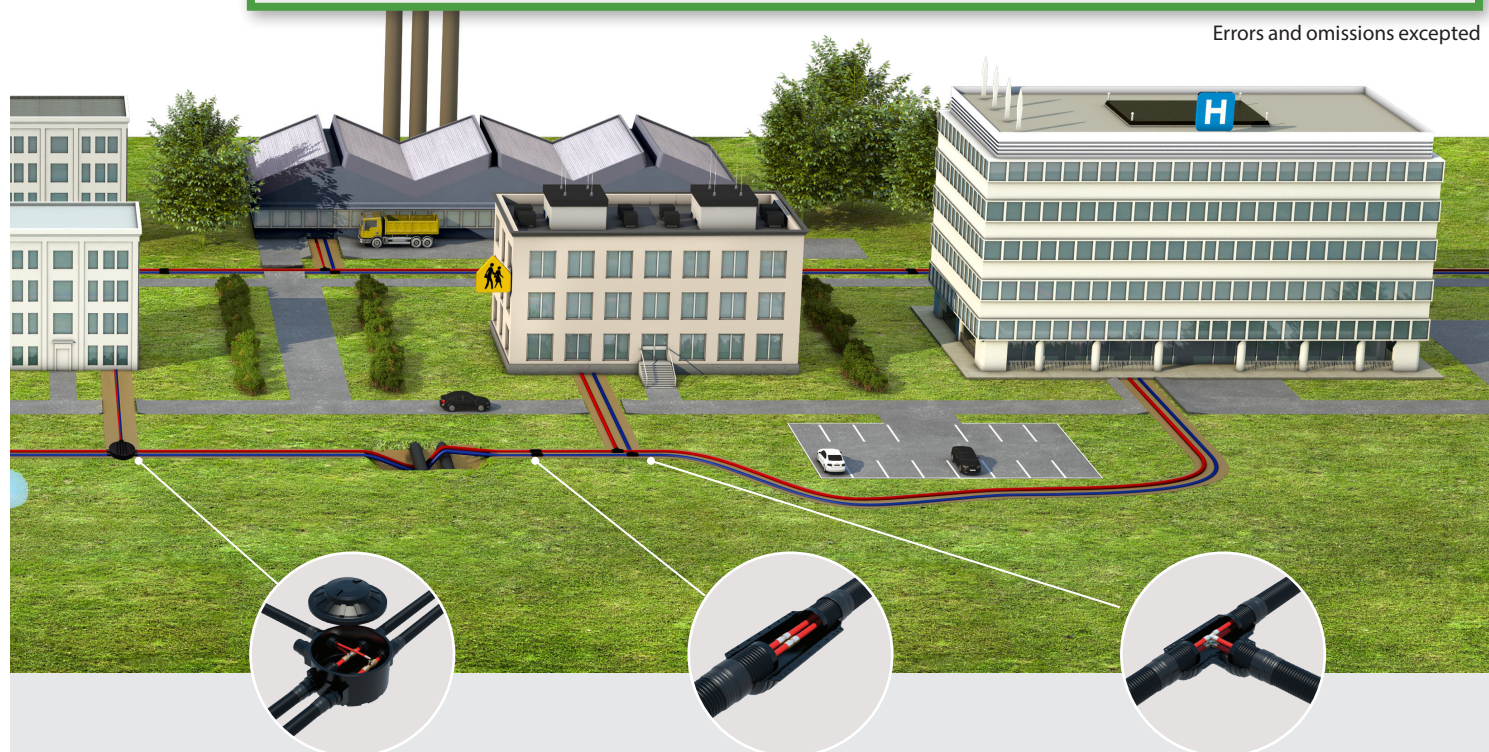
AustroPUR pipe system structure	4
Properties of AustroPUR.....	4
Areas of application	4
Insulation.....	4
AustroPEX pipe system structure.....	5
Properties of AustroPEX	5
Areas of application	5
Insulation.....	5
Corrugated HDPE outer jacket pipe.....	6
PE-Xa Carrier pipe	6
Chemical resistance	6
Oxygen diffusion barrier	6
Mechanical & thermal properties according to DIN 16892/93.....	7
Long-term mechanical behavior.....	7
Long-term internal pressure resistance	8
System overview AustroPUR - Heating	9
System overview AustroPEX - Heating.....	9
AustroPUR - Heating	10
Heat losses AustroPUR - Heating.....	11
AustroPUR – Domestic Hot Water (WW)	12
Dimensions of pipe coils AustroPUR.....	12
Heat losses AustroPUR Domestic Hot Water (WW)	13
AustroPEX - Heating.....	14
AustroPEX – Domestic Hot Water (WW).....	14
Heat losses AustroPEX - Heating	15
AustroPEX - Combi	15
AustroPEX - Heat Pump Pipes	16
AustroPEX – Cold Water (CW).....	16
Dimensions of pipe coils AustroPEX	17
Rubber End Caps.....	17
Shrink End Caps.....	18
Installation guidelines – Shrink End Caps.....	18
Wall feed-through for non-pressing water	19
Installation guidelines – Wall feed-through for non-pressing water	19
House entry Wall Collar.....	20
Wall sleeve.....	21
House entry for pressing water.....	22
Installation guidelines – House entry for pressing water.....	22
Fixed Point Clamps	23
Installation guidelines – Fixed Point Clamps	23



Installation guidelines – Stripping of the AustroPUR pipe	24
Soft PEX foam insulation package	24
Installation guidelines – Soft PEX foam insulation package	24
PUR insulation package	25
Installation guidelines – PUR insulation package	25
Inspection Chamber	26
Installation guidelines – Inspection Chamber	26
Insulation Shells	28
Installation guidelines – Insulation Shells	29
Insulation set for straight connection (Pipe Sleeve)	30
Installation guidelines – Pipe sleeve	30
Insulation set for Double T Connection	30
Installation guidelines – Double T Connection	30
Outer jacket pipe accessories	31
Press couplings PN6 - Heating	32
Press couplings PN10 - Sanitary	35
Installation guidelines – Press couplings	36
Installation guidelines – Clamp couplings	37
Clamp couplings PN6, PN10	38
Transport, storage, and installation of Austroflex pipes	40
Laying Austroflex pipes in the ground	40
Wall and ceiling mounting or free laying pipes	40
Pipe trench profile	40
Distances to other supply lines	41
Trench filling guidelines	41
Leak test for pipelines	42
Connection examples with the Austroflex system	44
Pressure unit conversion table	45
Pressure loss table Heating SDR11 PN6	46
Pressure loss table Sanitary SDR7.4 PN10	48
Pressure loss table for corrugated stainless-steel pipe	49
General Terms and Conditions of Business and Delivery	51

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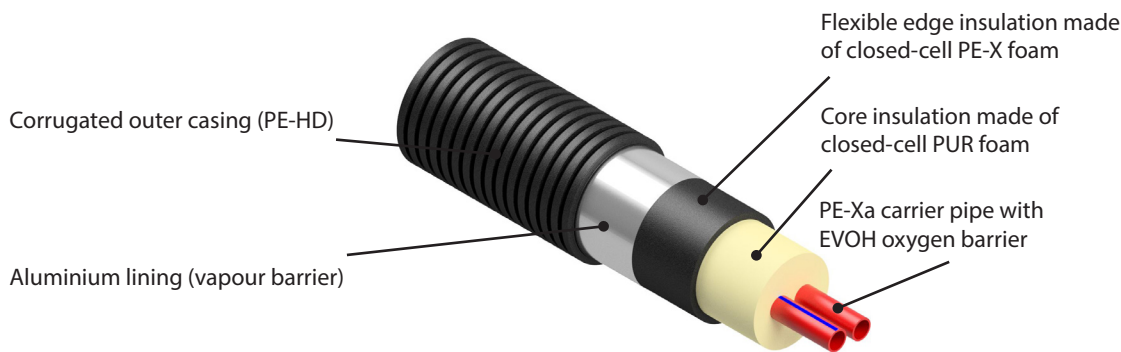
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AustroPUR - composition of the pipe system

The AustroPUR piping system consists of four coordinated components:

- Cross-linked PE-Xa is used for the carrier pipes with a nominal diameter of Ø20 up to Ø160mm. The carrier pipes have an oxygen diffusion barrier and withstand an operating pressure of 6 bar at a Temperaturee of 95 ° C. The double pipe systems have a line marking for clear distinction between flow and return.
- The core insulation is made of halogen-free polyurethane foam.
- The flexible edge insulation is made of closed-cell PE-X foam.
- The corrugated outer casing made of HDPE and the two-layer structure of the insulation make unrolling and laying of the pipe system considerably easier.



Saving energy requires good piping systems. That is why the pre-insulated pipe systems from Armacell Austria are an excellent choice. The light and very flexible pipes can be laid quickly and easily, even over obstacles and in curves. The comprehensive range of pipe connection accessories and the insulation of these connections are quick, easy, and uncomplicated to assemble. Press or clamp fittings as well as electric welding connections can be used. AustroPUR is available as a single or double pipe. The individual components and the manufacture are CFC, HCFC and HFC-free.

Properties of AustroPUR

- Excellent insulation properties
- Pre-insulated pipelines with coil length of up to 260m
- Factory cut to length
- Single or double pipe systems
- Well-known suppliers
- Oxygen diffusion barrier
- Light weight
- Completely corrosion-free
- Environmentally friendly production
- Maintenance-free system
- Long life span
- Most flexible PUR system

Areas of application

- Local and district heating networks
- Heating, hot water
- Cooling systems
- Transport of liquid chemicals



Insulation

The insulation material used consists of a cyclopentane-blown polyurethane foam core (CO₂-blown for hot water systems) and an additional edge insulation made of closed-cell PE-X foam with an aluminum vapor barrier layer. In combination with the corrugated HDPE jacket pipe, this ensures maximum flexibility.

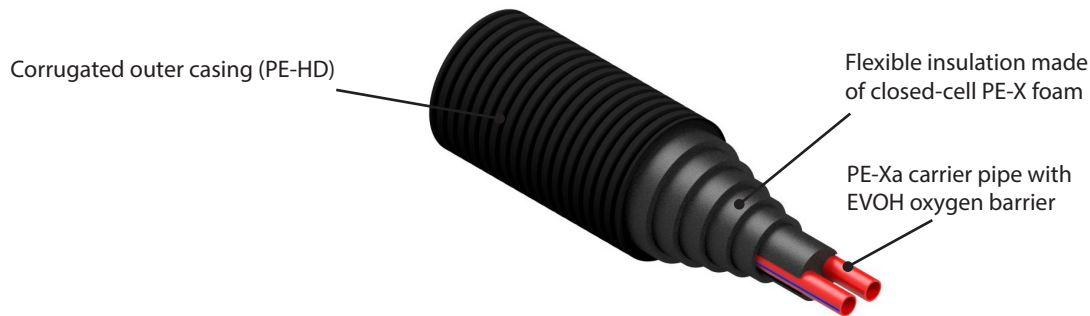
In addition to the excellent insulation properties, the closed-cell structure of the material guarantees minimal water absorption. The material is CFC, HCFC and HFC free.

Insulation properties	Standards	PUR foam values	PE-X foam values
Density	ISO 845	60 kg/m ³	30 kg/m ³
Tear strength	ISO 1926	-	240 kPa
Operating Temperaturee	-	- 80°C to +110°C	- 80°C to + 95°C
Water absorption after 28 days	DIN 53428	< 0,3 % Vol.	< 1,04 % Vol.
Thermal conductivity	DIN 52612	50 °C : 0,0219 W/m K	40 °C : 0,040 W/m K

AustroPEX - composition of the pipe system

The AustroPEX piping system consists of three coordinated components:

- Cross-linked PE-Xa is used for the carrier pipes with a nominal diameter of Ø20 up to Ø160mm. The carrier pipes have an oxygen diffusion barrier and withstand an operating pressure of 6 bar at a Temperature of 95 °C. The double heating pipe systems have a line marking for clear distinction between flow and return. As domestic hot water (sanitary) system, the PN10 pipes can withstand an operating pressure of 10 bar at 95 °C.
- Multi-layer cross-linked, microcellular PE-X foam insulation with water-repellent closed-cell structure.
- The corrugated outer casing made of HDPE and the multilayer structure of the insulation make unrolling and laying of the pipe system considerably easier.



Saving energy requires good piping systems. That is why the pre-insulated pipe systems are an excellent choice. The light and very flexible pipes can be laid quickly and easily, even over obstacles and in curves. The comprehensive range of pipe connection accessories and the insulation of these connections are quick, easy, and uncomplicated to assemble. Press or clamp fittings as well as electric welding connections can be used. AustroPEX is available as a single, double, or quadruple (combi) pipe. The individual components and the manufacture are CFC, HCFC and HFC-free.

Properties of AustroPEX

- Durable insulation properties
- Pre-insulated pipelines with a standard roll length of 100 m
- Factory cut to length
- Single, double, or quadruple (combi) pipe systems
- Well-known suppliers
- Oxygen diffusion barrier
- Light weight
- Completely corrosion-free
- Environmentally friendly production
- Maintenance-free system
- Long life span
- Extremely flexible pipe system

Areas of application

- Local and district heating networks
- Heating, hot water and cold water
- Heat pump connections
- Cooling systems
- Transport of liquid chemicals



Insulation

The insulation material used consists of multiple layers of cross-linked PE-X foam. In combination with the corrugated HDPE jacket pipe, this ensures maximum flexibility. In addition to the durable insulation properties, the closed-cell structure of the material guarantees minimal water absorption. The material is CFC, HCFC and HFC free.

Insulation properties	Standards	PE-X values
Density	ISO 845	30 kg/m ³
Tear strength	ISO 1926	240 kPa
Operating Temperature	-	- 80°C to + 95°C
Water absorption after 28 days	DIN 53428	< 1,04 % Vol.
Thermal conductivity	DIN 52612	40 °C : 0,040 W/m K

Corrugated HDPE outer pipe jacket

The HDPE outer casing protects the inner pipes and the insulation material against mechanical impact and external influences such as moisture. In addition, the corrugation ensures longitudinal flexibility as well as rigidity against radial loads.

The Armacell Austria pipe is very robust and resistant to aggressive substances.

PE-Xa Carrier pipes

Armacell Austria uses PE-Xa pipes as carrier pipes, which are manufactured in accordance with DIN 16892/93.

The PE-Xa service pipe offers considerable advantages:

Excellent thermal properties

The PE-Xa pipe was tested for a long time at a Temperature of + 95 ° C / 6 bar for heating and + 95 ° C / 10 bar for sanitary facilities (according to DIN 16892). The material is also short-term resistant to Temperatures of up to + 110 ° C.

Proven long-term strength

Under fluctuating operating Temperatures, e.g. + 90 ° C flow Temperature in winter / + 70 ° C flow Temperature in summer and an operating pressure of 5-6 bar, tests by independent public testing institutes have shown that the service life can be calculated at more than 50 years.

Chemical resistance

PE-Xa pipes have improved abrasion resistance and service life. The pipes work perfectly even with abrasive materials at high flow velocities.

High abrasion resistance

PE-Xa pipes have improved abrasion resistance and service life. The pipes work perfectly even with abrasive materials at high flow velocities.

Low friction resistance

The structure and surface roughness of PE-Xa pipes offer the lowest resistance of all comparable pipe systems, resulting in excellent flow properties with low pressure loss and without the formation of deposits.

Environmentally friendly

PE-Xa is free from harmful substances. The pipe is non-toxic, tasteless, and odorless. It is therefore ideally suited for the various areas of application in the food industry.

Physiological behavior

PE-Xa pipes meet international drinking water quality standards.

Electrically non-conductive

Due to the non-conductive PE-Xa plastic pipe, an electrical equipotential bonding of Austroflex pipe systems is not necessary.

Chemical resistance

The changes in the properties of plastics in contact with chemicals are primarily based on physical processes such as swelling or dissolution of the polymers. Due to the chemical cross-linking of the polymer chains, PE-Xa pipes behave more favorably than non-cross-linked PE pipes.

Oxygen diffusion barrier

The PE-Xa carrier pipes are equipped with an oxygen diffusion barrier (EVOH) so that no oxygen can penetrate the pipe system (in accordance with DIN 4726). Such an oxygen diffusion barrier extends the service life of the system components (pumps, valves, etc.). The oxygen permeability is $\leq 1.8 \text{ [mg / m}^2 \text{ day]}$ at 80 ° C.

Mechanical & thermal properties according to DIN 16892/93

Properties	Standards	Units	Values
Density	DIN 53479	kg/m ³	938
Elastic modulus (tension) 20 °C	DIN 53457	N/mm ²	800 - 900
Yield stress 20 °C 80 °C	DIN 53455	N/mm ²	20 – 26 9 - 13
Tear resistance 20 °C 80 °C 140 °C	DIN 53455	N/mm ²	20 – 26 9 – 13 1,6 – 2,0
Elongation at break 20 °C 80 °C 140 °C	DIN 53455	%	≥ 400 ≥ 400 ≥ 250
Notched impact strength 20 °C -20 °C	DIN 53453	kJ/m ²	without breakage without breakage
Thermal conductivity	DIN 52612	W/m K	0,35
Linear coefficient of thermal expansion 20 °C 100 °C	DIN 43328	K ⁻¹	1,4x10 ⁻⁴ 2,0x10 ⁻⁴
O ₂ permeability at 80 °C	EN 15632		≤ 1,8 [mg/m ² Tag] at 80°C
Pipe roughness k		mm	0,007
AT PN10: DVGW	W544		
Resistance	DIN 53482	Ω/cm	>1018
Specific heat capacity	DIN 51005	kJ/kg/K	2,3

Long-term mechanical behavior

Long-term tests prove the strength of PE-Xa pipelines in terms of time and Temperature.

PE-Xa is a cross-linked polyethylene. Due to the addition of hydrogen peroxide and the cross-linking by the Engel process, macromolecules are formed by building bridges between the PE molecules. Cross-linked molecules can withstand much wider Temperature ranges, exhibit higher chemical resistance, therefore making PE-Xa an excellent material for hot water applications up to 95 °C.

In contrast to non-crosslinked thermoplastic materials such as polypropylene (PP) and polybutene (PB), the strength curves show a linear course at elevated Temperatures.

The favorable results from long test periods allow statements to be made about the service life of the pipes of up to 50 years. The permissible pipe loads can be calculated using the table below.



Long-term internal pressure resistance

The permissible operating pressures according to DIN 16892 are based on the flow medium water and are designed with a safety factor of 1,25 (according to DIN EN ISO 12162). The values are monitored by the plastic pipe producers using long-term studies and are checked and confirmed by independent test institutes in various countries. The maximum operating Temperature is set at 95 °C, but also a short-term excess Temperature (fault Temperature) of 110 °C is considered. The pressure and Temperature limits of the pipes depend on the interaction of pressure, Temperature, and time. These technical details are determined in accordance with DIN 16892 and can only provide general information on the long-term strength, as the maximum Temperature and pressure values can fluctuate significantly in the specific application.

Long-term behavior in response to temperature and pressure

Average operating temperature	Operating pressure – Service years		
°C	Heating pipes SDR11 bar	Sanitary pipes SDR7.4 bar	Service years
40	11,9	18,9	50
50	10,6	16,8	50
60	9,5	15,0	50
70	8,5	13,4	50
80	7,6	12,1	25
90	6,9	11,0	15

Class 1: hot water supply (60°C)

Temperature °C	Years of service
60	49 years
80	1 year
95	100 hours
Total:	50 years

Class 2: hot water supply (60°C)

Temperature °C	Years of service
70	49 years
80	1 year
95	100 hours
Total:	50 years

Class 4: low Temperature heating

Temperature °C	Years of service
20	2,5 years
40	20 years
60	25 years
70	2,5 years
100	100 hours
Total:	50 years

Class 5: High Temperature heating

Temperature °C	Years of service
20	14 years
60	25 years
80	10 years
90	1 year
100	100 hours
Total:	50 years

Because in most individual cases the temperature is not always constant, a calculation of the temperature spectrum sounds logical. Certain applications are classified in ISO 15875 in classes.

According to ISO 15875 our PE-Xa pipes are categorized in classes with the following working pressures:

PE-Xa SDR11:

Class 1: 6bar

Class 2: 6bar

Class 4: 8bar

Class 5: 6bar

System overview AustroPUR and AustroPEX – Heating

AustroPUR

Art. No.	PE-Xa (da x s)	PE-Xa (di)	Terminal connector M	Jacket pipe (DA)	Core drilling (D)	Weight AustroPUR	Water content PE-Xa Rohr	Bending radius AustroPUR	U-value
single	mm	DN	Inch	mm	+/- 2 mm	kg / m	Liter / m	m	W/m · K
114APE125125	25x2,3	20	¾"	125	200	1,3	0,33	0,40	0,0899
114APE125132	32x2,9	25	1"	125	200	1,4	0,54	0,50	0,1072
114APE125140	40x3,7	32	1¼"	125 Basic	200	1,7	0,83	0,50	0,1297
114APE145140	40x3,7	32	1¼"	145	200/250	1,9	0,83	0,50	0,1120
114APE125150	50x4,6	40	1½"	125 Basic	200	1,9	1,31	0,55	0,1643
114APE145150	50x4,6	40	1½"	145	200/250	2,1	1,31	0,60	0,1368
114APE145163	63x5,8	50	2"	145 Basic	200/250	2,5	2,07	0,65	0,1776
114APE175163	63x5,8	50	2"	175	250	3,3	2,07	0,70	0,1436
114APE200163	63x5,8	50	2"	200 Plus	300	3,6	2,07	0,80	0,1236
114APE145175	75x6,8	65	2½"	145 Basic	200/250	2,9	2,96	0,80	0,2293
114APE175175	75x6,8	65	2½"	175	250	3,6	2,96	0,80	0,1756
114APE200175	75x6,8	65	2½"	200 Plus	300	3,9	2,96	0,90	0,1466
114APE175190	90x8,2	75	3"	175 Basic	250	4,3	4,25	1,00	0,2288
114APE200190	90x8,2	75	3"	200	300	4,5	4,25	1,00	0,1820
114APE240190	90x8,2	75	3"	240	350	6,2	4,25	1,10	0,1457
114APE200110	110x10,0	90	4"	200	300	5,3	6,36	1,10	0,2477
114APE240110	110x10,0	90	4"	240 Plus	350	7,0	6,36	1,20	0,1853
114APE240125	125x11,4	100	4"	240	350	7,6	8,20	1,30	0,2237
114APE250160	160x14,6	130	5"	250	300/350	15,5	13,43	straight pipe	0,2816
double									
114APE125220	2 - 20x1,9	16	¾"	125	200	1,3	0,44	0,50	0,1286
114APE125225	2 - 25x2,3	20	¾"	125	200	1,4	0,66	0,50	0,1577
114APE145225	2 - 25x2,3	20	¾"	145 Plus	200/250	1,8	0,66	0,60	0,1320
114APE125232	2 - 32x2,9	25	1"	125 Basic	200	1,8	1,08	0,55	0,2119
114APE145232	2 - 32x2,9	25	1"	145	200/250	2,0	1,08	0,60	0,1681
114APE175232	2 - 32x2,9	25	1"	175 Plus	250	2,8	1,08	0,80	0,1372
114APE145240	2 - 40x3,7	32	1¼"	145 Basic	200/250	2,4	1,66	0,75	0,2245
114APE175240	2 - 40x3,7	32	1¼"	175	250	3,1	1,66	0,80	0,1726
114APE200240	2 - 40x3,7	32	1¼"	200 Plus	300	3,5	1,66	1,00	0,1444
114APE175250	2 - 50x4,6	40	1½"	175 Basic	250	3,6	2,62	1,00	0,2341
114APE200250	2 - 50x4,6	40	1½"	200	300	3,8	2,62	1,10	0,1851
114APE240250	2 - 50x4,6	40	1½"	240 Plus	350	5,6	2,62	1,20	0,1477
114APE200263	2 - 63x5,8	50	2"	200	300	4,5	4,14	1,20	0,2517
114APE240263	2 - 63x5,8	50	2"	240 Plus	350	6,2	4,14	1,30	0,1873
114APE240275	2 - 75x6,8	65	2½"	240	350	6,9	5,92	1,40	0,2527

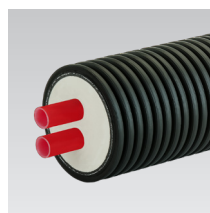
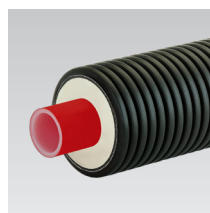
AustroPEX

single									
115APE090125	25x2,3	20	¾"	90	150	0,9	0,33	0,25	0,1898
115APE090132	32x2,9	25	1"	90	150	1,0	0,54	0,25	0,2355
115APE090140	40x3,7	32	1¼"	90 Basic	150	1,1	0,83	0,35	0,3068
115APE125140	40x3,7	32	1¼"	125	200	1,3	0,83	0,35	0,2160
115APE125150	50x4,6	40	1½"	125	200	1,9	1,31	0,50	0,2742
115APE160150	50x4,6	40	1½"	160 Plus	200/250	2,5	1,31	0,60	0,2064
115APE125163	63x5,8	50	2"	125 Basic	200	2,1	2,07	0,60	0,3637
115APE160163	63x5,8	50	2"	160	200/250	2,8	2,07	0,60	0,2693
115APE125175	75x6,8	65	2½"	125 Basic	200	2,7	2,96	0,75	0,4622
115APE160175	75x6,8	65	2½"	160	200/250	3,2	2,96	0,80	0,3313
115APE160190	90x8,2	75	3"	160	200/250	3,9	4,25	1,00	0,4360
115APE200190	90x8,2	75	3"	200 Plus	300	4,3	4,25	1,00	0,3092
115APE200110	110x10,0	90	4"	200	300	5,2	6,36	1,20	0,4161
115APE200125	125x11,4	100	4"	200	300	6,1	8,20	1,40	0,5334
double									
115APE125220	2 - 20x1,9	16	¾"	125	200	1,2	0,44	0,45	0,2186
115APE090225	2 - 25x2,3	20	¾"	90 Basic	150	1,1	0,66	0,40	0,3806
115APE125225	2 - 25x2,3	20	¾"	125	200	1,4	0,66	0,50	0,2624
115APE125232	2 - 32x2,9	25	1"	125	200	1,8	1,08	0,60	0,3390
115APE160232	2 - 32x2,9	25	1"	160 Plus	200/250	2,4	1,08	0,60	0,2522
115APE160240	2 - 40x3,7	32	1¼"	160	200/250	2,6	1,66	0,80	0,3040
115APE160250	2 - 50x4,6	40	1½"	160 Basic	200/250	3,1	2,62	0,90	0,4198
115APE200250	2 - 50x4,6	40	1½"	200	300	3,6	2,62	1,00	0,3191
115APE200263	2 - 63x5,8	50	2"	200	300	4,3	4,14	1,20	0,4252
115APE240275	2 - 75x6,8	65	2½"	240	350	6,2	5,92	1,30	0,4284

AustroPUR - Heating

Flexible, pre-insulated and self-compensating single or double pipe suitable for use as a district heating pipe for central heating systems. Corrosion-proof carrier pipe made of cross-linked PE-Xa according to DIN 16892/93, with red oxygen diffusion barrier EVOH according to DIN 4726 embedded in an elastic and CFC-free foam insulation made of polyurethane. The edge layer made of cross-linked PE-X with a closed microcell structure, together with the corrugated outer jacket made of HDPE, ensures maximum flexibility and optimal protection of the insulation and carrier pipes.

- Max. operating pressure: 6 bar at + 95 °C
- Max. operating temperature: + 95 °C
- PE-Xa-pipes: SDR 11
- Standard delivery form: coils
- At 250mm outer casing the delivery form is in 12m bars
- Custom-made combinations on request



AustroPUR	PE-Xa (da x s)	PE-Xa (di)	Jacket pipe (DA)	Weight	Bending radius	Coil length
Art. No. single	mm	DN	mm	kg/m	m	m
114APE125125	25x2,3	20	125	1,3	0,40	260
114APE125132	32x2,9	25	125	1,4	0,50	260
114APE125140	40x3,7	32	125 Basic	1,7	0,50	260
114APE145140	40x3,7	32	145	1,9	0,50	240
114APE125150	50x4,6	40	125 Basic	1,9	0,55	260
114APE145150	50x4,6	40	145	2,1	0,60	240
114APE145163	63x5,8	50	145 Basic	2,5	0,65	240
114APE175163	63x5,8	50	175	3,3	0,70	150
114APE200163	63x5,8	50	200 Plus	3,6	0,80	100
114APE145175	75x6,8	65	145 Basic	2,9	0,80	240
114APE175175	75x6,8	65	175	3,6	0,80	150
114APE200175	75x6,8	65	200 Plus	3,9	0,90	100
114APE175190	90x8,2	75	175 Basic	4,3	1,00	150
114APE200190	90x8,2	75	200	4,5	1,00	100
114APE240190	90x8,2	75	240	6,2	1,10	85
114APE200110	110x10,0	90	200	5,3	1,10	100
114APE240110	110x10,0	90	240 Plus	7,0	1,20	85
114APE240125	125x11,4	100	240	7,6	1,30	85
114APE250160	160x14,6	130	250	15,5	straight pipe	12
double						
114APE125220	2 - 20x1,9	16	125	1,3	0,50	260
114APE125225	2 - 25x2,3	20	125	1,4	0,50	260
114APE145225	2 - 25x2,3	20	145 Plus	1,8	0,60	240
114APE125232	2 - 32x2,9	25	125 Basic	1,8	0,55	260
114APE145232	2 - 32x2,9	25	145	2,0	0,60	240
114APE175232	2 - 32x2,9	25	175 Plus	2,8	0,80	150
114APE145240	2 - 40x3,7	32	145 Basic	2,4	0,75	240
114APE175240	2 - 40x3,7	32	175	3,1	0,80	150
114APE200240	2 - 40x3,7	32	200 Plus	3,5	1,00	100
114APE175250	2 - 50x4,6	40	175 Basic	3,6	1,00	150
114APE200250	2 - 50x4,6	40	200	3,8	1,10	100
114APE240250	2 - 50x4,6	40	240 Plus	5,6	1,20	85
114APE200263	2 - 63x5,8	50	200	4,5	1,20	100
114APE240263	2 - 63x5,8	50	240 Plus	6,2	1,30	85
114APE240275	2 - 75x6,8	65	240	6,9	1,40	85

AustroPUR is a Bonded Piping System in according to EN 15632-2.

In case of inleak of (ground)water, the longitudinal water propagation is minimized due to the bonded connection between the PUR foam and the PE-Xa carrier pipes.

Heat losses AustroPUR

Coverage: 800 mm

T_f = Flow Temperature T_r = Return Temperature T_g = Ground Temperature

For Single heating pipe: $\Delta T = T_f - T_r$

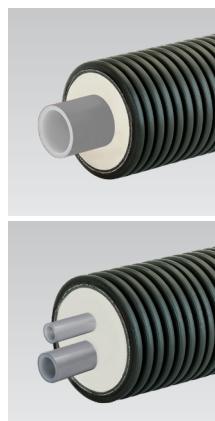
For Double heating pipe: $\Delta T = (T_f + T_r) / 2 - T_g$

Heat losses in W/m											
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
125 1x25	0,90	1,80	2,70	3,60	4,50	5,40	6,29	7,19	8,09	8,99	0,0899
125 1x32	1,07	2,14	3,22	4,29	5,36	6,43	7,51	8,58	9,65	10,72	0,1072
125 1x40	1,29	2,59	3,89	5,19	6,49	7,78	9,08	10,38	11,67	12,97	0,1297
145 1x40	1,12	2,24	3,36	4,48	5,60	6,72	7,84	8,96	10,08	11,20	0,1120
125 1x50	1,64	3,29	4,93	6,57	8,22	9,86	11,50	13,14	14,79	16,43	0,1643
145 1x50	1,37	2,74	4,10	5,47	6,84	8,21	9,58	10,95	12,31	13,68	0,1368
145 1x63	1,78	3,55	5,33	7,10	8,88	10,66	12,43	14,21	15,98	17,76	0,1776
175 1x63	1,44	2,87	4,31	5,74	7,18	8,62	10,05	11,49	12,93	14,36	0,1436
200 1x63	1,24	2,47	3,71	4,95	6,18	7,42	8,65	9,89	11,13	12,36	0,1236
145 1x75	2,29	4,59	6,88	9,17	11,47	13,76	16,05	18,34	20,64	22,93	0,2293
175 1x75	1,76	3,51	5,27	7,02	8,78	10,54	12,29	14,05	15,81	17,56	0,1756
200 1x75	1,47	2,93	4,40	5,86	7,33	8,80	10,26	11,73	13,20	14,66	0,1466
175 1x90	2,29	4,58	6,86	9,15	11,44	13,73	16,02	18,30	20,59	22,88	0,2288
200 1x90	1,82	3,64	5,46	7,28	9,10	10,92	12,74	14,56	16,38	18,20	0,1820
240 1x90	1,46	2,91	4,37	5,83	7,29	8,74	10,20	11,66	13,12	14,57	0,1457
200 1x110	2,48	4,95	7,43	9,91	12,38	14,86	17,34	19,82	22,29	24,77	0,2477
240 1x110	1,85	3,71	5,56	7,41	9,26	11,12	12,97	14,82	16,67	18,53	0,1853
240 1x125	2,24	4,47	6,71	8,95	11,19	13,42	15,66	17,90	20,14	22,37	0,2237
250 1x160	2,82	5,63	8,45	11,26	14,08	16,89	19,71	22,53	25,34	28,16	0,2816
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
125 2x20	1,29	2,57	3,86	5,14	6,43	7,72	9,00	10,29	11,58	12,86	0,1286
125 2x25	1,58	3,15	4,73	6,31	7,88	9,46	11,04	12,62	14,19	15,77	0,1577
145 2x25	1,32	2,64	3,96	5,28	6,60	7,92	9,24	10,56	11,88	13,20	0,1320
125 2x32	2,12	4,24	6,36	8,48	10,60	12,71	14,83	16,95	19,07	21,19	0,2119
145 2x32	1,68	3,36	5,04	6,72	8,40	10,08	11,76	13,44	15,12	16,81	0,1681
175 2x32	1,37	2,74	4,11	5,49	6,86	8,23	9,60	10,97	12,34	13,72	0,1372
145 2x40	2,25	4,49	6,74	8,98	11,23	13,47	15,72	17,96	20,20	22,45	0,2245
175 2x40	1,73	3,45	5,18	6,90	8,63	10,36	12,08	13,81	15,53	17,26	0,1726
200 2x40	1,44	2,89	4,33	5,78	7,22	8,66	10,11	11,55	13,00	14,44	0,1444
175 2x50	2,34	4,68	7,02	9,36	11,71	14,05	16,39	18,73	21,07	23,41	0,2341
200 2x50	1,85	3,70	5,55	7,40	9,25	11,10	12,95	14,80	16,66	18,51	0,1851
240 2x50	1,48	2,95	4,43	5,91	7,39	8,86	10,34	11,82	13,30	14,77	0,1477
200 2x63	2,52	5,03	7,55	10,07	12,59	15,10	17,62	20,14	22,66	25,17	0,2517
240 2x63	1,87	3,75	5,62	7,49	9,37	11,24	13,11	14,99	16,86	18,73	0,1873
240 2x75	2,53	5,05	7,58	10,11	12,63	15,16	17,69	20,21	22,74	25,27	0,2527

AustroPUR WW

Flexible, pre-insulated and self-compensating single pipe or double pipe suitable for the main application as a district heating pipe for domestic hot water and thermal water. Corrosion-resistant carrier pipe made of cross-linked PE-Xa according to DIN 16892 with oxygen diffusion barrier. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed micro-cell structure. Minimal water absorption of <1% according to DIN 53428. With the double pipe system, the insulating PE foam center piece guarantees an effective separation between the hot water and the circulation pipe. The corrugated outer HDPE pipe jacket ensures optimal protection of the piping system.

- Max. Operating pressure: 10 bar at + 95 °C
- Max. Operating temperature: + 95 °C
- PE-Xa pipes: SDR 7.4
- Custom-made combinations on request



AustroPUR WW double	PE-Xa (da x s)	PE-Xa (di)	Jacket pipe (DA)	Weight	Bending radius
Art. No. single	mm	DN	mm	kg/m	m
114APR125125	25x3,5	18	125	1,47	0,4
114APR125132	32x4,4	23	125	1,62	0,5
114APR125140	40x5,5	29	125	1,84	0,5
114APR145150	50x6,9	36	145	2,41	0,6
114APR145163	63x8,6	46	145	2,83	0,7
double					
114APR125226	1 - 25x3,5 1 - 20x2,8	18 14	125	1,63	0,5
114APR145234	1 - 32x4,4 1 - 20x2,8	23 14	145	2,07	0,6
114APR145241	1 - 40x5,5 1 - 25x3,5	29 18	145	2,34	0,7
114APR175252	1 - 50x6,9 1 - 32x4,4	36 23	175	3,58	0,8

Other combinations of the listed carrier pipes and jacket pipes are possible on specific request.

Also, the Scandinavian carrier pipe dimensions (22m and 28mm) and combinations thereof are available on request.

AustroPUR coil dimensions

Pipes can be cut to customer specific length (only in full meters).

The pipe coils can be transported with the usual means of transport.

For detailed transport and storage regulations, see „Transport, storage, and installation of pipes“ on page 40.

Jacket pipe (DA)	Pipe coil - length										
mm	25 m		50 m		75 m		100 m		max.coil length		
	B (m)	D (m)	B (m)	D (m)	B (m)	D (m)	B (m)	D (m)	Länge (m)	B (m)	D (m)
125	0,3	2,1	0,4	2,3	0,5	2,3	0,6	2,3	260	1,1	2,5
145	0,3	2,2	0,5	2,2	0,7	2,2	1,1	2,2	240	1,2	2,7
175	0,4	2,3	0,6	2,5	1,0	2,4	1,2	2,4	150	1,2	2,7
200	0,4	2,5	0,7	2,5	1,0	2,5	1,2	2,5	100	1,2	2,5
240	0,8	2,3	1,2	2,3	1,2	2,7	-	-	85	1,2	2,7
250	12m straight pipes										

Heat losses AustroPUR WW

Coverage: 800 mm

Tf = Flow Temperature Tr = Return Temperature Tg = Ground Temperature

For Single WW pipe: $\Delta T = T_f - T_r$

For Double WW pipe: $\Delta T = (T_f + T_r) / 2 - T_g$

Heat losses in W/m											
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
125 1x25	0,94	1,87	2,81	3,74	4,68	5,61	6,55	7,48	8,42	9,35	0,0935
125 1x32	1,12	2,23	3,35	4,47	5,58	6,70	7,82	8,93	10,05	11,17	0,1116
125 1x40	1,35	2,71	4,06	5,41	6,76	8,12	9,47	10,82	12,18	13,53	0,1353
145 1x50	1,42	2,85	4,27	5,69	7,11	8,54	9,96	11,38	12,81	14,23	0,1423
145 1x63	1,85	3,70	5,55	7,40	9,25	11,10	12,95	14,80	16,65	18,50	0,1850
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
125 1x25+1x20	1,42	2,84	4,26	5,68	7,10	8,51	9,93	11,35	12,77	14,19	0,1419
145 1x32+1x20	1,39	2,78	4,18	5,57	6,96	8,35	9,74	11,14	12,53	13,92	0,1392
145 1x40+1x25	1,76	3,52	5,27	7,03	8,79	10,55	12,30	14,06	15,82	17,58	0,1758
175 1x50+1x32	1,87	3,73	5,60	7,47	9,34	11,20	13,07	14,94	16,80	18,67	0,1867

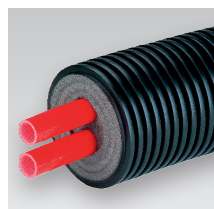
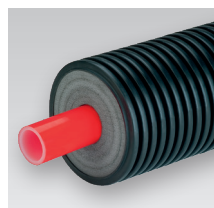
IMPORTANT !

Always check local regulations for suitability and / or approval of the system for the intended application.

AustroPEX

Flexible, pre-insulated and partially self-compensating single or double pipe system suitable for the main application as a district heating pipe for central heating systems. Corrosion-proof medium pipe made of cross-linked PE-Xa according to DIN 16892/93, with oxygen diffusion barrier EVOH according to DIN 4726. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed microcell structure. Minimum water absorption of <1% according to DIN 53428. The corrugated outer HDPE pipe jacket ensures optimal protection of the pipe system.

- Max. Operating pressure: 6,6 bar at + 95 °C
- Max. Operating temperature: + 95 °C
- PE-Xa pipes: SDR 11
- Custom-made combinations on request

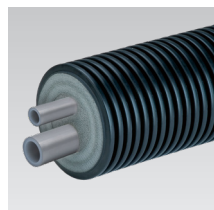


AustroPEX	PE-Xa (da/s)	PE-Xa (di)	Jacket pipe (DA)	Weight	Bending radius	Coil length
Art. No. single	mm	DN	mm	kg/m	m	m
115APE090125	25x2,3	20	90	0,9	0,25	100
115APE090132	32x2,9	25	90	1,0	0,25	100
115APE090140	40x3,7	32	90 Basic	1,1	0,35	100
115APE125140	40x3,7	32	125	1,3	0,35	100
115APE125150	50x4,6	40	125	1,9	0,50	100
115APE160150	50x4,6	40	160 Plus	2,5	0,60	100
115APE125163	63x5,8	50	125 Basic	2,1	0,60	100
115APE160163	63x5,8	50	160	2,8	0,60	100
115APE125175	75x6,8	65	125 Basic	2,7	0,75	100
115APE160175	75x6,8	65	160	3,2	0,80	100
115APE160190	90x8,2	75	160	3,9	1,00	100
115APE200190	90x8,2	75	200 Plus	4,3	1,00	100
115APE200110	110x10,0	90	200	5,2	1,20	100
115APE200125	125x11,4	100	200	6,1	1,40	100
double						
115APE125220	2- 20x1,9	16	125	1,2	0,45	100
115APE090225	2- 25x2,3	20	90Basic	1,1	0,40	100
115APE125225	2- 25x2,3	20	125	1,4	0,50	100
115APE125232	2- 32x2,9	25	125	1,8	0,60	100
115APE160232	2- 32x2,9	25	160 Plus	2,4	0,60	100
115APE160240	2- 40x3,7	32	160	2,6	0,80	100
115APE160250	2- 50x4,6	40	160 Basic	3,1	0,90	100
115APE200250	2- 50x4,6	40	200	3,6	1,00	100
115APE200263	2- 63x5,8	50	200	4,3	1,20	100
115APE240275	2- 75x6,8	65	240	6,2	1,30	100

AustroPEX WW

Flexible, pre-insulated and partially self-compensating single or double pipe system suitable for domestic hot (sanitary) water applications.

- Max. Operating pressure: 10 bar at + 95 °C
- Max. Operating temperature: + 95 °C
- PE-Xa pipes: SDR 7.4
- Custom-made combinations on request



AustroPEX WW	PE-Xa (da x s)	PE-Xa (di)	Jacket pipe (DA)	Weight	Bending radius	Coil length
Art. No. single	mm	DN	mm	kg/m	m	m
115APR090125	25x3,5	18	90	1,0	0,30	100
115APR090132	32x4,4	23	90	1,1	0,30	100
115APR125140	40x5,5	29	125	1,4	0,40	100
115APR125150	50x6,9	36	125	2,2	0,50	100
115APR160163	63x8,6	46	160	3,2	0,60	100
double						
115APR125226	1- 25x3,5 1- 20x2,8	18 14	125	1,3	0,50	100
115APR125234	1- 32x4,4 1- 20x2,8	23 14	125	1,4	0,50	100
115APR160241	1- 40x5,5 1- 25x3,5	29 18	160	2,7	0,60	100
115APR160252	1- 50x6,9 1- 32x3,5	36 29	160	3,0	0,60	100

Heat losses AustroPEX

Coverage: 800 mm

Tf = Flow Temperature Tr = Return Temperature Tg = Ground Temperature

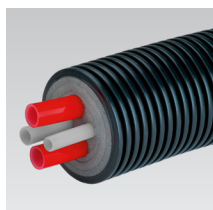
For Single WW pipe: $\Delta T = T_f - T_r$

For Double WW pipe: $\Delta T = (T_f + T_r) / 2 - T_g$

Heat losses in W/m											
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
90 1x25	1,90	3,80	5,69	7,59	9,49	11,39	13,28	15,18	17,08	18,98	0,1898
90 1x32	2,36	4,71	7,07	9,42	11,78	14,13	16,49	18,84	21,20	23,55	0,2355
90 1x40	3,07	6,14	9,20	12,27	15,34	18,41	21,48	24,54	27,61	30,68	0,3068
125 1x40	2,16	4,32	6,48	8,64	10,80	12,96	15,12	17,28	19,44	21,60	0,2160
125 1x50	2,74	5,48	8,23	10,97	13,71	16,45	19,19	21,94	24,68	27,42	0,2742
160 1x50	2,06	4,13	6,19	8,26	10,32	12,38	14,45	16,51	18,58	20,64	0,2064
125 1x63	3,64	7,27	10,91	14,55	18,18	21,82	25,46	29,10	32,73	36,37	0,3637
160 1x63	2,69	5,39	8,08	10,77	13,47	16,16	18,85	21,54	24,24	26,93	0,2693
125 1x75	4,62	9,24	13,87	18,49	23,11	27,73	32,35	36,98	41,60	46,22	0,4622
160 1x75	3,31	6,63	9,94	13,25	16,57	19,88	23,19	26,50	29,82	33,13	0,3313
160 1x90	4,36	8,72	13,08	17,44	21,80	26,16	30,52	34,88	39,24	43,60	0,4360
200 1x90	3,09	6,18	9,28	12,37	15,46	18,55	21,64	24,74	27,83	30,92	0,3092
200 1x110	4,16	8,32	12,48	16,64	20,81	24,97	29,13	33,29	37,45	41,61	0,4161
200 1x125	5,33	10,67	16,00	21,34	26,67	32,01	37,34	42,67	48,01	53,34	0,5334
ΔT K Dimension	10	20	30	40	50	60	70	80	90	100	U-value W/m · K
125 2x20	2,19	4,37	6,56	8,74	10,93	13,11	15,30	17,48	19,67	21,86	0,2186
90 2x25	3,81	7,61	11,42	15,22	19,03	22,84	26,64	30,45	34,25	38,06	0,3806
125 2x25	2,62	5,25	7,87	10,50	13,12	15,74	18,37	20,99	23,61	26,24	0,2624
125 2x32	3,39	6,78	10,17	13,56	16,95	20,34	23,73	27,12	30,51	33,90	0,3390
160 2x32	2,52	5,04	7,57	10,09	12,61	15,13	17,65	20,18	22,70	25,22	0,2522
160 2x40	3,04	6,08	9,12	12,16	15,20	18,24	21,28	24,32	27,36	30,40	0,3040
160 2x50	4,20	8,40	12,59	16,79	20,99	25,19	29,39	33,58	37,78	41,98	0,4198
200 2x50	3,19	6,38	9,57	12,77	15,96	19,15	22,34	25,53	28,72	31,91	0,3191
200 2x63	4,25	8,50	12,76	17,01	21,26	25,51	29,77	34,02	38,27	42,52	0,4252
240 2x75	4,28	8,57	12,85	17,14	21,42	25,70	29,99	34,27	38,56	42,84	0,4284

AustroPEX Combi

Flexible, pre-insulated and partially self-compensating pipe system with two heating pipes and two sanitary pipes for domestic hot water (flow and return and hot water circulation pipes). Corrosion-proof carrier pipes made of cross-linked PE-Xa according to DIN 16892/93, with oxygen diffusion barrier EVOH according to DIN 4726. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed micro-cell structure. Minimum water absorption of <1% according to DIN 53428. The insulating center piece made of PE foam guarantees an effective separation between the flow and the return lines. The corrugated outer pipe jacket made of HDPE ensures optimal protection of the pipe system.



AustroPEX Combi	PE-Xa (da x s)	PE-Xa (di)	Jacket pipe (da)	Weight	Bending radius	Coil length
Art. No.	mm	DN	mm	kg/m	m	m
115APX145418	2- 25x2,3 1- 25x3,5 1- 20x2,8	20 18 14	145	1,8	0,80	100
115APX160404	2- 32x2,9 1- 25x3,5 1- 20x2,8	25 18 14	160	2,6	0,80	100
115APX160436	2- 32x2,9 1- 32x4,4 1- 20x2,8	25 23 14	160	2,8	0,80	100
115APX200249	2- 40x3,7 1- 40x5,5 1- 25/3,5	32 29 18	200	4,0	1,00	100

Heating pipes

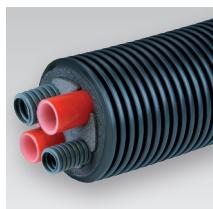
- Max. operating pressure: 6,6 bar at + 95°C
- Max. operating temperature: + 95°C
- PE-Xa pipes: SDR 11

Hot (sanitary) water pipes

- Max. operating pressure: 10 bar at + 95°C
- Max. operating temperature: + 95°C
- PE-Xa pipes: SDR 7.4
- Custom-made combinations on request

AustroPEX WPP Heat pump pipe

Flexible, pre-insulated and partially self-compensating pipe system with two heating pipes and 2 PE conduits. Corrosion-resistant heating pipes made of cross-linked PE-Xa according to DIN 16892/93 with red oxygen diffusion barrier EVOH according to DIN 4726. The PE conduits can be used to route control and supply cables to the heat pump. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed micro-cell structure. Minimal water absorption of <1% according to DIN 53428. The insulating centerpiece guarantees an effective separation between the supply and return pipes. A corrugated HDPE jacket pipe provides high-grade protection of the pipe system.



Heat pump pipe	PE-Xa (da x s)	PE-Xa (di)	Jacket pipe (DA)	PE conduit 1 (da)	PE conduit 2 (da)	Bending radius	Coil length
Art. No.	mm	DN	mm	mm	mm	m	m
118WPP125432	2- 32x2,9	25	125	Ø 32	Ø 25	0,50	100
118WPP145440	2- 40x3,7	32	145	Ø 32	Ø 25	0,60	100
118WPP160450	2- 50x4,6	40	160	Ø 32	Ø 25	0,65	100

AustroPEX WPE Heat pump pipe

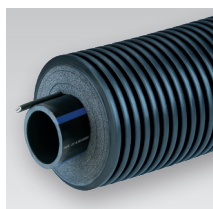
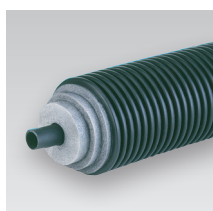
Flexible, pre-insulated and partially self-compensating pipe system with two heating pipes and 2 PE conduits. Flexible, corrugated carrier pipe made of stainless steel 1.4404 (AISI 316L). The PE conduits can be used to route control and supply cables to the heat pump. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed micro-cell structure. Minimal water absorption of <1% according to DIN 53428. The insulating centerpiece guarantees an effective separation between the supply and return pipes. A corrugated HDPE jacket pipe provides high-grade protection of the pipe system.



Heat pump pipe	Corrugated St.St. pipe	Jacket pipe (DA)	PE conduit 1 (da)	PE conduit 2 (da)	Bending radius	Coil length
Art. No.	DN	mm	mm	mm	m	m
118WPE125425	2 x DN 25	125	Ø 32	Ø 25	0,50	100
118WPE145432	2 x DN 32	145	Ø 32	Ø 25	0,60	100
118WPE160440	2 x DN 40	160	Ø 32	Ø 25	0,70	100

AustroPEX CW, AustroPEX CW with frost protection cable

Flexible, pre-insulated and partially self-compensating single pipe system suitable for use as a pipe for cold drinking water, cooling water and wastewater. Corrosion-resistant carrier pipe made of PE 100 according to DIN 12201. Thermal, elastic and CFC-free foam insulation made of cross-linked PE-X with a closed micro-cell structure. Minimal water absorption of <1% according to DIN 53428. A corrugated HDPE jacket pipe provides high-grade protection of the pipe system. Available with or without self-regulating heating cable.



AustroPEX CW	AustroPEX CW w/ frost protection	PE 100 (da x s)	PE 100 (di)	Jacket pipe (da)	Weight	Coil length
Art. No.	Art. No.	mm	DN	mm	kg/m	m
115APH090125	115APF090125	25x2,3	20	90	1,0	100
115APH090132	115APF090132	32x2,9	25	90	1,1	100
115APH125140	115APF125140	40x3,7	32	125	1,4	100
115APH125150	115APF125150	50x4,6	40	125	2,0	100
115APH160163	115APF160163	63x5,8	50	160	2,8	100
115APH160175	115APF160175	75x6,8	65	160	3,2	100
115APH160190	115APF160190	90x8,2	75	160	4,0	100
115APH200110	115APF200110	110x10,0	90	200	5,2	100
115APH200125	115APF200125	125x11,4	100	200	6,1	100

AustroPEX is a non-bonded pipe system according to EN 15632-3.

The longitudinal watertightness must be ensured by sealing the underground connections against possible (ground)water ingress, e.g. with heat shrink caps.

AustroPEX coil dimensions

Maximum coil length is 100m. The pipes can be cut to customer specific length (only in full meters).

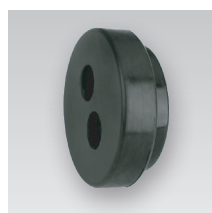
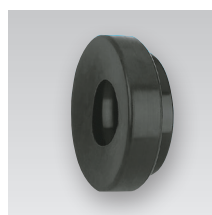
The pipe coils can be transported with the usual means of transport.

For detailed transport and storage regulations, see „Transport, storage, and installation of Austroflex pipes“ on page 40.

Jacket pipe (DA)	Pipe coil - length							
	25 m		50 m		75 m		100 m	
	D (m)	Ø (m)	D (m)	Ø (m)	D (m)	Ø (m)	D (m)	Ø (m)
90	0,2	1,8	0,3	1,8	0,4	1,9	0,4	2,1
125	0,3	1,9	0,4	2,1	0,5	2,1	0,7	2,2
145	0,3	2,0	0,5	2,2	0,6	2,2	0,8	2,2
160	0,4	2,0	0,6	2,2	0,7	2,3	0,8	2,3
200	0,6	2,0	0,8	2,3	1,1	2,3	1,4	2,3

Rubber end caps

Are used to prevent dust and moisture from entering the pre-insulated pipe system between the outer jacket and the carrier pipes.



Art. No.	Jacket pipe (DA)	Carrier pipe (da)
Rubber end cap single		
116ENS090025	90	25
116ENS090032	90	32
116ENS090040	90	40
116ENS125025	125	25
116ENS125032	125	32
116ENS125040	125	40
116ENS125050	125	50
116ENS125063	125	63
116ENS125075	125	75
116ENS145040	145	40
116ENS145050	145	50
116ENS145063	145	63
116ENS145075	145	75
116ENS160050	160	50
116ENS160063	160	63
116ENS160075	160	75
116ENS160090	160	90
116ENS175063	175	63
116ENS175075	175	75
116ENS175090	175	90
116ENS200075	200	75
116ENS200090	200	90
116ENS200110	200	110
116ENS200125	200	125
116ENS240090	240	90
116ENS240110	240	110
116ENS240125	240	125

Art. No.	Jacket pipe (DA)	Carrier pipe (da)
Rubber end cap double		
116ENS090025	90	2 x 25
116ENS125220	125	2 x 20
116ENS125225	125	2 x 25
116ENS125232	125	2 x 32
116ENS145225	145	2 x 25
116ENS145232	145	2 x 32
116ENS145240	145	2 x 40
116ENS160232	160	2 x 32
116ENS160240	160	2 x 40
116ENS160250	160	2 x 50
116ENS175232	175	2 x 32
116ENS175240	175	2 x 40
116ENS175250	175	2 x 50
116ENS200240	200	2 x 40
116ENS200250	200	2 x 50
116ENS200263	200	2 x 63
116ENS240250	240	2 x 50
116ENS240263	240	2 x 63
116ENS240275	240	2 x 75

Rubber end cap WW double		
116ENS125224	125	1x25 1x20
116ENS125234	125	1x32 1x20
116ENS145234	145	1x32 1x20
116ENS145241	145	1x40 1x25
116ENS160241	160	1x40 1x25
116ENS160252	160	1x50 1x32
116ENS175241	175	1x40 1x25
116ENS175251	175	1x50 1x25
116ENS175252	175	1x50 1x32
116ENS200252	200	1x63 1x32

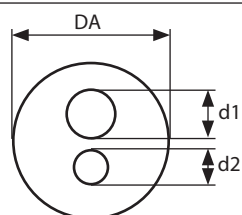
Rubber end cap Combi + WP		
116ENS125432	125	3x32 1x25
116ENS145426	145	3x25 1x20
116ENS145440	145	2x40 1x32 1x25
116ENS160404	160	2x32 1x25 1x20
116ENS160436	160	3x32 1x20
116ENS160450	160	2x50 1x32x 1x25
116ENS200249	200	3x40 1x25

Heat shrink end caps

Are used to prevent the penetration of pressurized (ground) water between the outer jacket and the carrier pipes in the piping system.



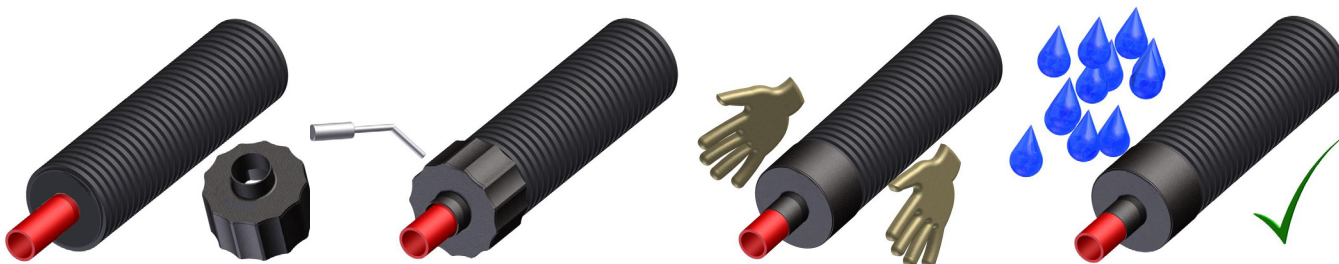
Art. No.	Jacket pipe (DA)	Carrier pipe (da)
Heat shrink end cap single		Carrier pipe dimension d1
116ENO090030	90 - 75	40 - 32 - 25
116ENO125020	125 - 90 - 75	25 - 20
116ENO125040	125 - 90 - 75	50 - 40 - 32 - 25
116ENO145050	145 - 125 - 90 - 75	50 - 40 - 32 - 25
116ENO145070	145 - 125 - 90	90 - 75 - 63 - 50 - 40
116ENO200080	175 - 160 - 145	90 - 75 - 63 - 50
116ENO200090	240 - 200 - 175 - 160 - 145	140 - 125 - 110 - 90 - 75
116ENO250100	250 - 240 - 200 - 175 - 160 - 145	140 - 125 - 110 - 90 - 75
116ENO250110	250 - 240	160 - 140 - 125
Heat shrink end cap double		Carrier pipe dimensions d1 / d2
116ENO125220	125 - 90	32 - 25 - 20 / 20
116ENO145230	160 - 145 - 125	50 - 40 - 32 - 25 / 50 - 40 - 32 - 25 - 20
116ENO145240	175 - 160 - 145	40 - 32 - 25 / 25 - 20
116ENO200260	200 - 175 - 160 - 145	40 - 32 - 25 / 40 - 32 - 25
116ENO200270	200 - 175 - 160 - 145	50 - 40 - 32 - 25 / 50 - 40 - 32 - 25
116ENO200290	250 - 240 - 200 - 175	75 - 63 / 75 - 63
116ENO240205	240 - 200 - 175	DA 63 - 25 / 63 - 25
116ENO240210	250 - 240 - 200 - 175	90 - 75 - 63 / 90 - 75 - 63
Heat shrink end cap Combi		Carrier pipe dimensions d1 / d2 / d3 / d4
116ENO160463	160 - 145 - 125 - 90 - 75	d1 / d2 / d3 / d4: 63 - 50 - 40 - 32 - 25 - 20



Installation guidelines – heat shrink end caps

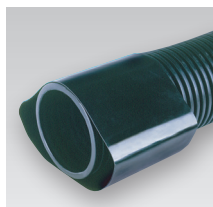
1. Slide the shrink end cap over the carrier pipe and the jacket pipe of the district heating pipe.
2. Using a hot air blower or gas burner with a soft, yellow flame, carefully shrink the shrink end cap.
Attention with gas burners: Do not use a too hot (blue) flame!
3. Press the shrunk-on end cap firmly with protective gloves.
4. The end of the pipe is now sealed watertight.

Attention: Wear heat-resistant work gloves!



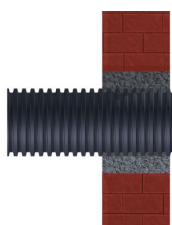
Wall feed-through for non-pressing water

The wall feed-through for non-pressing water comprises a profiled HDPE pipe and shrink sleeve. After the pipe is bricked in (protruding 10 cm out of the outside wall) the AUSTROPEX pipe is fed through and sealed with the included shrink sleeve.

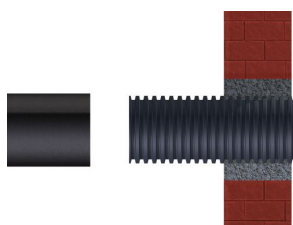


Art. No.	Jacket pipe (DA)	Wall feed-through (da)	Length
	mm	mm	mm
116HEN125	125	160	500
116HEN145	145	175	500
116HEN160	160	200	500
116HEN175	175	235	500
116HEN200	200	250	500
116HEN250	250 +240	280	500

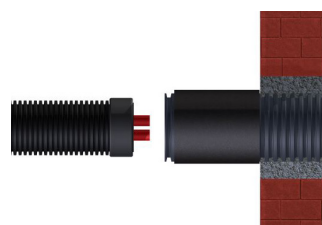
Installation guidelines – wall feed-through for non-pressing water



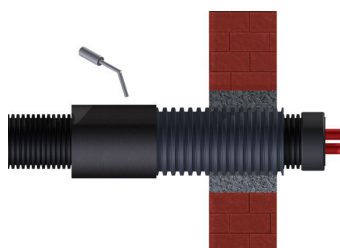
The wall sleeve is bricked in, whereby it must protrude 10 cm from the outer wall.



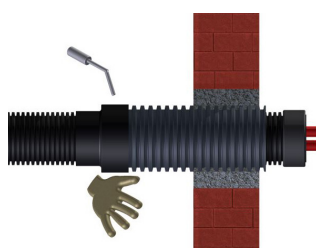
The shrink sleeve is pushed over the wall sleeve.
NEVER CUT THE SHRINK SLEEVE IN LONGITUDINAL DIRECTION!!



The pipe is pushed through the bricked-in wall sleeve.



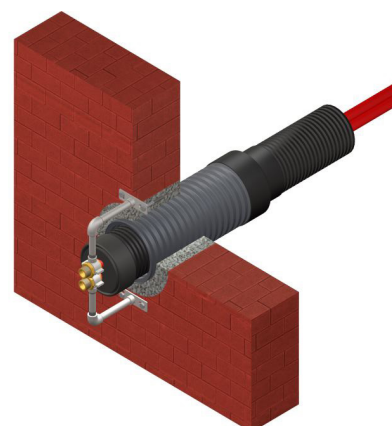
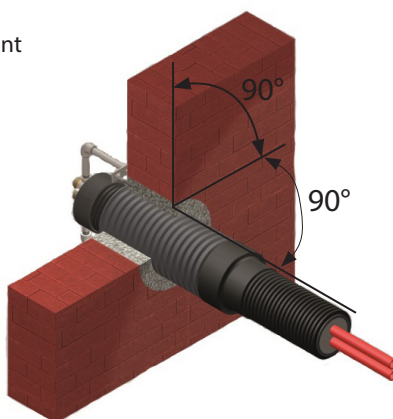
The 20 cm wide shrink sleeve is shrunk half over the wall sleeve and half over the pipe. With a silent, yellow flame, the shrink sleeve is **CAREFULLY** heated with the help of a gas burner (never use a noisy, blue flame).
Attention: Wear heat-resistant work gloves!!



Press regularly with heat-resistant gloves during the shrinking process.



The wall feed-through for non-pressing water has now been installed.



House entry wall collar

Wall collars seal walls against water and other materials where AustroPUR, AustroPEX and EW-E pipes enter through walls, especially for floor and wall penetrations where jacket pipes are poured directly into the concrete.



Wall collar	Jacket pipe (DA)	Sealing area Jacket pipe	Width	Outer diameter wall collar
Art. No.	mm	mm	mm	mm
116HEK125	125	84 - 92	60	184
116HEK145	145	120 - 130	60	222
116HEK160	160	135 - 148	60	240
116HEK175	175	175 - 190	60	282
116HEK200	200	195 - 210	60	302
116HEK240	240	245 - 260	60	352

Wall collars are used for hydrostatic sealing when it is no longer possible to add a wall sleeve or do a core drilling afterwards. It is suitable for the passage of pipes through floor slabs, walls, shaft entrances or through waterproof concrete.

Installation guidelines – wall collars

1. Clean the surface of the pipe jacket to be poured into the concrete.

2. Slide the wall collar onto the jacket pipe.

Note: Do not use mineral oils as lubricants!

These could damage the material of the wall collar (EPDM).

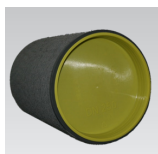
3. Slide the wall collar up to the middle of the wall / floor slab.

4. Attach and tighten straps around the wall collar on both sides.

5. The pipe can now be positioned and poured into the concrete.

Wall sleeve

The PVC wall sleeve with special surface roughening serves as an alternative to a fiber cement wall sleeve or core drilling, for precisely fitting a house entry for pressing water (116HED). Also two closing covers are included in the scope of delivery.



Wall sleeve	Outside diameter wall sleeve (AD)	Inside diameter wall sleeve (ID)*	Length	Matching 116HED
Art. No.	mm	mm	mm	mm
116HEF150400	158	150	400	116HED090150
116HEF200400	240	200	400	116HED125200 116HED145200 116HED160200
116HEF250400	280	250	400	116HED145250 116HED160250 116HED175250
116HEF300400	315	300	400	116HED200300 116HED250300

* The inside diameter (ID) of the casing corresponds to a core drill hole with the specified dimensions and is suitable for our house entries for pressing water (116HED).

Installation guidelines – Wall sleeve

1. Position the wall sleeve in the formwork with formwork aids (insert closing covers).
2. Installation in the floor slab, ceiling, or wall masonry.
3. Carefully compact the concrete around the wall sleeve.

Note: Only insert the house entry for pressing water (Art. No. 116HED) into the wall sleeve after it has been set in concrete.

If the PVC lining pipes need to be adapted on site, please note the following:

1. Always wear a dust mask when cutting / processing the PVC wall sleeve.
2. Cut / process PVC only with hand-operated or slow-running devices equipped with a dust collector.

Please note our installation guidelines for house entries for pressurized water.

House entry for pressing water

This watertight wall seal can be used directly in core drillings and in embedded plastic or fiber cement wall sleeves. The house entry for pressing water consists of rubber sealing rings between two pressure plates, which can be pressed together with screws to ensure the seal.



House entry for pressing water	Jacket pipe (DA)	Sealing area / Core drilling	Wall sleeve
Art. No.	mm	mm	Art. No.
116HED125200	125	198 - 202	116HEF200400
116HED145200	145	198 - 202	116HEF200400
116HED145250	145	248 - 252	116HEF250400
116HED160200	160	198 - 202	116HEF200400
116HED160250	160	248 - 252	116HEF250400
116HED175250	175	248 - 252	116HEF250400
116HED200300	200	298 - 302	116HEF300400
116HED240350	240	348 - 352	116HEF300400
116HED250300	250	298 - 302	116HEF300400
116HED250350	250	348 - 352	116HEF300400

Installation guidelines – House entry for pressing water

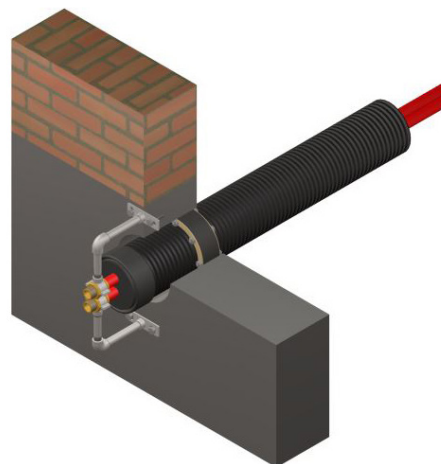
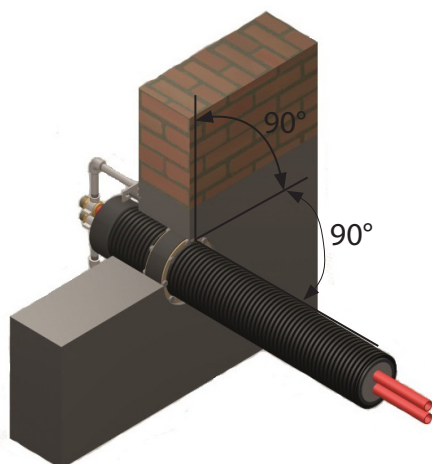
1. Clean the wall sleeve/core drilling and the pipe jacket.
2. Check the given wall sleeve / core bore diameter and jacket pipe diameter with the information on the wall seal kit.
3. Position the wall seal in the wall sleeve/core drill hole flush with the outside of the wall. To make it possible to tighten the screws afterwards, the nuts should face inside. Now slide the pipe through the wall seal into the building.

4. Tighten the nuts with a torque wrench according to the table below (or the information on the wall seal).

Notes:

- Core drill holes should be coated with epoxy resin protect the concrete and to smooth out any cavities / grooves
- The split wall seal is available for subsequent assembly
- Carrier pipes must be centered and supported

Max. torque in Nm	
Nuts	Torque
M 6	5 Nm
M 8	8 Nm for standard wall seals 15 Nm for split wall seals
M 10	22 Nm
M 12	26 Nm



Fixed point clamps

Our fixed point clamp is available as a version for single and double pipes. They prevent movements of the carrier pipes at the house connection points which can occur due to temperature changes (dilatation).



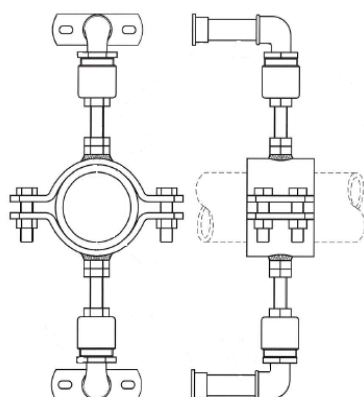
PE-Xa pipe	Fixed point clamp single
Type	Art. No.
1x25	116AFS125
1x32	116AFS132
1x40	116AFS140
1x50	116AFS150
1x63	116AFS163
1x75	116AFS175
1x90	116AFS190
1x110	116AFS199
1x125	116AFS200



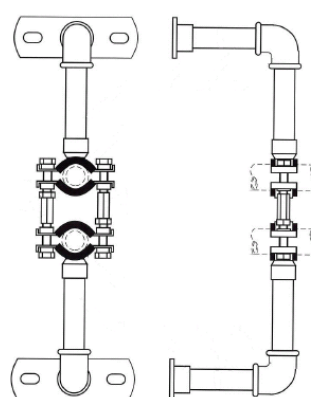
PE-Xa pipes	Fixed point clamp double
Type	Art. No.
2x20	116AFS225
2x25	116AFS225
2x32	116AFS232
2x40	116AFS225
2x50	116AFS232
2x63	116AFS232
2x75	116AFS240

Installation guidelines – fixed point clamps

Single:



Double:



Install the selected house entry set and let the entire pre-insulated pipe protrude sufficiently far into the boiler room. The pipe should protrude at least 400mm from the inside wall into the room to enable easy installation of the fixed point clamps.

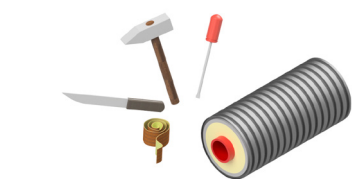
Remove the pipe insulation over a length of 300mm.

Close the open pipe system with a shrink end cap or a rubber end cap.
Now attach the connection fittings.

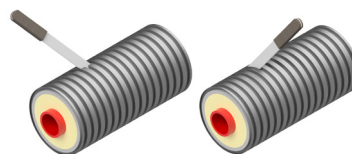
Mount the fixed point clamps directly behind the fittings so that the fittings can be positioned next to the clamps.
The base plates must be firmly anchored in the wall.
Use suitable fastening material for stone or brick walls.
Tighten all screws securely.

Carry out a documented pressure test after completing the work.
Documents for this test can be found on the package insert, on the pipe coil, and in this catalogue on page 42/43.

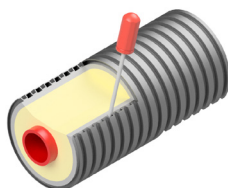
Installation guidelines – Stripping of the AustroPUR pipe



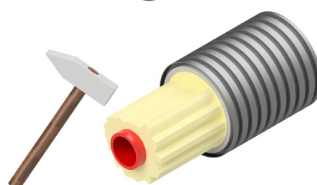
The following tools are required for stripping the AustroPUR district heating pipe: Knife, screwdriver, hammer and sandpaper tape.



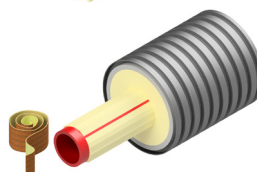
Using the knife, cut through the outer pipe jacket first in the circumferential direction and then in the longitudinal direction. ATTENTION! Don't cut too deep! The PE-Xa pipe may not be damaged.



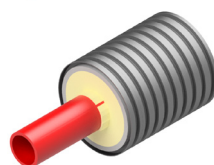
Use the screwdriver to remove the remaining outer jacket and the PEX insulation.



Use a hammer to knock off the PUR foam. Do not damage the PE-Xa pipe!



Completely remove the PUR foam residues from the medium pipe with the sandpaper tape.



The AustroPUR is now completely stripped and can be processed further.

Soft PEX foam insulation package

The soft PEX foam insulation package consists of a PEX mat plus matching adhesive tape and a sealant to seal the insulation kit. Note: the shelf life of the sealant is 3 months.



Art. No.	Insulation package	Weight
		kg
116ISD500	PEX insulation package for universal I-, L- & T-insulation sets (116ISE003; 116ISL002; 116IST005)	0,9
116ISD900	PEX insulation package for double T-insulation set (116IST004)	2,6

Installation guidelines – Soft PEX foam insulation package

After the carrier pipes have been connected to each other and properly checked for leaks, they can be insulated with the PEX soft foam mat.

To do this, the mat is cut to length and wrapped around the carrier pipes so that they are completely covered.

Now the mat is closed with the enclosed rubber band.

You can then continue with the assembly of the insulation kit.

PUR insulation package

The PUR insulation package consists of a 2-component polyurethane foam, a drill to prepare the wholes for the filling, three matching sealing plugs, adhesive patches, and a sealing compound for the insulation set. Note: 3 months durability.



Art. No.	Insulation package	Weight
		kg
116ISD011	Suitable for pipe sleeve 125 + 145 + 160 (116ISL125 ; 116ISL145; 116ISL160)	2,40
116ISD020	Suitable for pipe sleeve 175 + 200 (116ISL175 ; 116ISL200)	3,10
116ISD038	Suitable for pipe sleeve 240 + 250 (116ISL250)	4,60
116ISD042	Suitable for insulation set for straight and elbow connection (116ISL002; 116ISE003)	5,10
116ISD058	T-Connection insulation shells (116IST005)	6,30
116ISD087	Double T-Connection (116IST004)	10,00

Installation guidelines – PUR insulation package

Components must be stored at room temperature (+15°C to max. +25°C) and protected from sunlight. During processing, the temperature of the foam components must be min. 20°C and max. 25°C. Higher temperatures accelerate the reaction time and make proper processing impossible. Temperatures below 20°C lead to poor mixing results. The coupling to be foamed and the district heating pipe should have a minimum temperature of +5°C and a maximum of +50°C.

Before foaming the pipe sleeve, mix the two components thoroughly until the mixture has a uniform light brown colour. Carry out the mixing process quickly, as the foam components start to react as soon as they come into contact with each other. Proper mixing is essential for foam quality. Press the mixture from the container into the sleeve.

Temperature °C	Mixing time sec.	Processing time sec.
25°	20	30
20°	25	40
15°	40	50

Work hygiene information

The product should not be used in closed rooms without mechanical ventilation or fresh air masks. Processing must be carried out in such a way that the inhalation of fumes and skin contact is avoided. Use suitable work clothing, gloves, and goggles. Be careful when working with an open flame, the foam is flammable. Do not inhale smoke, fumes, and dust!

First Aid

If fumes are inhaled, move the affected person immediately to fresh air and keep him in a stable position. In case of splashes in the eyes, rinse immediately with running water for at least 15 minutes. Remove contaminated clothing immediately and wash contaminated skin with soap and water. Seek medical attention and show this datasheet or safety data sheet.

In case of fire

Extinguish with powder, foam, or carbon dioxide. Do not inhale fumes and vapours. Clean burnt skin immediately with cold water and cool. Consult a doctor for further treatment. Caution! Isocyanate reacts strongly with water.

After spilling

Avoid any fire hazard! Do not inhale fumes! Soak up with a chemical binder and dispose together with cleaning cloths and other remnants at a hazardous waste disposal. For information on components A (isocyanate) and B (polyol mixture), see the respective safety data sheet.

Inspection Chamber



	Outer casing (DA)	Diameter	Height	Weight
Art. No.	mm	mm	mm	kg
117ESD200	200 + 175 + 160 + 145 + 125	810	770	35,00
117ESD250	250 + 200 + 175 + 160 + 145 + 125	1200	800	55,00

As an alternative to the insulation sets, a chamber made of impact-resistant polyethylene can be used. It has 6 marked outlets. Each outlet can be cut to different sizes (125, 145, 175, or 200mm). Various connections can be made in this chamber and shut-off valves can be mounted. The chamber is supplied with a cover, stainless steel screws, a sealing adhesive, and an installation instruction.

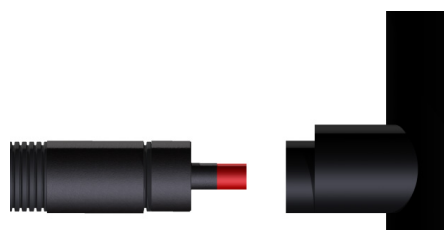
Installation guidelines – Inspection Chamber

The outlets of the chamber can be cut with a hand saw to adapt them to the respective jacket pipe diameters.



In preparation for connecting the pipes in the chamber, they are sealed with a shrink end cap. To do this, push the shrink end cap over the outer casing and the carrier pipe. Use a hot air gun or gas burner with a gentle yellow flame (DO NOT use a blue flame) to carefully shrink the cap.

The use of a shrink end cap is mandatory. Caution: Wear heat-resistant work gloves!



Slide the shrink sleeve over the pipe before connecting the pipes in the chamber. Then the pipes are guided into the chamber and all the necessary connections and joints are made in the chamber.

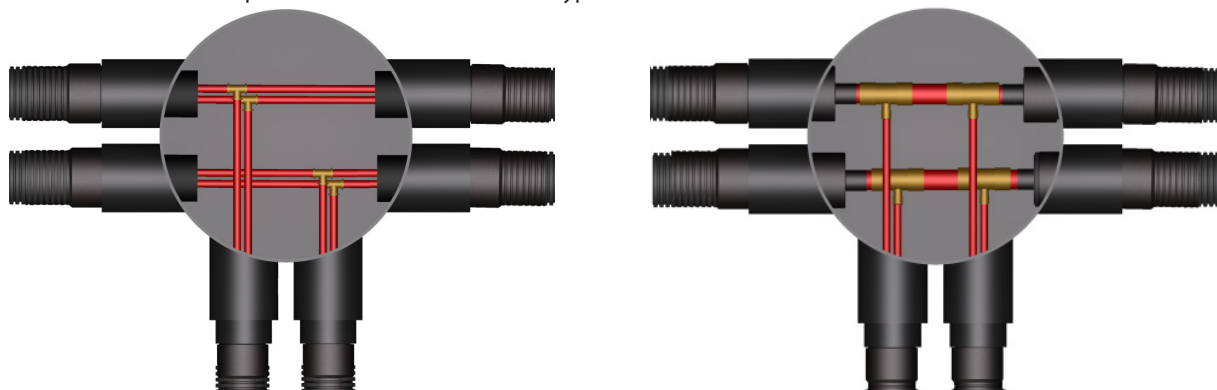


Carefully heat the shrink sleeve with a hot air gun or a gas burner to ensure the sealing of the outer jacket to the chamber.

Caution: Wear heat-resistant work gloves!

Connection options

The chamber offers several options for different connection types:



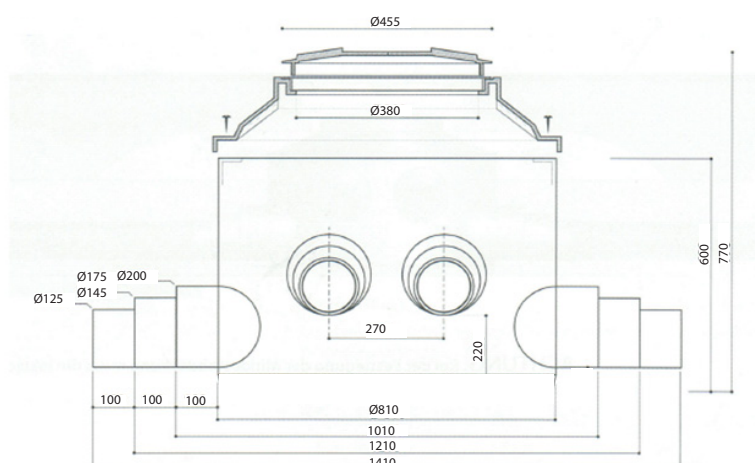
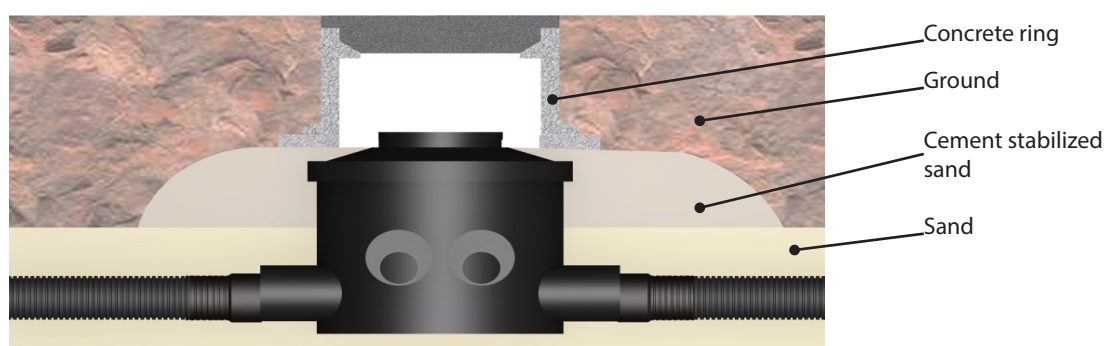
Sealing the chamber

The chamber is sealed with the supplied sealing material, which should be applied with a thickness and a width of 1 cm over the complete circumference. Position the cover. Gradually tighten the 6 stainless steel screws clockwise. Do not forget to carry out the pressure test before closing the chamber.



Covering the chamber

After the chamber has been completely sealed and closed, it can be covered with sand. Make sure that the chamber is fully seated on the ground and that the pipes are straight. After covering half of the chamber with sand, a layer of cement stabilized sand should be filled up to the height of the lid. Finally, a concrete ring with a cover should be placed to keep the chamber easily accessible.



Insulation Shells

The insulating shell set consists of two ABS plastic half-shells, stainless steel screws, a lubricant to prevent cold welding of the screws, and the installation instructions.

ATTENTION: Do not forget to order the matching insulation tube bit and the desired insulation package!

Insulation tube bit

The insulating tube bit will be delivered with the matching shrink sleeves.



Art. No.	Outer casing (DA)	L	Weight
	mm	mm	kg
116IRE125090	125 + 90	230	0,90
116IRE145150	145	230	0,95
116IRE175150	175 + 160	230	1,00
116IRE200200	200	230	1,10
116IRE250200	250 + 240	230	1,25

Insulation shells for T-connection



Art. No.	Outer casing (DA)	L	B	H	Weight
		mm	mm	mm	kg
116IST005	universal	1070	730	300	5,75

Insulation shells for elbow connection 90°



Art. No.	Outer casing (DA)	L	B	H	Weight
		mm	mm	mm	kg
116ISE003	universal	730	730	300	4,25

Insulation shells for straight connection



Art. No.	Outer casing (DA)	L	B	H	Weight
		mm	mm	mm	kg
116ISL002	universal	1070	160	300	4,75

Installation guidelines – Insulation Shells

Preliminary note:

During the entire assembly process, always ensure that all components are kept dry, grease-free, and clean.



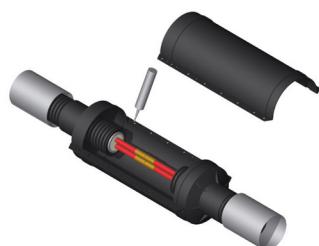
1. Lay the pipes as straight and stress-free as possible. When removing the outer casing and insulation, make sure that 10 cm of the insulated pipe protrudes into the half-shell.

2. Slide the shrink sleeves and insulation tube bits onto the pipe. Perform the pressing/ welding (assembly instructions „pressing”) of the carrier pipes, and check the system for leaks. Carry out a pressure test!



3. Wrap the carrier pipe with the insulation material and secure it with the provided adhesive tape.
(When using the PU insulation package, skip this step)

4. Clean the adhesive surfaces of the half-shells and inserts with a non-greasy cleaner (e.g. ethanol/acetone).
Apply 5 mm of sealant along all grooves of the lower half shell.



5. Insert the insulating tube bits into the lower half shell with a click (pay attention to the marking „TOP”).

6. Apply the remaining sealant to the upper half-shell along all grooves (about 5mm thick).



7. Now join the upper and lower parts of the insulation set and tighten the screws.
Attention: Put oil on the thread before tightening screws!

8. Clean the outer casing and insulating pipe bits at their outlets. Remove the protective wrapping from the shrink sleeves. One half of the shrink sleeve covers the outer casing, the other half the insulation shell. Remove the paper on the inside of the shrink sleeve before shrinking.



9. Shrink with a soft flame from a gas burner or a hot air gun at medium temperature. First, shrink a strip approx. 4 cm wide in the center in the circumferential direction. Starting from this strip, shrink it first in the direction of the outer casing and then to the half-shell insert.

Caution: Wear heat-resistant work gloves! Only use a soft, yellow flame when working with a gas burner.

Insulation set for straight connection (Pipe sleeve)



Art. No.	Outer casing (DA)	L	Insulation kit (da)	Weight
	mm	mm	mm	kg
116ISL759	90	700	110	2,10
116ISL125	125	710	140	3,00
116ISL145	145	830	160	3,00
116ISL160	160	830	180	4,00
116ISL175	175	830	200	4,00
116ISL200	200	1000	225	6,00
116ISL250	250 + 240	1000	280	10.5

Installation guidelines – Pipe sleeve

The insulation set consists of a pipe sleeve, insulation, and two shrink sleeves.

1. Slide the pipe sleeve and shrink sleeve over the district heating pipe. (The use of heat shrink end caps is mandatory due to warranty requirements.)
2. Connect the carrier pipes with press couplings. Apply the insulation around the carrier pipe so that the couplings are fully insulated. Perform a pressure test!
3. Push back the pipe sleeve so that the couplings are covered and the outer casing reaches on both sides at least 10 cm into the pipe sleeve.
4. Use a hot air gun or gas burner (soft, yellow flame) to carefully shrink the two shrink sleeves half onto the pipe sleeve and half onto the district heating pipe.

Caution with gas burners: Do not use too hot (blue) a flame!



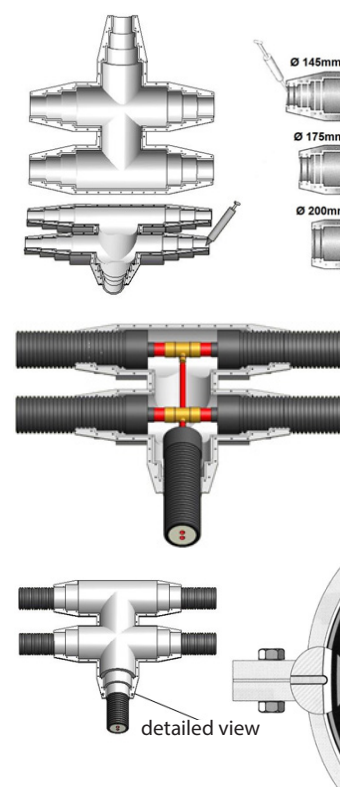
Insulation set for Double T-Connection



Art. No.	Outer casing (DA)	L	B	H	Weight
		mm	mm	mm	kg
116IST004	200+175+145+125	1200	1200	270	14,00

Installation guidelines – Double T-Connection

1. There is no difference between the pre-drilled half-shells. The bottom and top parts are identical. The insulation set is suitable for outer pipe casings with 125, 145, 175, or 200mm diameter. The half-shells can be cut along the gradation to obtain the required diameter.
2. Remove a sufficient amount of PE-Xa pipe insulation (Caution! Do not damage the PEXa pipe), so that the couplings can be mounted in the middle of the insulation set. Ensure that the pre-insulated district heating pipe exceeds the 200mm pipe diameter by 10cm. To determine the correct distance between the carrier pipes, half-shells can be used as a template.
3. Connect the carrier pipes according to the installation instructions. Perform pressure test!
4. Wrap the insulation material around the carrier pipe and secure it with the provided adhesive tape. (When using the PU insulation package, skip this step).
5. In both half shells, there are two grooves next to each other in the area of the pipe holder. Inject about 5 mm of sealant into these grooves.
6. Place the connected pipes in one of the two half-shells. Apply the sealant with a thickness of about 5mm onto the edge of the upper and lower half-shells.
7. Carefully press the two half shells together. Tighten the stainless steel screws. Make sure that the sealant drips out on the outer sides after the screws have been tightened.



Outer jacket pipe accessories

Repair tape

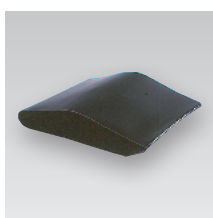


The repair tape is suitable for subsequent repair of any local damage to the outer casing. Depending on the outer casing diameter, the tape can be cut to the required length.

Art. No.	Lenght	Width
	mm	mm
116REP001	1000	225

Shrink sleeve

Closed shrink sleeves are required as an accessory to the chamber. Also suitable for repairing any local damage to the outer casing. Must not be cut for assembly and is therefore mainly suitable for repairs near the pipe ends.



Art. No.	Outer casing (DA)	Width
	mm	mm
116SSS090	90	250
116SSS125	145 + 125	250
116SSS175	175 + 160	250
116SSS200	200	250
116SSS250	250 + 240	385

Closing shrink end cap

Closing shrink end cap for sealing blind lines in the ground, which will be connected at a later time.



Art. No.	Outer Casing (DA)
	mm
116ENO125000	145 + 125 + 90 + 75
116ENO175000	175 + 160 + 145 + 125
116ENO200000	200 + 175 + 160 + 145
116ENO250000	250 + 240 + 200 + 175 + 160 + 145 + 125

Press couplings PN6 - Heating

Press couplings for use on piping systems with carrier pipes PN6 (SDR11) for heating, cold or cooling water. The press couplings consist of a fitting with a long attachment pipe for optimal pipe grip and matching sliding sleeves which are pressed with suitable tools. We recommend the use of press fittings for all underground connections, as no retightening of the connections are required after the pressure test has been completed. We can provide suitable pressing tools for three days free of charge. If required, it is also possible to rent the equipment.

Press couplings PE-Xa, PN 6 - Heating



with male thread		
Art. No.	PE-Xa (daxs)	Thread (AG)
	mm	Inch
116SHA020034	20x1,9	¾"
116SHA025034	25x2,3	¾"
116SHA032001	32x2,9	1"
116SHA040054	40x3,7	1 ¼"
116SHA050064	50x4,6	1 ½"
116SHA063002	63x5,8	2"
116SHA075052	75x6,8	2 ½"
116SHA090003	90x8,2	3"
116SHA110004	110x10,0	4"
116SHA125005	125x11,4	5"

with welding end	
Art. No.	PE-Xa (daxs) - steel (daxs)
	mm
116SHS025026	25x2,3 - 26,9x2,3
116SHS032033	32x2,9 - 33,7x2,6
116SHS040042	40x3,7 - 42,4x2,6
116SHS050048	50x4,6 - 48,3x2,6
116SHS063060	63x5,8 - 60,3x2,9
116SHS075076	75x6,8 - 76,1x2,9
116SHS090088	90x8,2 - 88,9x3,2
116SHS110114	110x10,0 - 114,3x3,6
116SHS125139	125x11,4 - 139,7x3,6
116SHS160168	160x14,6 - 168,3x4,1

Press couplings PE-Xa, PN 6 - Heating



Straight coupler		
Art. No.	PE-Xa (daxs)	PE-Xa (da-da)
	mm	mm
116SHK020020	20x1,9	20 - 20
116SHK025025	25x2,3	25 - 25
116SHK032032	32x2,9	32 - 32
116SHK040040	40x3,7	40 - 40
116SHK050050	50x4,6	50 - 50
116SHK063063	63x5,8	63 - 63
116SHK075075	75x6,8	75 - 75
116SHK090090	90x8,2	90 - 90
116SHK110110	110x10,0	110 - 110
116SHK125125	125x11,4	125 - 125
116SHK160160	160x14,6	160 - 160

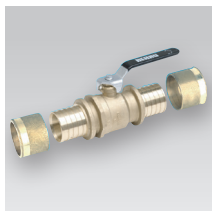
Reducing coupler	
Art. No.	PE-Xa (da-da)
	mm
116SHK025020	25 - 20
116SHK032025	32 - 25
116SHK040020	40 - 20
116SHK040032	40 - 32
116SHK050032	50 - 32
116SHK050040	50 - 40
116SHK063050	63 - 50
116SHK075063	75 - 63
116SHK090075	90 - 75
116SHK110090	110 - 90

Elbow-Press couplings 90° PE-Xa, PN 6 - Heating



Elbow-Press coupling 90°		
Art. No.	PE-Xa (daxs)	PE-Xa (da-da)
	mm	mm
116SHW020020	20x1,9	20 - 20
116SHW025025	25x2,3	25 - 25
116SHW032032	32x2,9	32 - 32
116SHW040040	40x3,7	40 - 40
116SHW050050	50x4,6	50 - 50
116SHW063063	63x5,8	63 - 63
116SHW075075	75x6,8	75 - 75
116SHW090090	90x8,2	90 - 90
116SHW110110	110x10,0	110 - 110

Press ball valve PE-Xa, PN 6 - Heating



Art. No.	PE-Xa (da - da / AG)
	mm
116SKS020020	20 - 20
116SKS025025	25 - 25
116SKS032032	32 - 32
116SKS040040	40 - 40
116SKS050050	50 - 50
116SKS063063	63 - 63
116SKA025001	25 - 1" AG
116SKA032001	32 - 1" AG

Press T-piece PE-Xa, PN 6 - Heating



Art. No.	PE-Xa (da-da-da)	Art. No.	PE-Xa (da-da-da)
	end-branch-end (mm)		end-branch-end (mm)
116SHT202020	20-20-20	116SHT634063	63-40-63
116SHT202520	20-25-20	116SHT633263	63-32-63
116SHT252525	25-25-25	116SHT632563	63-25-63
116SHT252025	25-20-25	116SHT632063	63-20-63
116SHT252520	25-25-20	116SHT635050	63-50-50
116SHT252020	25-20-20	116SHT634050	63-40-50
116SHT323232	32-32-32	116SHT633250	63-32-50
116SHT322032	32-20-32	116SHT634040	63-40-40
116SHT322532	32-25-32	116SHT757575	75-75-75
116SHT323225	32-32-25	116SHT756375	75-63-75
116SHT322525	32-25-25	116SHT755075	75-50-75
116SHT404040	40-40-40	116SHT754075	75-40-75
116SHT403240	40-32-40	116SHT753275	75-32-75
116SHT402540	40-25-40	116SHT752575	75-25-75
116SHT402040	40-20-40	116SHT756363	75-63-63
116SHT403232	40-32-32	116SHT755063	75-50-63
116SHT505050	50-50-50	116SHT753263	75-32-63
116SHT504050	50-40-50	116SHT909090	90-90-90
116SHT503250	50-32-50	116SHT906390	90-63-90
116SHT502550	50-25-50	116SHT904090	90-40-90
116SHT502050	50-20-50	116SHT903290	90-32-90
116SHT503240	50-32-40	116SHT111010	110-110-110
116SHT502540	50-25-40	116SHT116311	110-63-110
116SHT636363	63-63-63	116SHT115011	110-50-110
116SHT637563	63-75-63	116SHT113211	110-32-110
116SHT635063	63-50-63		

Press Coupling PN 10 - Sanitary

Press couplings for use on piping systems with carrier pipes PN10 (SDR7.4) for sanitary applications. The press couplings consist of a fitting with a long attachment pipe for optimal pipe grip and matching sliding sleeves which are pressed with suitable tools. We recommend the use of press fittings for all underground connections, as no retightening of the connections are required after the pressure test has been completed. We can provide suitable pressing tools for three days free of charge. If required, it is also possible to rent the equipment.

Press couplings PE-Xa/AG, PN 10 - Sanitary



Art. No.	PE-Xa (da x s)	Thread (AG)
	mm	Inch
116SHB020034	20x2,8	¾"
116SHB025034	25x3,5	¾"
116SHB032001	32x4,4	1"
116SHB040054	40x5,5	1¼"
116SHB050064	50x6,9	1½"
116SHB063002	63x8,7	2"

Press couplings PE-Xa, PN 10 - Sanitary



Straight coupler			Reducing coupler	
Art. No.	PE-Xa (da x s)	PE-Xa (da - da)	Art. No.	PE-Xa (da - da)
	mm	mm		mm
116SHL020020	20x2,8	20 - 20	116SHL025020	25-20
116SHL025025	25x3,5	25 - 25	116SHL032025	32-25
116SHL032032	32x4,4	32 - 32	116SHL040025	40-25
116SHL040040	40x5,5	40 - 40	116SHL040032	40-32
116SHL050050	50x6,9	50 - 50	116SHL050032	50-32
116SHL063063	63x8,6	63 - 63	116SHL050040	50-40
			116SHL063050	63-50

Elbow- Press couplings 90° PE-Xa, PN 10 - Sanitary



Art. No.	PE-Xa (da x s)	PE-Xa (da - da)
	mm	mm
116SHX020020	20x2,8	20 - 20
116SHX025025	25x3,5	25 - 25
116SHX032032	32x4,4	32 - 32
116SHX040040	40x5,5	40 - 40
116SHX050050	50x6,9	50 - 50
116SHX063063	63x8,7	63 - 63

Press T-piece PE-Xa, PN 10 - Sanitary



Art. No.	PE-Xa (da - da - da)
	end - branch - end (mm)
116SHU202020	20-20-20
116SHU202520	20-25-20
116SHU252525	25-25-25
116SHU252520	25-25-20
116SHU252020	25-20-20
116SHU252025	25-20-25
116SHU323232	32-32-32
116SHU323225	32-32-25
116SHU322025	32-20-25
116SHU322032	32-20-32
116SHU322525	32-25-25
116SHU322532	32-25-32
116SHU404040	40-40-40
116SHU402040	40-20-40
116SHU402540	40-25-40
116SHU403232	40-32-32
116SHU403240	40-32-40
116SHU505050	50-50-50
116SHU503240	50-32-40
116SHU502550	50-25-50
116SHU503250	50-32-50
116SHU504050	50-40-50
116SHU636363	63-63-63
116SHU633263	63-32-63
116SHU635063	63-50-63

All press couplings include the matching sliding sleeves.
 We are happy to provide suitable pressing tools free of charge for three days.
 If needed, it is also possible to rent the equipment.

Installation guidelines – Press couplings



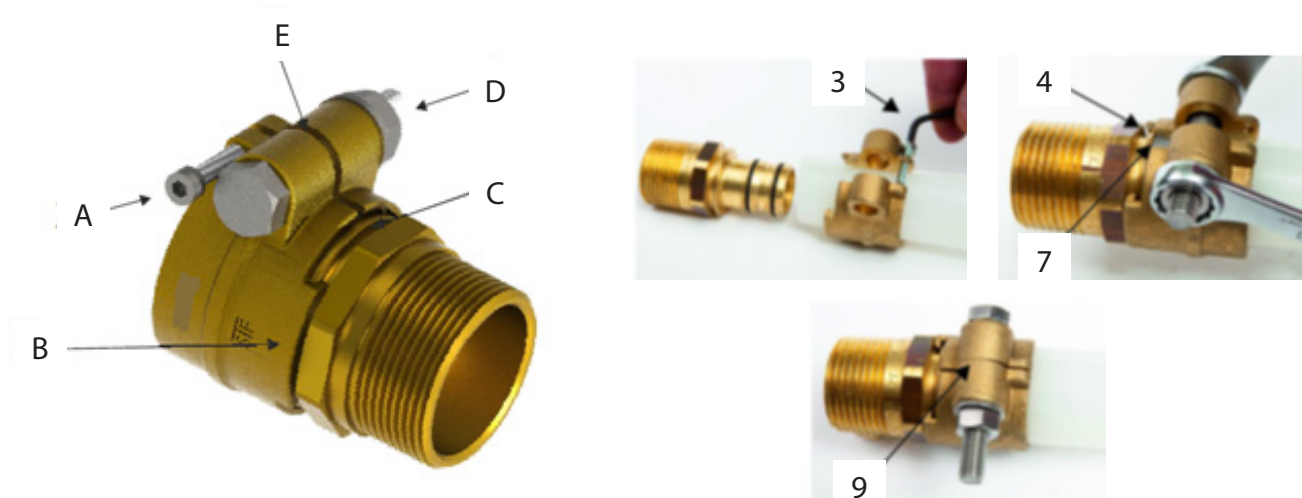
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1. Cut the pipe with a pipe cutter (for dimensions from 125mm diameter with a pipe cutter) burr-free and rectangular to the desired dimension.
2. Push the sliding sleeves over the pipe. The inner chamber must face towards the end of the pipe.
3. Insert the expansion tool as far as possible and do not tilt. Ensure that the sliding sleeve is not in the expansion zone by sliding it back from the pipe end. Expand the pipe twice, offset by 30°.
4. Insert the fitting into the pipe. After a short time the fitting will be firmly embeded in the pipe, this time period can be extended by holding the expansion pressure with the expansion head fully open. There must be an even gap between the fitting collar and the end of the pipe (in case of large dimensions, it may be necessary to align the position using a rubber hammer).
5. Place the pressing tool at the joint. Do not tilt the tool!
The tool must be applied over the entire surface and at a right angle.
6. Push the sliding sleeve to the fitting collar and rotate 90°, repeat the pressing operation. For large dimension lubricate the connecting area before pressing.

The joint can be loaded with pressure and temperature immediately after completion.

A leakage test in accordance with DIN 1988-2 must be carried out before assembling the insulation set and backfilling the trench. (See page 40/41)

Installation guidelines – Clamp couplings



1. Cut the pipe with a pipe cutter (for dimensions from 125mm diameter with a pipe cutter) burr-free and rectangular to the desired dimension.
2. Remove the fastening screw (E) and expand the clamping ring by tightening the screw (A). The entire length of the screw can be used to expand the clamping ring.
3. Slide the clamping ring over the pipe. Do not turn the clamping ring. The tab (B) on the inside of the clamping ring must point in the direction of the fitting.
4. Slide the pipe completely over the connection piece.
5. Slide the clamping ring over the pipe. Do not turn the clamping ring. The tab (B) on the inside of the clamping ring must point in the direction of the fitting.
6. Slide the clamping ring back so that it is fully seated over the fitting. The tab (B) of the clamping ring must lock into the groove (C) of the connecting body.
7. Unscrew the screw (A) again and remove it completely.
8. Install the fastening screw (D) and tighten it until the clamping ring is closed and has no gap (E). For larger diameters, it may be necessary to tighten the connection gradually and give the pipe time to deform (up to 30 minutes for large diameters).
9. A leakage test in accordance with DIN 1988-2 must be carried out before assembling the insulation set and backfilling the trench. (See page 42/43)

Make sure to lubricate the screw thread with copper grease to avoid cold welding of the stainless steel screws! After about 30 minutes, the clamping transition should be retightened with the same torque.

Clamp couplings

Clamp connections for use on piping systems with PN 6 (SDR 11) carrier pipes for heating, cold or cooling water and with PN 10 (SDR 7.4) carrier pipes for sanitary applications. The clamp connections are equipped with a long attachment pipe for maximum pipe grip and a clamp clip with stainless steel screws.

- Max. operating pressure: 6 bar (16 bar)
- Max. operating temperature: + 95 °C (+ 25 °C)
- PE-Xa and PE-pipes: SDR 11
- Material: CW617N
- Clamp coupling material: CW617N

Adapter with male thread PE-Xa/AG

The adaptor comes with tapered pipe thread.



Art. No.	PE-Xa (da x s)	Thread (AG)
PN 6	mm	Inch
116WHA020034	20x1,9	¾"
116WHA025034	25x2,3	¾"
116WHA032001	32x2,9	1"
116WHA040054	40x3,7	1¼"
116WHA050064	50x4,6	1½"
116WHA063002	63x5,8	2"
116WHA075212	75x6,8	2½"
116WHA090003	90x8,2	3"
116WHA110004	110x10,0	4"
116WHA125004	125x11,4	4"
116WHA140005	140x12,7	5"
116WHA160005	160x14,6	5"

Art. No.	PE-Xa (da x s)	Thread (AG)
PN 10	mm	Inch
116WSA020034	20x2,8	¾"
116WSA025034	25x3,5	¾"
116WSA032001	32x4,4	1"
116WSA040054	40x5,5	1¼"
116WSA050064	50x6,9	1½"
116WSA063002	63x8,7	2"

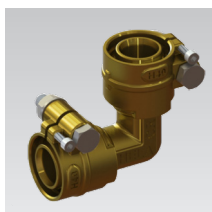
Straight coupler PE-Xa



Art. No.	PE-Xa (da x s)	PE-Xa (da - da)
PN 6	mm	mm
116WHK020020	20x1,9	20 - 20
116WHK025025	25x2,3	25 - 25
116WHK032032	32x2,9	32 - 32
116WHK040040	40x3,7	40 - 40
116WHK050050	50x4,6	50 - 50
116WHK063063	63x5,8	63 - 63
116WHK075075	75x6,8	75 - 75
116WHK090090	90x8,2	90 - 90
116WHK110110	110x10,0	110 - 110
116WHK125125	125x11,4	125 - 125
116WHK140140	140x12,7	140 - 140
116WHK160160	160x14,6	160 - 160

Art. No.	PE-Xa (da x s)	PE-Xa (da - da)
PN 10	mm	mm
116WSK020020	20x2,8	20 - 20
116WSK025025	25x3,5	25 - 25
116WSK032032	32x4,4	32 - 32
116WSK040040	40x5,5	40 - 40
116WSK050050	50x6,9	50 - 50
116WSK063063	63x8,7	63 - 63

Elbow 90° PE-Xa

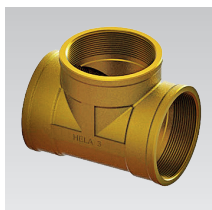


Art. No.	PE-Xa (da x s)	PE-Xa (da - da)
PN 6	mm	mm
116WHW020020*	20x1,9	20 - 20
116WHW025025	25x2,3	25 - 25
116WHW032032	32x2,9	32 - 32
116WHW040040	40x3,7	40 - 40
116WHW050050	50x4,6	50 - 50
116WHW063063	63x5,8	63 - 63
116WHW075075	75x6,8	75 - 75
116WHW090090	90x8,2	90 - 90
116WHW110110	110x10,0	110 - 110
116WHW125125	125x11,4	125 - 125
116WHW160160*	160x14,6	160 - 160

Art. No.	PE-Xa (da x s)	PE-Xa (da - da)
PN 10	mm	mm
116WSW020020	20x2,8	20 - 20
116WSW025025	25x3,5	25 - 25
116WSW032032	32x4,4	32 - 32
116WSW040040	40x5,5	40 - 40
116WSW050050	50x6,9	50 - 50
116WSW063063	63x8,6	63 - 63

*The individual components are delivered in loose parts and must be assembled/sealed on site.

T-piece PE-Xa



Art. No.	PE-Xa (da-da-da)
PN 6	end-branch-end (mm)
116WHT202020	20 - 20 - 20
116WHT252525	25 - 25 - 25
116WHT323232	32 - 32 - 32
116WHT403240	40 - 32 - 40
116WHT404040	40 - 40 - 40
116WHT504050	50 - 40 - 50
116WHT505050	50 - 50 - 50
116WHT635063	63 - 50 - 63
116WHT636363	63 - 63 - 63
116WHT757575	75 - 75 - 75
116WHT909090	90 - 90 - 90
116WHT111111	110 - 110 - 110
116WHT121212	125 - 125 - 125

Art. No.	PE-Xa (da-da-da)
PN 10	end-branch-end (mm)
116WST202020	20 - 20 - 20
116WST252525	25 - 25 - 25
116WST323232	32 - 32 - 32
116WST403240	40 - 32 - 40
116WST404040	40 - 40 - 40
116WST504050	50 - 40 - 50
116WST505050	50 - 50 - 50
116WST635063	63 - 50 - 63
116WST636363	63 - 63 - 63

Transport, storage, and installation of pipes

Armacell Austria pipes are supplied in coils or in bars, in the case of large carrier pipe diameters. The pipe ends are provided with protective caps to prevent the entry of dirt and moisture. During storage, make sure that the PE-Xa Carrier pipe is protected from sunlight and that there is no unwanted deformation of the coil. The pipes must be transported and stored in such a way that damage by sharp, pointed or angular objects is not possible. The pipe must not be dragged across the floor. At least 50mm wide textile straps (not ropes or chains) should be used to secure and handle the pipes. When manipulating the pipes with the help of forklifts, the pipe bundles should be protected against damage by suitable protective hoses or plastic pipe.

Laying pipes in the underground

Armacell Austria pipelines can be laid in the ground without any problems. The corrugated casing pipe provides the necessary protection for the insulation material and the carrier pipe. Any existing groundwater has no influence on the Armacell Austria system. The pipes can be laid directly from the roll into the trench. The outer casing must not be drilled through or damaged in the process. The carrier pipes must not be bent under any circumstances! The bending radii for the PE-Xa carrier pipes must be strictly observed. Pulling is only allowed at the ends of the carrier pipe, not at the outer casing. When removing the textile straps, beware of the pipe ends snapping back (cut the straps in layers). The specified minimum bending radius must not be undercut both during laying and in the final position of the pipe. To keep the pipes in the desired position, they can be loaded with sand at regular intervals. When laying larger pipes and lengths, pulling devices connected to a hand winch or pulley can be used for the carrier pipe. These devices must always be connected to the carrier pipe. The carrier pipe must be provided with an end cap to prevent contamination on the inside of the carrier pipe.

ATTENTION: Minimum installation temperature for Armacell Austria pipes: - 5°C.

Wall and ceiling mounting or free laying pipes

When mounting on a wall or ceiling, the tube must be supported over its entire length due to its flexibility. In this case, it is advisable to lay the pipe in a cable tray and fasten it with straps. If the pipeline is laid in the terrain, fixed points must be provided to prevent it from sliding away.

Pipe trench profile

Up to a trench depth of 120cm, we recommend digging a vertical trench, above 120cm it is preferable to dig a V-trench. Excavation works must be carried out according to the approved procedure, rules and regulations of local authorities. It is often necessary to obtain prior permission. The depth of the trench must comply with the regulations regarding the installation of pipelines. A pipeline cadastral plan may be useful to avoid potential conflicts between existing or future utilities and structures. After completion of the laying work, the route must be marked with a route warning tape.

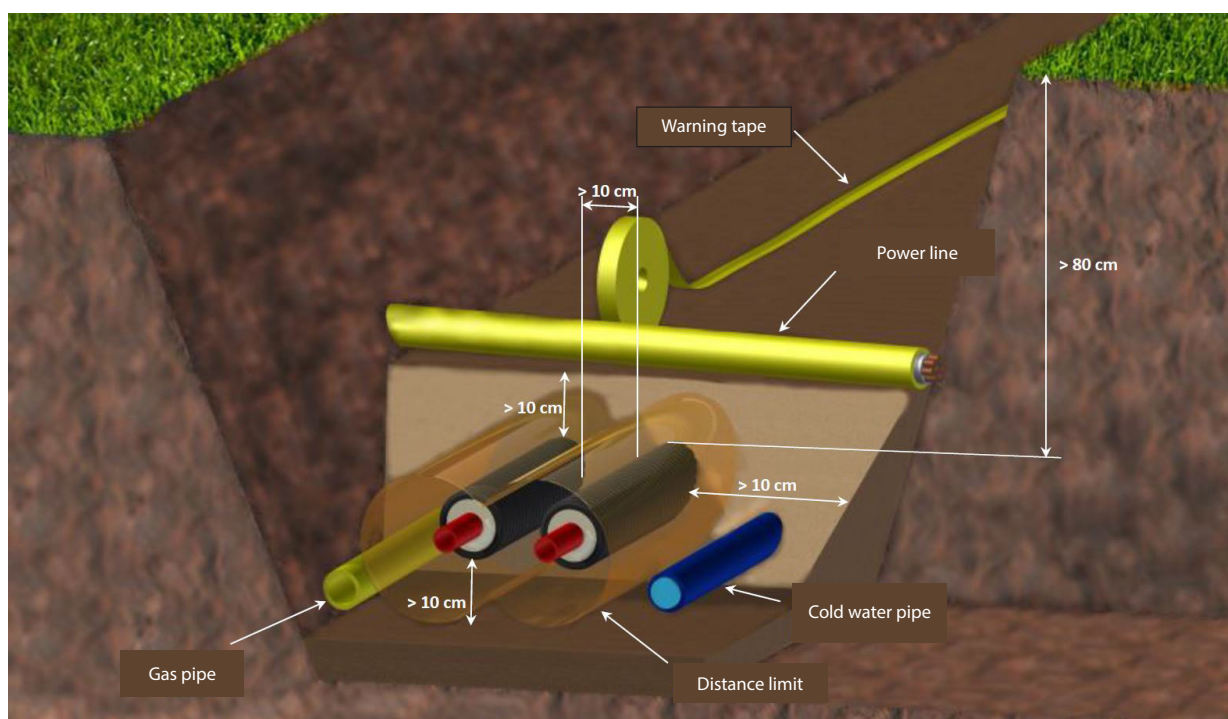
Distances to other supply lines

In the immediate surrounding area of the district heating pipeline, the earth temperature is higher than normal. This can affect the transmission performance of buried electrical lines. Generally, it is recommended to place the pipes next to each other instead of laying them on top of each other.

To avoid possible interactions with other buried systems, we recommend maintaining the following minimum distances (see also VDE 0100 and VDE 0101):

Minimum distance to crossing pipes:	
Line type	Minimum distance
1-kV-,Signal-, measuring cable	0,3 m
10-kV- or a 30-kV cabel	0,6 m
several 30-kV cables or cable > 60-kV	1,0 m
Gas- and water pipes	0,2 m

Minimum distance for parallel lines		
Leitungsart	Minimum distance for parallel lines	
	< 5 m	> 5 m
1-kV-,Signal-, measuring cable	0,3 m	0,3 m
10-kV- or a 30-kV cabel	0,6 m	0,7 m
several 30-kV cables or cable > 60-kV	1,0 m	1,5 m
Gas- and water pipes	0,5 m	0,5 m



Trench filling guidelines

The pipeline should be carefully embedded with 10cm of sand (grain size 0-4mm) on the bottom of the trench. The quality of the compact sand bed, which surrounds the pipes evenly, has a decisive influence on the pressure load of the pipe. It must be ensured that the pipes are completely embedded in sand (sand granulation 0-4 mm). Further filling of the trench must be done in layers of 20cm and must be compressed by hand. Any sharp objects and tree roots should be removed from the trench. From a cover of 50cm and more, compression may also be done mechanically with a vibratory tamper. Approx. w0cm above the pipe, a warning tape should be placed.

Our pre-insulated pipes as well as our longitudinal, elbow and T-insulation sets are also suitable for the stress caused by heavy goods vehicles SLW 60 under defined installation conditions according to ATV DVWK-A127. The pipe must be laid in accordance with the currently applicable ATV-DVWK-A127 guidelines for underground pipelines.

Leak test for pipelines

The pressure test is obligatory before closing the trench!

Preparation for leak testing with water:

1. Pipes must be accessible and not covered.
2. Remove safety and metering devices as necessary and replace with pipe sections or pipe ends.
3. Fill pipes from the lowest point of the system excluding any air, with filtered drinking water. Here the water temperature must match the ambient temperature ($\Delta \vartheta \leq 10 \text{ K}$ ambient temperature to water temperature).
4. Vent tapping points until an air-free water discharge can be determined.
5. Use a pressure testing device with an accuracy of 0.01 MPa (0.1 bar) for the pressure test.
6. Connect the pressure testing device to the heat network system at the lowest point.
7. Close all tapping points carefully.
8. Ensure that the temperature remains as constant as possible during the pressure test.
9. Prepare the pressure test record and note the system data.

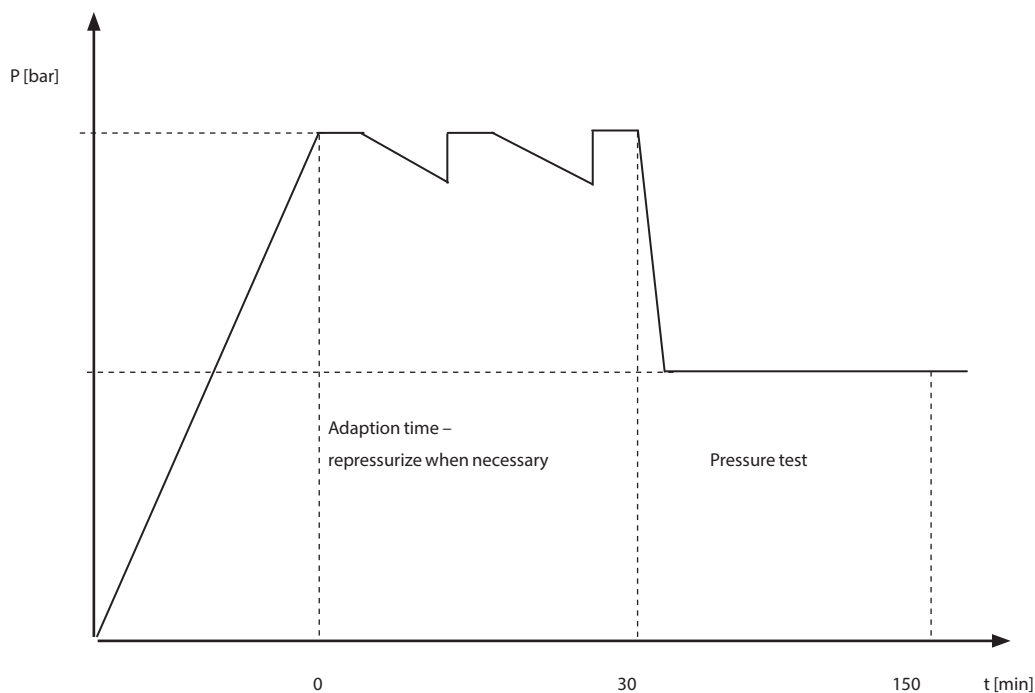
Pressure test for systems with PE-Xa pipes:

1. Slowly build up the test pressure (= 1.1 x max. operating pressure) in the installation.
2. Maintain the test pressure for 30 minutes. If necessary, build up the test pressure again.
3. After 30 minutes, record the test pressure in the pressure test report.
4. Check the entire installation, in particular the joints, for leaks by visual inspection.
5. Reduce test pressure slowly to 0.5 x maximum test pressure and note test pressure in the pressure test record.
6. Read off the test pressure after 2 hours and document it in the pressure test record.
7. Check the entire installation, in particular the joints, for leaks by visual inspection.
8. If the test pressure has dropped:
 - Carry out another detailed visual inspection of the pipes, tapping-, and connection points.
 - After eliminating the cause of the pressure drop, repeat the pressure test of the system (steps 1-7).
9. Falls bei der Sichtkontrolle keine Undichtheit festgestellt wurde, kann die Dichtheitsprüfung abgeschlossen werden.

Concluding the pressure test with water

After conclusion of the pressure test:

1. The company that performed the test and the client must confirm the pressure test in the pressure test record.
2. Remove the pressure test device.
3. Re-attach the removed safety and metering equipment.



Pressure Testing Record

1. Project details

Object: _____

Installer: _____

Street Address: _____

Postcode/Town: _____

☐ The filling water is filtered and the pipesystem is bled off air.

The permissible operating pressure is: _____ bar

Water temperature $\vartheta W =$ _____ °C Ambient temperature $\vartheta U =$ _____ °C

$\Delta\vartheta = \vartheta U - \vartheta W =$ _____ K

2. Pressure Testing

Step 1:

☐ $\Delta\vartheta \leq 10$ K between ambient temperature and water temperature

Test pressure: _____ bar (1,1 x max. test pressure)

Test time: _____ min. (minimum 30 minutes); hold test pressure, repressurize when necessary

Pressure after 30 min.: _____ bar

☐ The complete installation, especially joints, are visually inspected and no leaks have been detected.

Step 2:

Test pressure: _____ bar (0,5 x max. test pressure)

Test time: _____ min. (120 min.)

Pressure after 120 min.: _____ bar

☐ The complete installation, especially joints, are visually inspected and no leaks have been detected.

3. Test notes

☐ At step 2 of the pressure test no pressure loss at the manometer was detected.

☐ The complete installation is sealed.

4. Confirmation

For the client: _____

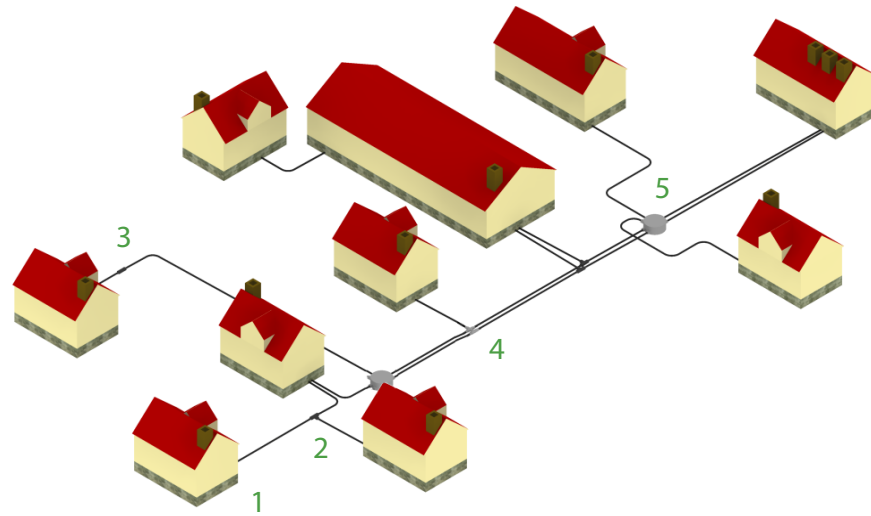
For the installer: _____

Place: _____

Date: _____

Attachment: _____

Connection examples with Austroflex system



1. House connection

Components for a house connection installation		
Art. No.	Component	Quantity
116HED000 / 116HEN000	House entries for pressing water / House entries for non-pressing water	1
116AFS000	Fix point clamps	1
116ENS000000	Rubber end caps	1
116WHA000000	Clamp connection with male thread	1 / PE-Xa pipe

2. T-piece

Components for a T-Connection installation		
Art. No.	Component	Quantity
116IST005	Insulation set for T-connection	1
116IRE000000	Insulation tube bit	3
116ENO000000	Shrink end caps	3
116SHT000000	Press-T-piece	1 / PE-Xa pipe
116ISD000	PU- or soft foam insulation set	1

3. Straight connection

Components for a pipe T-Connection installation		
Art. No.	Component	Quantity
116ISL000	Insulation set for straight connection or pipe sleeve	1
116IRE000000	Insulation tube bit (not needed in case of pipe sleeve)	2
116ENO000000	Shrink end caps	2
116SHT000000	Press coupler	1 / PE-Xa pipe
116ISD000	PU- or soft foam insulation set	1

4. Double T-piece

Branching from a line with single lines to a line with a double line:

Components for a double T-Connection installation		
Art. No.	Component	Quantity
116IST004	Insulation set for double T-connection	1
116ENO000000	Shrink end caps	5
116SHT000000	Press-T-piece	2
116ISD000	PU- or soft foam insulation set	1

5. Chamber

Extension of two single lines and branching of two double lines in one chamber:

Components for a chamber installation		
Art. No.	Component	Quantity
116ESD200	chamber	1
116SSS000	Shrink sleeve	6
116ENO000000	Shrink end caps	6
116SHT000000	Press T- piece	4
116SHW000000	Press elbow 90° (for easier connection installation in the chamber)	4

Project record

Project: _____

Company: _____

Contact person: _____

Contact details:: _____

Date: _____

System type	Heating ☐	Sanitary ☐	Cold portable water ☐
Insulation type	AustroPEX ☐	AustroPEX ☐	AustroPEX ☐
	AustroPUR ☐	AustroPUR ☐	
	PLUS-Insulation ☐		
Pipe dimension	single ☐	single ☐	Frost protection string ☐
	double ☐	circulation ☐	

Pipe dimension

Flow temperature: _____ [°C]

Return temperature: _____ [°C]

Operating pressure: _____ [°C]

House entry **Core drilling** ☐ **Wall breakthrough** ☐ **Ground plate** ☐

Connections	Capacity in kW m3/h
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
9	90
10	100
11	110
12	120
13	130
14	140
15	150
16	160
17	170
18	180
19	190
20	200
21	210
22	220
23	230
24	240
25	250
26	260
27	270
28	280
29	290
30	300
31	310
32	320
33	330
34	340
35	350
36	360
37	370
38	380
39	390
40	400
41	410
42	420
43	430
44	440
45	450
46	460
47	470
48	480
49	490
50	500
51	510
52	520
53	530
54	540
55	550
56	560
57	570
58	580
59	590
60	600
61	610
62	620
63	630
64	640
65	650
66	660
67	670
68	680
69	690
70	700
71	710
72	720
73	730
74	740
75	750
76	760
77	770
78	780
79	790
80	800
81	810
82	820
83	830
84	840
85	850
86	860
87	870
88	880
89	890
90	900
91	910
92	920
93	930
94	940
95	950
96	960
97	970
98	980
99	990
100	1000

Line No.	Connected load	Pipeline length	Note
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Strip map

		5 (K)	7 (K)	10 (K)	15 (K)	20 (K)	25 (K)	30 (K)	40 (K)		20 x 1,9	25 x 2,3	32 x 2,9	40 x 3,7	50 x 4,6	63 x 5,8	75 x 6,8	90 x 8,2
kg / h at H ₂ O 70°C	ℓ / sec at H ₂ O 70°C	kW at respective temp. Difference in Kelvin ex.: 20 K = 80° / 60°C, TM = 70°C 1 [ℓ / sec] x 3,6 = 1 [m³ / h]								Pressure loss Flow speed (at H ₂ O 70°C)	da Outer diameter PE-Xa carrier pipe x wall thickness SDR11 = 6,6 bar at 95°C 100.000 Pa = 1 bar							
43	0,012	0,25	0,35	0,5	0,75	1	1,25	1,5	2	Pa/m m/sec	5 0,06	2 0,04						
107	0,031	0,625	0,875	1,25	1,875	2,5	3,125	3,75	5	Pa/m m/sec	24 0,15	8 0,09						
215	0,061	1,25	1,75	2,5	3,75	5	6,25	7,5	10	Pa/m m/sec	80 0,30	27 0,19	8 0,11					
430	0,122	2,5	3,5	5	7,5	10	12,5	15	20	Pa/m m/sec	273 0,59	90 0,37	27 0,23	10 0,15				
644	0,183	3,75	5,25	7,5	11,25	15	18,75	22,5	30	Pa/m m/sec	565 0,89	185 0,56	56 0,34	20 0,22				
859	0,244	5	7	10	15	20	25	30	40	Pa/m m/sec	952 1,18	310 0,75	93 0,45	32 0,29	11 0,19			
1.074	0,305	6,25	8,75	12,5	18,75	25	31,25	37,5	50	Pa/m m/sec	1432 1,48	465 0,93	138 0,57	48 0,37	16 0,23			
1.289	0,366	7,5	10,5	15	22,5	30	37,5	45	60	Pa/m m/sec		647 1,12	192 0,68	67 0,44	23 0,28			
1.504	0,427	8,75	12,25	17,5	26,25	35	43,75	52,5	70	Pa/m m/sec		858 1,31	254 0,79	88 0,51	30 0,33			
1.718	0,488	10	14	20	30	40	50	60	80	Pa/m m/sec		1096 1,49	323 0,91	112 0,58	38 0,37	13 0,24		
1.933	0,549	11,25	15,75	22,5	33,75	45	56,25	67,5	90	Pa/m m/sec			400 1,02	139 0,66	47 0,42	15 0,26		
2.148	0,610	12,5	17,5	25	37,5	50	62,5	75	100	Pa/m m/sec			485 1,13	168 0,73	57 0,47	19 0,29		
2.363	0,671	13,75	19,25	27,5	41,25	55	68,75	82,5	110	Pa/m m/sec			577 1,24	199 0,80	67 0,51	22 0,32		
2.578	0,732	15	21	30	45	60	75	90	120	Pa/m m/sec			677 1,36	233 0,88	79 0,56	26 0,35		
2.792	0,793	16,25	22,75	32,5	48,75	65	81,25	97,5	130	Pa/m m/sec			785 1,47	270 0,95	91 0,61	30 0,38		
3.007	0,854	17,5	24,5	35	52,5	70	87,5	105	140	Pa/m m/sec			899 1,58	309 1,02	104 0,65	34 0,41		
3.222	0,915	18,75	26,25	37,5	56,25	75	93,75	112,5	150	Pa/m m/sec			1021 1,70	350 1,10	118 0,70	39 0,44		
3.437	0,976	20	28	40	60	80	100	120	160	Pa/m m/sec				394 1,17	132 0,75	43 0,47	18 0,33	
3.652	1,037	21,25	29,75	42,5	63,75	85	106,25	127,5	170	Pa/m m/sec				441 1,24	148 0,79	48 0,50	20 0,35	
3.866	1,098	22,5	31,5	45	67,5	90	112,5	135	180	Pa/m m/sec				489 1,32	164 0,84	54 0,53	23 0,37	
4.296	1,220	25	35	50	75	100	125	150	200	Pa/m m/sec				594 1,46	199 0,93	65 0,59	27 0,41	
4.726	1,343	27,5	38,5	55	82,5	110	137,5	165	220	Pa/m m/sec				709 1,61	237 1,03	77 0,65	33 0,45	
5.155	1,465	30	42	60	90	120	150	180	240	Pa/m m/sec				833 1,76	277 1,12	90 0,71	38 0,49	
5.585	1,587	32,5	45,5	65	97,5	130	162,5	195	260	Pa/m m/sec				966 1,90	321 1,21	104 0,76	44 0,54	
6.014	1,709	35	49	70	105	140	175	210	280	Pa/m m/sec				1108 2,05	368 1,31	119 0,82	50 0,58	
6.444	1,831	37,5	52,5	75	112,5	150	187,5	225	300	Pa/m m/sec					418 1,40	135 0,88	57 0,62	
6.874	1,953	40	56	80	120	160	200	240	320	Pa/m m/sec					471 1,49	152 0,94	64 0,66	27 0,46
7.303	2,075	42,5	59,5	85	127,5	170	212,5	255	340	Pa/m m/sec					526 1,59	170 1,00	72 0,70	30 0,49
7.733	2,197	45	63	90	135	180	225	270	360	Pa/m m/sec					585 1,68	189 1,06	80 0,74	33 0,52
8.592	2,441	50	70	100	150	200	250	300	400	Pa/m m/sec					711 1,87	229 1,18	96 0,82	40 0,57
9.666	2,746	56,25	78,75	112,5	168,75	225	281,25	337,5	450	Pa/m m/sec					885 2,10	285 1,32	120 0,93	50 0,65
10.740	3,051	62,5	87,5	125	187,5	250	312,5	375	500	Pa/m m/sec					1077 2,33	346 1,47	145 1,03	60 0,72
11.814	3,356	68,75	96,25	137,5	206,25	275	343,75	412,5	550	Pa/m m/sec						412 1,62	173 1,13	71 0,79
12.888	3,661	75	105	150	225	300	375	450	600	Pa/m m/sec						485 1,76	203 1,24	84 0,86
13.962	3,966	81,25	113,75	162,5	243,75	325	406,25	487,5	650	Pa/m m/sec						562 1,91	235 1,34	97 0,93

Example:
At 5K temp. difference
and 5kW, this results in
310 Pa/m pressure drop
and 0.75m/sec flow
velocity for a 25x2.3
pipeline.

		5 (K)	7 (K)	10 (K)	15 (K)	20 (K)	25 (K)	30 (K)	40 (K)		63 x 5,8	75 x 6,8	90 x 8,2	110 x 10,0	125 x 11,4	140 x 12,7	160 x 14,6
kg / h at H ₂ O 70°C	ℓ / sec at H ₂ O 70°C	kW at respective temp. Difference in Kelvin ex.: 20 K = 80° / 60°C, TM = 70°C 1 [ℓ / sec] x 3,6 = 1 [m³ / h]								Pressure loss Flow speed (at H ₂ O 70°C)	da Outer diameter PE-Xa carrier pipe x wall thickness SDR11 = 6,6 bar at 95°C 100.000 Pa = 1 bar						
15.036	4,272	87,5	122,5	175	262,5	350	437,5	525	700	Pa/m m/sec	645 2,06	269 1,44	111 1,00	42 0,67	23 0,52		
16.110	4,577	93,75	131,25	187,5	281,25	375	468,75	562,5	750	Pa/m m/sec	734 2,21	306 1,55	126 1,08	47 0,72	26 0,56		
17.184	4,882	100	140	200	300	400	500	600	800	Pa/m m/sec	828 2,35	345 1,65	142 1,15	53 0,77	29 0,60		
18.258	5,187	106,25	148,75	212,5	318,75	425	531,25	637,5	850	Pa/m m/sec	927 2,50	386 1,75	159 1,22	60 0,82	32 0,63		
19.332	5,492	112,5	157,5	225	337,5	450	562,5	675	900	Pa/m m/sec	1032 2,65	429 1,85	176 1,29	66 0,86	36 0,67		
20.406	5,797	118,75	166,25	237,5	356,25	475	593,75	712,5	950	Pa/m m/sec		475 1,96	195 1,36	73 0,91	39 0,71	23 0,56	
21.480	6,102	125	175	250	375	500	625	750	1000	Pa/m m/sec		522 2,06	214 1,43	80 0,96	43 0,74	25 0,59	
22.554	6,407	131,25	183,75	262,5	393,75	525	656,25	787,5	1050	Pa/m m/sec		572 2,16	234 1,51	88 1,01	47 0,78	27 0,62	
23.628	6,713	137,5	192,5	275	412,5	550	687,5	825	1100	Pa/m m/sec		624 2,27	256 1,58	96 1,06	51 0,82	29 0,65	16 0,50
24.702	7,018	143,75	201,25	287,5	431,25	575	718,75	862,5	1150	Pa/m m/sec		678 2,37	278 1,65	104 1,10	56 0,86	32 0,68	17 0,52
25.776	7,323	150	210	300	450	600	750	900	1200	Pa/m m/sec		734 2,47	300 1,72	112 1,15	60 0,89	35 0,71	18 0,54
26.850	7,628	156,25	218,75	312,5	468,75	625	781,25	937,5	1250	Pa/m m/sec		792 2,58	324 1,79	121 1,20	65 0,93	37 0,74	20 0,57
27.924	7,933	162,5	227,5	325	487,5	650	812,5	975	1300	Pa/m m/sec		853 2,68	349 1,86	130 1,25	70 0,97	40 0,77	21 0,59
28.998	8,238	168,75	236,25	337,5	506,25	675	843,75	1012,5	1350	Pa/m m/sec		916 2,78	374 1,94	139 1,29	75 1,00	43 0,80	23 0,61
30.072	8,543	175	245	350	525	700	875	1050	1400	Pa/m m/sec		980 2,89	400 2,01	149 1,34	80 1,04	46 0,83	24 0,64
31.146	8,848	181,25	253,75	362,5	543,75	725	906,25	1087,5	1450	Pa/m m/sec			427 2,08	159 1,39	85 1,08	49 0,86	26 0,66
32.217	9,153	187,5	262,5	375	562,5	750	937,5	1125	1500	Pa/m m/sec			455 2,15	169 1,44	91 1,12	52 0,89	27 0,68
33.294	9,459	193,75	271,25	387,5	581,25	775	968,75	1162,5	1550	Pa/m m/sec			484 2,22	180 1,49	97 1,15	55 0,92	29 0,70
34.368	9,764	200	280	400	600	800	1000	1200	1600	Pa/m m/sec			514 2,29	191 1,53	102 1,19	59 0,95	31 0,73
36.516	10,374	212,5	297,5	425	637,5	850	1062,5	1275	1700	Pa/m m/sec			575 2,44	214 1,63	115 1,26	65 1,01	34 0,77
38.664	10,984	225	315	450	675	900	1125	1350	1800	Pa/m m/sec			640 2,58	237 1,73	127 1,34	73 1,06	38 0,82
40.812	11,594	237,5	332,5	475	712,5	950	1187,5	1425	1900	Pa/m m/sec			709 2,73	263 1,82	141 1,41	80 1,12	42 0,86
42.959	12,205	250	350	500	750	1000	1250	1500	2000	Pa/m m/sec			781 2,87	289 1,92	155 1,49	88 1,18	46 0,91
45.107	12,815	262,5	367,5	525	787,5	1050	1312,5	1575	2100	Pa/m m/sec				317 2,01	169 1,56	97 1,24	51 0,95
47.255	13,425	275	385	550	825	1100	1375	1650	2200	Pa/m m/sec				345 2,11	185 1,64	105 1,30	55 1,00
49.403	14,035	287,5	402,5	575	862,5	1150	1437,5	1725	2300	Pa/m m/sec				375 2,21	201 1,71	114 1,36	60 1,04
51.551	14,646	300	420	600	900	1200	1500	1800	2400	Pa/m m/sec				406 2,30	217 1,79	124 1,42	65 1,09
53.699	15,256	312,5	437,5	625	937,5	1250	1562,5	1875	2500	Pa/m m/sec				439 2,40	234 1,86	134 1,48	70 1,14
55.848	15,866	325	455	650	975	1300	1625	1950	2600	Pa/m m/sec				472 2,49	252 1,93	144 1,54	75 1,18
57.995	16,476	337,5	472,5	675	1012,5	1350	1687,5	2025	2700	Pa/m m/sec				507 2,59	270 2,01	154 1,60	81 1,23
60.143	17,086	350	490	700	1050	1400	1750	2100	2800	Pa/m m/sec	The maximum transmittable power is 5100 kW at 40K temp. difference. For further information please contact us.				290 2,08	165 1,66	86 1,27
62.291	17,697	362,5	507,5	725	1087,5	1450	1812,5	2175	2900	Pa/m m/sec					309 2,16	176 1,72	92 1,32
64.439	18,307	375	525	750	1125	1500	1875	2250	3000	Pa/m m/sec					329 2,23	187 1,77	98 1,36
66.587	18,917	387,5	542,5	775	1162,5	1550	1937,5	2325	3100	Pa/m m/sec					350 2,31	199 1,83	104 1,41
68.735	19,527	400	560	800	1200	1600	2000	2400	3200	Pa/m m/sec					372 2,38	211 1,89	110 1,45

Pressure Loss Table Sanitary SDR 7.4 PN10

		20 x 2,8		25 x 3,5		32 x 4,4		40 x 5,5		50 x 6,9		63 x 8,6	
m ³ /h at H ₂ O 80°C	ℓ / sec at H ₂ O 80°C	Flow velocity [m/s]	Pressure Loss [Pa/m]	Flow velocity [m/s]	Pressure Loss [Pa/m]	Flow velocity [m/s]	Pressure Loss [Pa/m]	Flow velocity [m/s]	Pressure Loss [Pa/m]	Flow velocity [m/s]	Pressure Loss [Pa/m]	Flow velocity [m/s]	Pressure Loss [Pa/m]
0,14	0,040	0,25	64,7	0,16	22,3								
0,16	0,045	0,28	79,6	0,18	27,4								
0,18	0,050	0,31	95,8	0,20	33,0								
0,20	0,055	0,34	113,3	0,22	39,0								
0,22	0,060	0,37	132,1	0,24	45,4								
0,23	0,065	0,40	152,2	0,26	52,2								
0,25	0,070	0,43	173,6	0,28	59,5								
0,27	0,075	0,46	196,3	0,29	67,2								
0,29	0,080	0,49	220,2	0,31	75,3								
0,31	0,085	0,52	245,3	0,33	83,9								
0,32	0,090	0,55	271,7	0,35	92,8	0,21	27,5						
0,34	0,095	0,58	299,3	0,37	102,2	0,22	30,3						
0,36	0,100	0,61	328,1	0,39	111,9	0,24	33,1						
0,40	0,110	0,68	389,3	0,43	132,6	0,26	39,2						
0,43	0,120	0,74	455,2	0,47	154,8	0,28	45,7						
0,47	0,130	0,80	525,9	0,51	178,6	0,31	52,7						
0,50	0,140	0,86	601,3	0,55	204,0	0,33	60,1						
0,54	0,150	0,92	681,3	0,59	230,8	0,35	67,9						
0,58	0,160	0,98	765,9	0,63	259,2	0,38	76,2	0,24	26,1				
0,65	0,180	1,11	948,9	0,71	320,4	0,43	94,0	0,27	32,2				
0,72	0,200	1,23	1150,1	0,79	387,6	0,47	113,5	0,30	38,8				
0,79	0,220	1,35	1369,3	0,86	460,6	0,52	134,7	0,33	46,0				
0,86	0,240	1,47	1606,4	0,94	539,4	0,57	157,5	0,36	53,7				
0,94	0,260			1,02	623,9	0,62	181,8	0,39	61,9				
1,01	0,280			1,10	714,2	0,66	207,8	0,42	70,7				
1,08	0,300			1,18	810,1	0,71	235,4	0,45	80,0	0,29	27,5		
1,26	0,350			1,38	1074,6	0,83	311,3	0,53	105,5	0,34	36,2		
1,44	0,400					0,95	396,8	0,61	134,3	0,39	46,0		
1,62	0,450					1,06	491,9	0,68	166,1	0,44	56,8		
1,80	0,500					1,18	596,4	0,76	201,0	0,49	68,7		
2,16	0,600					1,42	833,7	0,91	280,1	0,58	95,4	0,36	30,7
2,52	0,700							1,06	371,1	0,68	126,1	0,42	40,4
2,88	0,800							1,21	474,0	0,78	160,8	0,49	51,4
3,24	0,900									0,87	199,2	0,55	63,6
3,60	1,000									0,97	241,5	0,61	77,0
3,96	1,100									1,07	287,5	0,67	91,5
4,32	1,200									1,17	337,0	0,73	107,0
4,68	1,300									1,26	391,0	0,79	124,0
5,04	1,400									1,36	448,0	0,85	142,0
5,40	1,500											0,91	161,0
5,76	1,600											0,97	181,0
6,48	1,800											1,09	225,0
7,20	2,000											1,21	273,0
7,92	2,200											1,34	326,0
8,64	2,400											1,46	382,0
9,36	2,600												

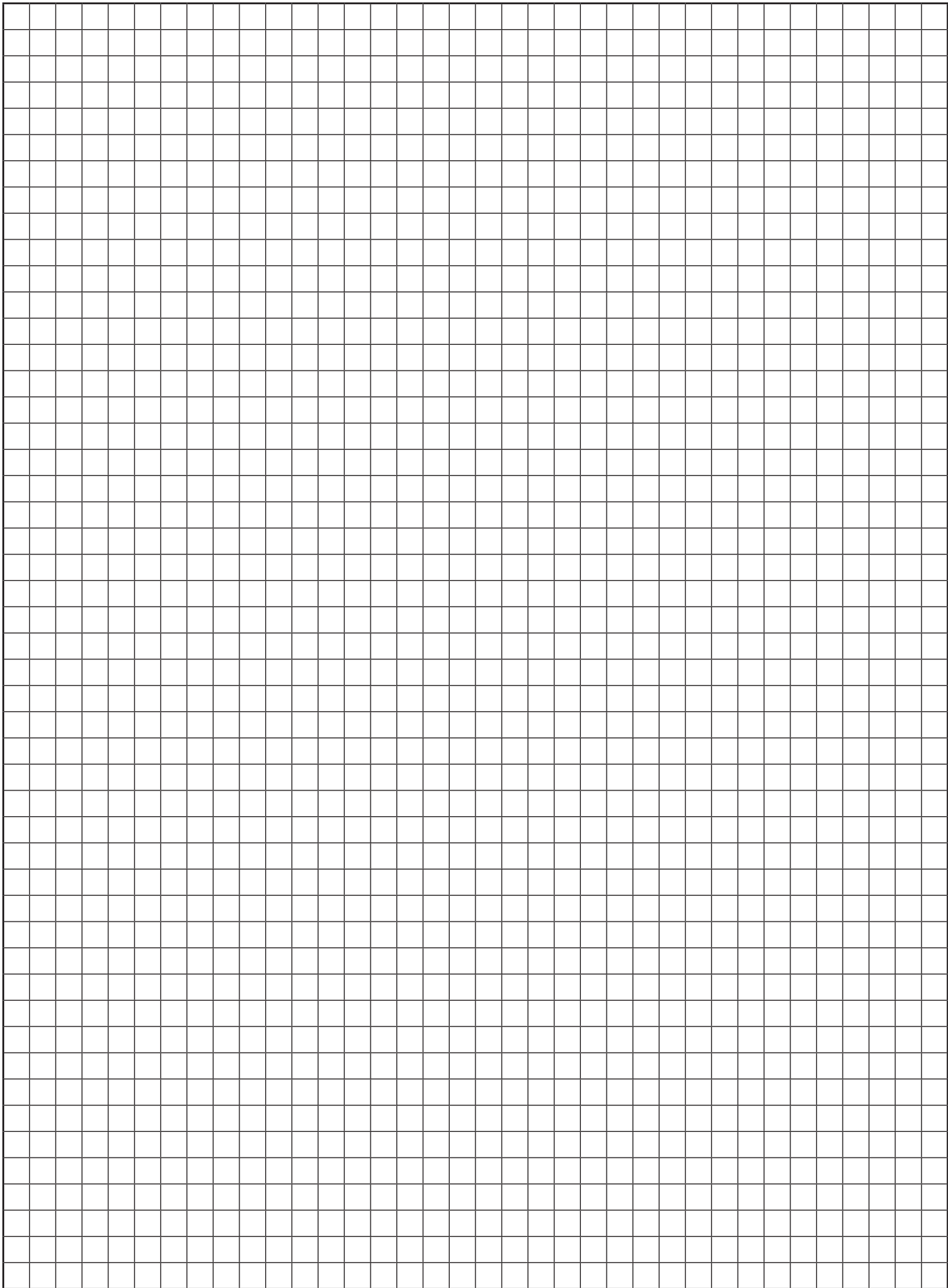


Pressure Loss Table Stainless steel corrugated pipes													
	3 (K)	5 (K)	7 (K)	10 (K)	15 (K)	20 (K)	25 (K)	30 (K)	40 (K)		DN25	DN32	DN40
ℓ / sec at H ₂ O 20°C	kW at respective temp. Difference in Kelvin (K) 1 [ℓ / sec] x 3,6 = 1 [m³ / h]									Pressure loss Flow velocity (at H ₂ O 20°C)			
0,200	2,51	4,18	5,86	8,35	12,5	16,7	20,9	25,1	33,4	Pa/m m/sec	200 0,40		
0,250	3,14	5,22	7,32	10,4	15,7	20,9	26,1	31,3	41,8	Pa/m m/sec	290 0,50		
0,300	3,76	6,26	8,78	12,5	18,8	25,1	31,3	37,6	50,1	Pa/m m/sec	400 0,60	100 0,36	
0,375	4,71	7,83	11,0	15,7	23,5	31,3	39,1	47,0	62,6	Pa/m m/sec	580 0,75	175 0,45	
0,400	5,02	8,35	11,7	16,7	25,1	33,4	41,8	50,1	66,8	Pa/m m/sec	675 0,80	185 0,49	100 0,30
0,500	6,27	10,4	14,6	20,9	31,3	41,8	52,2	62,6	83,5	Pa/m m/sec	1050 0,99	280 0,61	150 0,38
0,600	7,53	12,5	17,6	25,1	37,6	50,1	62,6	75,2	100,2	Pa/m m/sec	1550 1,19	395 0,73	180 0,46
0,700	8,78	14,6	20,5	29,2	43,8	58,5	73,1	87,7	116,9	Pa/m m/sec	2100 1,39	540 0,85	240 0,53
0,800	10,0	16,7	23,4	33,4	50,1	66,8	83,5	100,2	133,6	Pa/m m/sec	2800 1,59	700 0,97	285 0,61
0,900	11,3	18,8	26,3	37,6	56,4	75,2	94,0	112,7	150,3	Pa/m m/sec	3700 1,79	900 1,09	350 0,69
1,00	12,5	20,9	29,3	41,8	62,6	83,5	104,4	125,3	167,0	Pa/m m/sec	4500 1,99	1200 1,21	430 0,76
1,50	18,8	31,3	43,9	62,6	94,0	125,3	156,6	187,9	250,5	Pa/m m/sec	9500 2,98	2450 1,82	960 1,14
1,65	20,7	34,4	48,3	68,9	103,3	137,8	172,2	206,7	275,6	Pa/m m/sec		3000 2,00	1250 1,26
2,00	25,1	41,8	58,6	83,5	125,3	167,0	208,8	250,5	334,1	Pa/m m/sec		5000 2,43	2000 1,52
2,50	31,4	52,2	73,2	104,4	156,6	208,8	261,0	313,2	417,6	Pa/m m/sec		8000 3,03	3000 1,90
2,80	35,1	58,5	82,0	116,9	175,4	233,8	292,3	350,8	467,7	Pa/m m/sec			4000 2,13
3,00	37,6	62,6	87,8	125,3	187,9	250,5	313,2	375,8	501,1	Pa/m m/sec			4700 2,28



Pressure units converting table

Pressure units converting table									
Unit	1 Pa	1 kPa	1 bar	1 mbar	1 mmWs	1 atm	1 at	1 Torr	1 lb/in ²
1 Pa = 1 N/m ²	1	10 ⁻³	10 ⁻⁵	0,01	0,102	0,987x10 ⁻⁵	1,02x10 ⁻⁵	0,75x10 ⁻²	1,45x10 ⁻⁴
1 kPa	1000	1	0,01	10	102	0,987x10 ⁻²	1,02x10 ⁻²	7,50	0,145
1 bar = 1 N/mm ²	10 ⁵	100	1	1000	1,02x10 ⁴	0,947	1,02	750	14,50
1 mbar	100	0,1	10 ⁻³	1	10,2	0,987x10 ⁻³	1,02x10 ⁻³	0,75	0,0145
1 mmWs	9,81	9,81x10 ⁻³	31x10 ⁻⁵	9,81x10 ⁻²	1	0,97x10 ⁻⁴	10 ⁻⁴	0,074	1,42x10 ⁻³
1 atm	1,01x10 ⁻⁵	101	1,01	1010	10332	1	1,033	760	14,70
1 at	9,81x10 ⁴	98,1	0,981	981	10000	0,968	1	735	14,22
1 Torr	133	0,133	1,33x10 ⁻³	1,33	13,6	1,32x10 ⁻²	1,36x10 ⁻²	1	0,019
1 lb/in ²	6,89x10 ³	6,89	0,069	68,9	703	0,068	0,070	51,7	1



All our installation instructions provided with the products apply All installations should always be carried out by trained and qualified personnel.

1. General:

The following „Terms and Conditions“ apply, for all supplies and services delivered by Armacell Austria GmbH, Finkensteiner Strasse 7, A-9585 Gödersdorf, Austria (hereinafter referred to as „The Seller“), Austrian Registered Company Number FN 199010 m. All variations must be expressly agreed in writing. Any commitment or supplementary agreement by the Company's employees or independent representatives, which fall outside these Terms and Conditions, require The Seller's written consent in order to be valid. Company sales representatives do not have signing authority. Any other conditions requested by the Purchaser cannot be considered an integral part of the contract, unless these have been accepted by The Seller in writing. All tenders are without obligation with regard to indications of price, quantity, delivery time and availability and only become part of the purchase contract with the written acknowledgement of the order with the expressly contracted points therein confirmed. Verbal or telephone information and explanations shall remain unbinding until they shall have been confirmed in writing. These terms also apply to information in brochures, catalogues, price lists, newsletters, advertisements, etc.; Expressly stated or tacitly implied authorisations, Norm-tests, technical data, properties, application and performance specifications and instructions shall be considered as guaranteed features only if explicitly referred to as such in writing in the contract.

2. Place of Contractual Fulfilment and Court of Jurisdiction:

Unless otherwise agreed, the Place of Fulfilment shall be deemed the loading dock; for the Payment it shall be deemed the Headquarters of The Seller. Only Austrian law shall apply. As to the Court of Jurisdiction the competent commercial court of The Seller shall be deemed the agreed venue.

3. Delivery:

All delivery dates and deadlines given apply only approximately; they are only binding if The Seller indicated them as such in writing. Furthermore, The Seller shall not be held liable for adherence to the delivery deadline in case of impediments due to force majeure, or other unforeseeable extraordinary circumstances outside its control, which affect The Seller or its suppliers, with reference to interruption of operations, strikes, raw material or shortage of goods. If The Seller fails to meet agreed delivery times, the Purchaser has the right to withdraw from the non-fulfilled part of the contract after expiration of a reasonable grace period set by the Purchaser. Equally, in these cases The Seller reserves the right to withdraw from the agreement wholly or in part, with regard to the unfulfilled part of the delivery. Any damages claimed by the Purchaser shall be ruled out. Liability is restricted to wilful intent or gross negligence on the part of The Seller. Partial deliveries are permissible. In the case of call-forward orders, the delivery time begins on the next working day after the goods have been called forward upon receipt. (Mon.-Fri.). For transport- and production-related technical reasons The Seller reserves the right to an excess or short delivery of up to 5 % of the quantity ordered. If the Purchaser does not take delivery of the goods after expiration of a reasonable grace period, The Seller is entitled to withdraw from the contract and to claim damages due to non-fulfilment. Return shipments are only admissible after permission has been obtained from The Seller, a handling fee of 15% shall apply and the Purchaser shall assume the freight costs. Each return shall only be accepted when accompanied by the return coupon confirmation issued by Austroflex Rohr-Isoliertechnik GmbH. Special or custom-made products are non-returnable.

4. Shipping, Transfer of Risk, Non-acceptance

Unless otherwise agreed, delivery is made ex-work at the contract Purchaser's risk and expense. The risk shall pass to the Purchaser upon the transfer of the goods to the first carrier (post, railway, transport company etc.). (This shall also apply to deliveries for which The Seller has agreed to pay for the transport of the goods.). It shall be the duty of the Purchaser, his receiver or designated agent to check out and exonerate the transport vehicle at the place of destination. Pallets, which are not explicitly declared as non-returnable, must be either replaced immediately upon delivery or returned to The Seller undamaged, at the expense of the Purchaser within two weeks. Otherwise, the costs will be charged to the Purchaser at current market prices. Similarly, the Purchaser is liable for all additional costs incurred for any casual reason (such as demurrage, truck demurrage and the like). Unless otherwise explicitly agreed in writing, delivery does not include unloading. Trucks organised by The Seller shall be unloaded within a maximum of two hours of arrival at the unloading site. The receiver of the delivery will be billed for any resulting down time and other costs based on the Freight Forwarder's bill. If the fulfilment of the contract is prevented as the fault of the Purchaser and/or his vicarious agent, The Seller may either claim financial compensation due to non-fulfilment or withdraw from the contract. Any additional expenses (storage charges, transport, distress sale) can be added to the invoiced amount.

5. Warranty - Complaints - Deadlines:

The condition of the goods on arrival at the delivery point is fundamental. The Purchaser shall report immediately in writing to the Seller open defects, specifying them on the delivery note or waybill. The Purchaser expressly undertakes to inspect the delivered product for its suitability. In case of defective goods or incorrect delivery the Purchaser shall not in any way transform, adapt or resell the goods. The Seller reserves the right to inspect the products before processing. Otherwise all implied warranties are excluded. The shipper or carrier is liable for damages or losses incurred during transit. Prerequisite for a warranty is compliance with Seller's written instructions concerning storage, processing, etc. and/

or compliance with the guidelines and their relevant standards and regulations established. The Seller's processing instructions are in accordance with present knowledge and experience. Under no circumstances do they constitute a legal guarantee and do not form part of a sale's contract. Specific conditions with regard to building type, technology and regulations must always be taken into consideration when utilising the purchased items. Warranty in consulting is generally excluded.

6. Liability:

Liability for damage is limited in cases of deliberate or gross negligence. The warranty covers only damage limitation (delivery of spare parts) and is limited to the amount of the order. The Seller is not liable for the fulfilment of specific rules or for import licenses and authorisations in Austria, unless they were expressly agreed by contract. The duty of replacement is excluded for damage resulting from product liability law and also product liability claims which might be derived from other provisions. The Purchaser is entitled to compensation, particularly for non-fulfilment, specific contract violation or damages resulting from defects, only in the case of gross negligence or intent. Unless expressly acknowledged by The Seller in writing, claims for damages shall lapse six months after delivery.

7. Prices and Payment:

Prices are subject to change without notice and are based on the current price list and/or the order. The prices are, unless expressly agreed otherwise, "ex works" from The Seller, excluding freight, customs, and packaging, plus any statutory value added tax (VAT) due. Should relevant prices vary considerably after posting of the tender or confirmation of the order prior to delivery, customer and supplier shall consult each other and agree to a price adjustment. In the case of follow-up orders The Seller shall not be bound by previous prices. Payment shall be made within 30 days after the invoice date, net without any deductions of any kind, and net of bank costs and fees for the recipient (Seller). The Seller grants a 3 % discount when payment is made within eight days of the invoice date. Discounts or rebates shall be granted only if there are no other outstanding claims against the Purchaser. Terms of payment agreed verbally or over the phone shall not apply to new customers when a credit check does not support a line of credit. In this case, the delivery will only be on receipt of payment by cheque or cash on receipt of the goods. In the case of non-payment, The Seller is entitled to charge interest for delayed payment at the rate of 5% above the discount rate of the Austrian National Bank and to claim additional costs of eleven (11) Euro for each reminder sent. Counterclaims cannot not be compensated with the invoice amount. In case of change in currency values, the currency amount on the day of the invoice shall be accounted. Bills of exchange shall be accepted only with a waiver of recourse by the involved bank(s) and then only as a payment on condition that all the costs associated with the realisation of a bill of exchange shall be borne by the Purchaser. If after successful delivery or part delivery a basic deterioration in the Purchaser's financial circumstances becomes known, payment becomes due immediately. Agreed bonuses cannot compensate open claims against The Seller, where the Purchaser is in arrears with payments for previous deliveries.

8. Retention of Title

The goods are delivered exclusively under proprietary rights (retention of title) and pass into the property of the Purchaser only after payment in full. In the event of processing the said goods either into a new object or by combining it with a new object, The Seller acquires co-ownership of the new product or of the main product as long as the relevant products are subject to retention of title. Should the Purchaser sell the reserved goods on credit, the resulting claims for the purchase price are understood as relinquished to The Seller from the moment they occur without the need for a transfer deed. With payment by means of a bill of exchange the agreed retention of title remains, until the bill of exchange has been honoured in favour of The Seller. The Purchaser shall not be entitled to pledge goods subject to reservation of title, nor transfer them as security.

9. Severability

Should one or more provisions of these general terms and conditions be partly or fully void, the remaining terms and conditions shall remain in full force and effect.

10. Data protection

The shop assistant extinguishes all personal data which were processed exclusively on the basis of and to the fulfilment of the concrete contract or were stored, at the end of the tax-judicial and enterprise-judicial safekeeping duties (BAO, UGB), unless, there is a longer period for safekeeping according to the regulations of another federal law. Personal data are processed exclusively for the purpose of the order treatment and contract fulfilment. A use going out it, as for example for commercial purposes, does not occur. Because the data processing is based within the scope of the described order fulfilment on a legal obligation, no data protection-judicial contradiction right exists. The buyer expressly agrees with the fact that the shop assistant processes the buyer and/or his enterprise to concerning personal data (because name, address, e-mail, phone number) in this respect, leaves or transmits (iSd of data protection act) when this is necessary to the fulfilment of the contract and which to us in the connection of the buyer to transferred duties and suitable or arises from legal obligations of the company (e.g. safekeeping duty of calculations etc.).



Armacell Austria – the expert for flexible pre-insulated pipe systems and technical insulation solutions

ABOUT US:

Founded in 1985, we have been involved in technical insulation and district heating from the very beginning, as well as solar connection systems from the mid-1990s. Production takes place on a total area of 55,000 m² at the company headquarters in Gödersdorf near Villach. In 2022, Austroflex Rohr-Isoliersysteme GmbH was integrated into the globally active Armacell Group. Austroflex has been operating under the name Armacell Austria GmbH since January 2023.

SERVICE:

Thanks to our more than 35 years of experience in the transportation and preservation of heating and cooling energy, we are able to support our customers in solving both general and individual problems.

We see ourselves as a partner to industry and wholesalers and pursue a three-stage distribution channel. Thanks to our high level of innovation and flexibility, we are able to meet the highest demands of our customers.

ABOUT ARMACELL:

As the inventor of flexible insulation materials for plant insulation and a leading supplier of technical foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions with sustainable added value for its customers. Armacell products make a significant contribution to increasing energy efficiency around the world every day. With over 3,200 employees and 25 production sites in 19 countries, the company operates in two business units, Advanced Insulation and Engineered Foams, and generated sales of 800 million euros in 2022. Armacell focuses on the production of insulation materials for plant insulation, high-performance foams for the high-tech and lightweight construction industry and next-generation aerogel mat technology.

Further information can be found at: www.austroflex.com



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