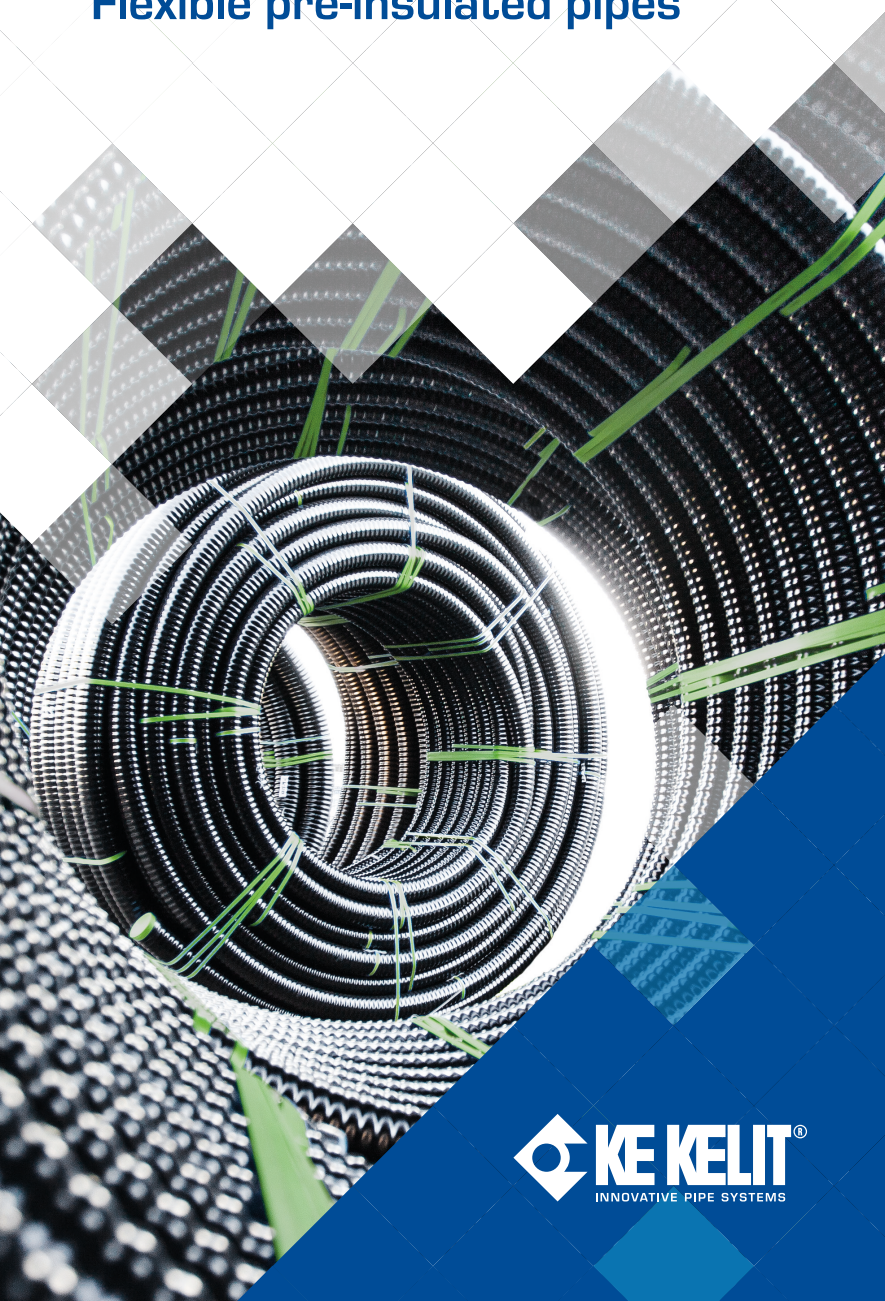
KELIT PEX®

Flexible pre-insulated pipes



KE KELIT®
INNOVATIVE PIPE SYSTEMS

KELIT PEX®

Flexible pre-insulated pipes

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INNOVATIVE PIPE SYSTEMS

Contents

Installation instructions

Installation rules

KELIT PEX delivery range

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Main office

Note:
Please consult the present handbook regarding installation rules particularly regarding the joining technology before your first KELIT PEX use.

Quality targets KE KELIT

1. Our quality targets are not confined to the products. They include all areas required by ÖNORM EN ISO 9001.
2. Suppliers and customers are integrated into the order-related quality assurance system to ensure that errors are prevented at this early stage.
3. Every employee is responsible for the quality of their own work and should be highly motivated to continually assess their work.
4. We consider meeting specific market and customer demands as a precondition for highest customer satisfaction.
5. A responsible attitude in relation to the environment now and in the future is the impetus for us to manufacture long-lasting products through environmentally-friendly processes.

Senator Karl Egger eh.
Managing Director

Approval – Registration – System testing

The entire system, not just individual parts, are subject to basic and regular tests. Several types of monitoring are to ensure that we meet the specified quality targets.

Certified quality assurance system
by Quality Austria

ÖNORM EN ISO 9001	–	Reg.no. AT 00366/0
ÖNORM EN ISO 14001	–	Reg.no. AT 02097/0
ÖNORM EN ISO 10005	–	Reg.no. AT 00001/0
ÖNORM EN ISO 50001	–	Reg.no. AT 0126/0

Self-monitoring at the KELIT quality laboratory:

- Raw material parameters
- Measurements
- Behavior during warm storage

Third-party monitoring by authorized testing authorities:

- System check
- Internal pressure creep behavior
- Peel test of the composite
- Hygienic/toxicological suitability
- Oxygen-tightness

Pipe connector testing:
- under vacuum conditions
- under tensile stress
- in an alternating temperature test
- in a pressure surge
- in an alternating bending test

ÖVGW permit

ÖVGW inspection mark
Award no. W 1,258

Products pursuant to:
ÖNORM EN ISO 15875 series
ÖNORM EN 15632 series

Note: Nationally applicable or country-specific standards must be observed!

Heat off the reel

KELIT PEX is a flexible pipe system designed for the low-temperature range for installation in the ground.

Application areas

- Close-range heat supply
- Small and medium district heating networks with up to 80° operating temperature
- Hot water supply in agriculture
- Industry – Expansion of operating facilities
- Wastewater systems
- Special design drinking water supply

Application area

Heating SDR 11

Max. operating pressure:
pmax. 6bar

Max. continuous operating temperature:
tbmax. 80°C

Max. operating temperature:
tmax. 95°C (sliding)

Sanitary SDR 7.4

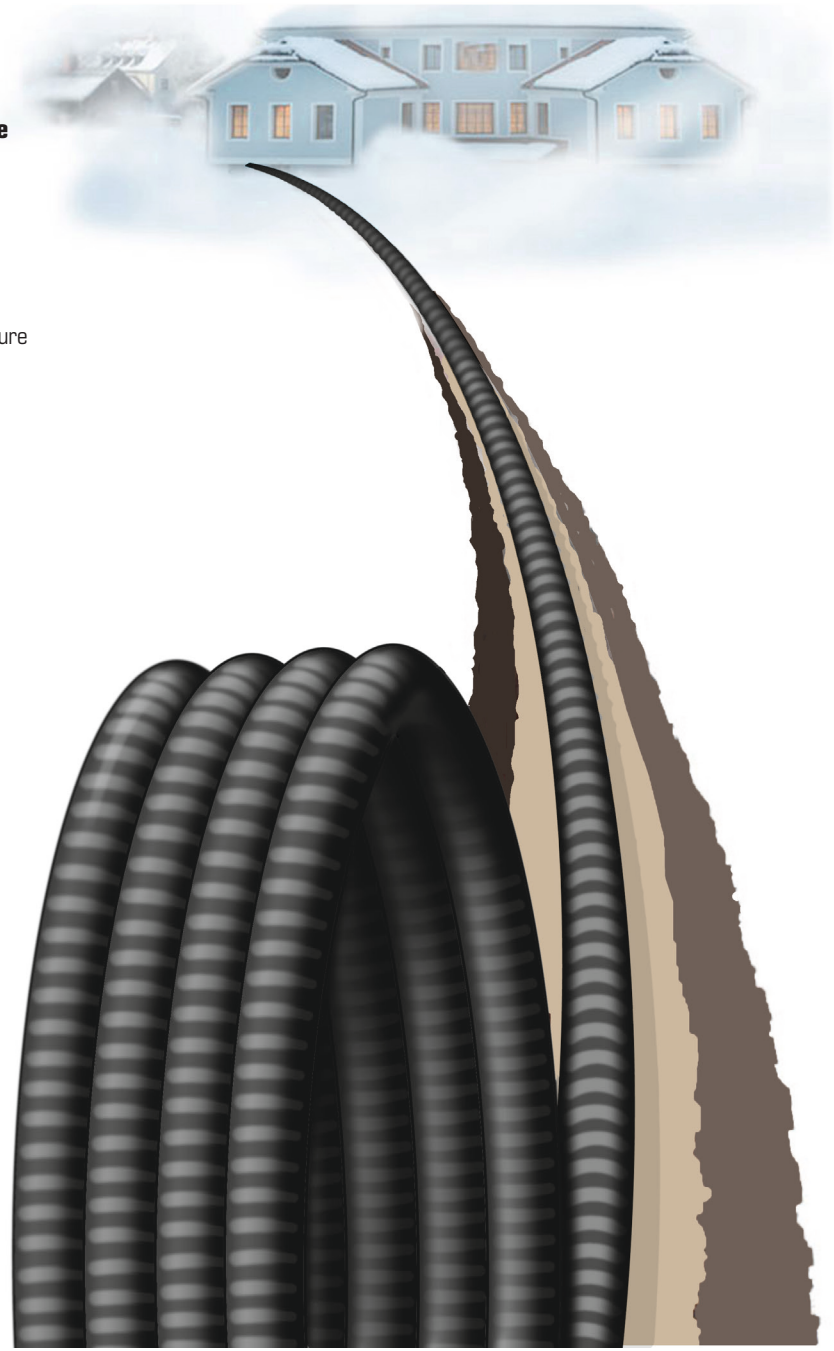
Max. operating pressure:
pmax. 10bar

Max. continuous operating temperature:
tbmax. 80°C

Max. operating temperature:
tmax. 95°C (sliding)

Fiber-reinforced PEX pipes for higher pressure requirements upon request!

For heat distribution systems with increased temperature/pressure/ size, the KELIT P KMR steel pipe system should be used (request CD-Rom!)



Benefits

There is a large range of benefits wherever the spatial conditions are suitable:

- In contrast to commonly used metal pipe systems, high resistance to chemicals in the water, free of corrosion.
- Smooth inside surface – minimal pressure loss. Therefore smaller dimensions with a higher flow velocity.
- Nearly no fittings in the ground. Supply lengths up to 800 running meters.
- Narrow pipe trenches (only about 60% of steel pipe system trenches).
- DUO pipes additionally save on excavation costs.
- **Tight bending radii**

  Their flexibility permits easy adjustment to almost any trench conditions.
  Existing supply lines can be easily crossed above or below.
- **Composite system**

  The PUR foam and the medium pipe form a composite which significantly hampers the expansion of leakage water (along the medium pipe).
  At the same time, the resulting composite properties permit pipe-laying without requiring expensive measures to handle thermal expansion.
- Pipe-laying quick and easy.
- Selected range of accessories to expand the system.

PEX heating system description

Thanks to a continuous production process, all layers form a joint force-fitting connection.

Medium pipe

Material	Cross-linked polyethylene PEX Basic material PE HD DIN 16892/16893
Cross-linking	Peroxide (Engel process) PEXa
Density	930 – 940 kg/m^3
Thermal conductivity	0.38 W/mK
Tensile strength	20°C: 26 – 30 N/mm^2 80°C: 18 – 20 N/mm^3
Specific thermal expansion	0.175 mm/mK
Modulus of elasticity	300 – 900 N/mm^2
Crystalline melting point	130 – 136°C
Properties	Unaffected by aggressive water, minimal pressure losses, excellent resistance to chemicals, and mechanical durability
Adhesion promoter	PE-modified, heat-stabilized, color red
Oxygen diffusion barrier	Organic EVOH barrier, heat stabilized, <0.10 g/m^3 d, acc. to DIN 4726
Pipe series	SDR 11– PN 12.5
Application area	20°C/12,5 bar; 80°C/6 bar; t max. 95°C

Thermal insulation

PUR foam	CFC-free, cyclopentane-blown, semi-flexible polyurethane foam
Thermal conductivity	≤ 0.0216 W/mK at 50°C
Density	> 50kg/m^3
Closed cells	≥ 90%
Water absorption after 24h	≤ 10%
Axial shear strength	≥ 90 kPa acc. to EN 15632-2

Jacket pipe

Material	Low-density polyethylene (LLD-PE) sinusoidal, corrugated, seamlessly extruded
Function	Protects against mechanical influences and humidity
Density	918 – 938 kg/m^3
Crystalline melting point	105 – 110°C
Graphite content	> 2% in acc. with EN 15632-1

System description PEX sanitary

This pipe is used in the sanitary facilities thanks to the continuous production process with 100% CO_2-blown PUR foam.

Medium pipe

Material	Cross-linked polyethylene PEX Basic material PE HD DIN 16892/16893
Cross-linking	Peroxide (Engel process) PEXa
Density	930-940 kg/m^3
Thermal conductivity	0.38 W/mK
Tensile strength	20°C: 26–30 N/mm^2 80°C: 18–20 N/mm^3
Specific thermal expansion	0.175 mm/mK
Modulus of elasticity	300-900 N/mm^2
Crystalline melting point	130-136°C
Properties	Unaffected by aggressive water, minimal pressure losses, excellent resistance to chemicals, and mechanical durability
Adhesion promoter	PE-modified, heat-stabilized, color silver
Pipe series	SDR 7.4–PN 16
Application area	20°C/16 bar; 80°C/10 bar; t max. 95°C

Thermal insulation

PUR foam	CFC-free, 100% CO_2-blown, semi-flexible polyurethane foam
Thermal conductivity	≤ 0.0234 W/mK at 50°C
Density	> 50 kg/m^2
Closed cells	≥ 90%
Water absorption after 24h	≤ 10%
Axial shear strength	≥ 90 kPa acc. to EN 15632-2

Jacket pipe

Material	Low-density polyethylene (LLD-PE) sinusoidal, corrugated, seamlessly extruded
Function	Protects against mechanical influences and humidity
Density	918–938 kg/m^3
Crystalline melting point	105–110°C
Graphite content	> 2% in acc. with EN 15632-1

Heat loss for heating PEX single pipes

Heat loss: Q_R (W/m)

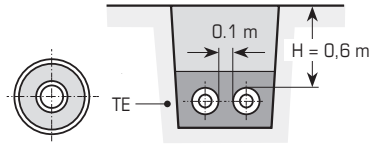
Physical principle: Between two media that have different temperatures heat always equalizes from hot to cold (heat flow).
In practice, this is expressed as heat loss (Q_R) in Watt (W).

Heat loss can be calculated based on the formula:

Q_R = U (TB-TE)

U: Spec. Heat transition coefficient (W/mK)
TB: average operating temperature (F + RF)/2 (°C)
TE: average ground temperature (10°C)

Piping layout drawing



Heat loss (QR) acc. to the layout drawing for a PEX single pipe pair flow and return flow – insulation series 1

Type	U value	Average operating temperature TB (°C)				
PEX00-1	W/mK	40°	50°	60°	70°	80°
25/76	0.1142	6.85	9.14	11.42	13.70	15.99
32/76	0.1442	8.65	11.54	14.42	17.30	20.19
40/91	0.1510	9.06	12.08	15.10	18.12	21.14
50/111	0.1551	9.31	12.41	15.51	18.61	21.71
63/126	0.1767	10.60	14.14	17.67	21.20	24.74
75/142	0.1908	11.45	15.26	19.08	22.90	26.71
90/162	0.2057	12.34	16.46	20.57	24.68	28.80
110/162	0.2957	17.74	23.66	29.57	35.48	41.40
125/182	0.3028	18.17	24.22	30.28	36.34	42.39
140/202	0.3084	18.50	24.67	30.84	37.01	43.18

Heat loss (QR) acc. to the layout drawing for a PEX single pipe pair flow and return flow – insulation series 2

Type	U value	Average operating temperature TB (°C)				
PEX00-2	W/mK	40°	50°	60°	70°	80°
25/91	0.0910	5.46	7.28	9.10	10.92	12.74
32/91	0.1110	6.66	8.88	11.10	13.32	15.54
40/111	0.1140	6.84	9.12	11.40	13.68	15.96
50/126	0.1260	7.56	10.08	12.60	15.12	17.64
63/142	0.1420	8.52	11.36	14.20	17.04	19.88
75/162	0.1616	9.70	12.93	16.16	19.39	22.62
90/182	0.1747	10.48	13.98	17.47	20.96	24.46
110/182	0.2355	14.13	18.84	23.55	28.26	32.97
125/202	0.2771	16.63	22.17	27.71	33.25	38.79

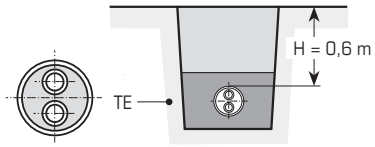
Heat loss Heating DUO-PEX

Heat loss can be calculated based on the formula:

Q_R = U (TB-TE)

U: Spec. Heat transition coefficient (W/mK)
TB: average operating temperature (F + RF)/2 [°C]
TE: average ground temperature [10°C]

Piping layout drawing



Heat loss (QR) acc. to the layout drawing for a DUO-PEX pipe – insulation series 1

Type	U value	Average operating temperature TB (°C)				
PEX03-1	W/mK	40°	50°	60°	70°	80°
25+25/91	0.1786	5.36	7.14	8.93	10.72	12.50
32+32/111	0.1829	5.49	7.32	9.15	10.97	12.80
40+40/126	0.2108	6.32	8.43	10.54	12.65	14.76
50+50/162	0.1954	5.86	7.82	9.77	11.72	13.68
63+63/182	0.2381	7.14	9.52	11.91	14.29	16.67
75+75/202	0.2802	8.41	11.21	14.04	16.81	19.61

Heat loss (QR) acc. to the layout drawing for a DUO-PEX pipe – insulation series 2

Type	U value	Average operating temperature TB (°C)				
PEX03-2	W/mK	40°	50°	60°	70°	80°
25+25/111	0.1285	3.86	5.14	6.43	7.71	9.00
32+32/126	0.1431	4.29	5.72	7.16	8.59	10.02
40+40/142	0.1594	4.78	6.38	7.97	9.56	11.16
50+50/182	0.1662	4.99	6.65	8.31	9.97	11.63
63+63/202	0.2075	6.23	8.30	10.38	12.45	14.53

Q_R is easy to calculate for the average operating temperatures (TB) which are not taken into account in the table values!

Example - single pipes:

Dimension:	d40/91
Flow:	75 (°C)
Return flow:	55 (°C)
TB:	65 (°C)
TE:	10 (°C)
U:	0.1510 W/mK
QR (W/m):	U (TB – TE) x 2
	0.1510 x (65 – 10) x 2
	16.61 (W/m)

Example DUO-PEX:

Dimension:	d50+50/182
Flow:	75 (°C)
Return flow:	55 (°C)
TB:	65 (°C)
TE:	10 (°C)
U:	0.1662 W/mK
QR (W/m):	U (TB – TE)
	0.1662 x (65 – 10)
	9.14 (W/m)

Heat loss Sanitary PEX Single Pipes

Heat loss: Q_R (W/m)

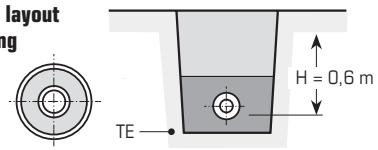
Physical principle: Between two media that have different temperatures heat always equalizes from hot to cold (heat flow).
In practice, this is expressed as heat loss (Q_R) in Watt (W).

Heat loss can be calculated based on the formula:

Q_R = U (TB-TE)

U: Spec. Heat transition coefficient (W/mK)
TB: average operating temperature (°C)
TE: average ground temperature (10°C)

Piping layout drawing

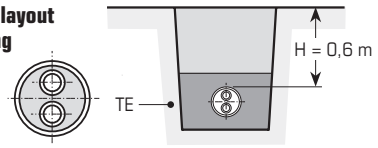


Heat loss (QR) acc. to the layout drawing for a PEX pipe SANITARY

Type PEX05	U value W/mK	Average operating temperature TB (°C) 40°	50°	60°	70°
20/76	0.1131	3.39	4.52	5.66	6.79
25/76	0.1387	4.16	5.55	6.94	8.32
32/76	0.1588	4.76	6.35	7.94	9.53
40/91	0.1666	5.00	6.66	8.33	10.00
50/111	0.1713	5.14	6.85	8.57	10.28
63/126	0.1957	5.87	7.83	9.79	11.74

Heat loss Sanitary DUO-PEX

Piping layout drawing



Heat loss (QR) acc. to the layout drawing for a DUO-PEX pipe SANITARY

Type PEX06	U value W/mK	Average operating temperature TB (°C) 40°	50°	60°	70°
25+20/91	0.1956	5.87	7.82	9.78	11.74
32+20/111	0.1677	5.03	6.71	8.39	10.06
40+25/126	0.1878	5.63	7.51	9.39	11.27
50+32/142	0.2476	7.43	9.90	12.38	14.86

KE KELIT

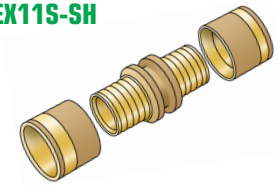
Two general PEX connection methods

The PEX press and clamping connections in the sanitary and heating area must reliably fulfill the following requirements:

- cold and hot water-resistant up to 95°C
- thermally relaxed brass
- longitudinal friction connections
- Threads according to EN 10226
- Chlorine or chlorine dioxide concentrations within the scope of the drinking water standard do not pose a problem for the fittings and pipes
- Care must be taken, however, that no elevated chlorine or chlorine dioxide concentrations (e.g. swimming pool water) are used

PEX press connections for sanitary applications

PEX11S-SH

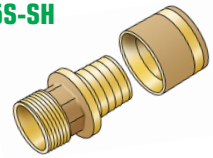


PEX-PEX press connection SANITARY

PEX brass press connections
for pipes SDR 7.4
Reduced model available upon request!

Dimensional range:
Sanitary: d20–d63mm

PEX15S-SH

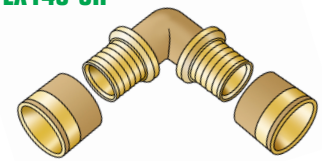


PEX press connection with male thread SANITARY

Brass PEX press connection
for pipes SDR 7.4
Adapter with male thread
in accordance with EN 10226

Dimensional range:
Sanitary: d20/1/2"–d63/2"

PEX14S-SH

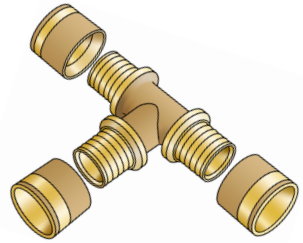


PEX press connection elbow 90° SANITARY

Brass PEX press connection
for pipes SDR 7.4

Dimensional range:
Sanitary: d20–d63mm

PEX19S-SH



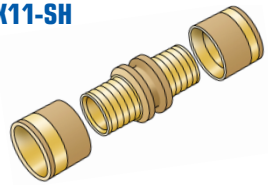
PEX press connection Tee-piece SANITARY

Brass PEX press connection
for pipes SDR 7.4
Reduced model available upon request!

Dimensional range:
Sanitary: d20–d63mm

PEX press connections for heating

PEX11-SH

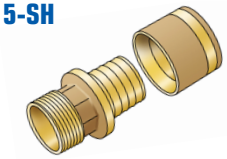


PEX-PEX press connection

Brass PEX press connection
for pipes SDR 11
Reduced model available upon request!

Dimensional range:
Heating: d25–d140mm

PEX15-SH

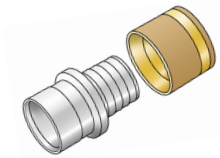


PEX press connection with male thread

Brass PEX press connection
for pipes SDR 11
Adapter with male thread
in accordance with EN 10226

Dimensional range:
Heating: d25/3/4“–d125/5“

PEX13-SH

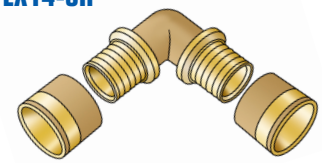


PEX press connection with welding end

Steel/PEX press connection made
of metal for pipes SDR 11
Adapter with welding end made
of steel ST 37.0

Dimensional range:
Heating: d25/DN20–d140/DN125

PEX14-SH

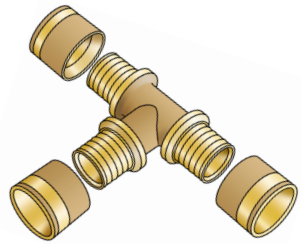


PEX press connection elbow 90°

Brass PEX press connection
for pipes SDR 11

Dimensional range:
Heating: d25–d125mmmm
d140mm upon request!

PEX19-SH



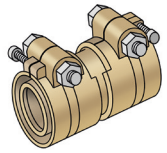
PEX press connection Tee piece

PEX brass press connections
for pipes SDR 11
Reduced model available upon request!

Dimensional range:
Heating: d25–d125mm
d140mm upon request!

PEX clamping connections for Sanitary

PEX11S-K

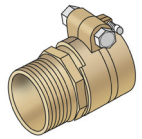


PEX-PEX clamping connection SANITARY

Brass clamping connection
for pipes SDR 7.4

Dimensional range:
Sanitary: d20–d63mm

PEX15S-K

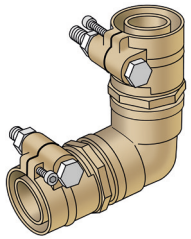


PEX clamping connection with male thread SANITARY

Brass clamping connection
for pipes SDR 7.4

Dimensional range:
Sanitary: d20/3/4"–d63/2"

PEX14S-K

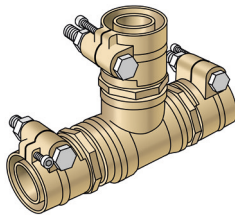


PEX clamping connection Elbow 90° SANITARY

Brass clamping connection
for pipes SDR 7.4

Dimensional range:
Sanitary: d20–d63mm

PEX19S-K



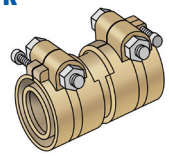
PEX clamping connection Tee piece SANITARY

Brass clamping connection
for pipes SDR 7.4

Dimensional range:
Sanitary: d20–d63mm

PEX clamping connections for heating

PEX11-K

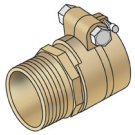


PEX-PEX clamping connection

Brass clamping connections
for pipes SDR 11

Dimensional range:
Heating: d25–d125mm

PEX15-K

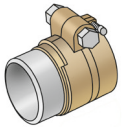


PEX clamping connection with male thread

Brass clamping connections
for pipes SDR 11

Dimensional range:
Heating: d25/3/4"–d125/4"

PEX13-K

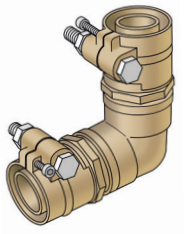


PEX clamping connection with welding end

Brass clamping connection
for pipes SDR 11
Welding end made of steel ST 37.0

Dimensional range:
Heating: d25/DN20–d140/DN125

PEX14-K

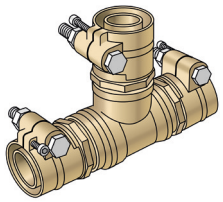


PEX clamping connection Elbow 90°

Brass clamping connections
for pipes SDR 11

Dimensional range:
Heating: d25–d125mm

PEX19-K



PEX clamping connection Tee piece

Brass clamping connections
for pipes SDR 11

Dimensional range:
Heating: d25–d125mm

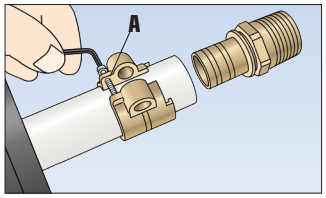
Installation instructions for the PEX clamping connection

Application: Usually for all fittings in accessible, but also inaccessible locations.

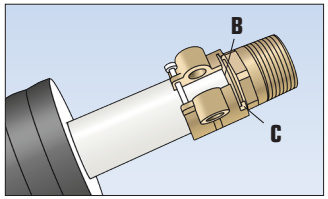
The installation of PEX clamp fittings for heating and sanitary applications is the same for all models (PEX11-K, 13-K, 14-K, 15-K, 19-K and PEX11S-K, 14S-K, 15S-K, 19S-K)!

Clamp fittings are detachable!

1. Cut the medium pipe at right angles with pipe scissors or a pipe cutter. Deburr the pipe on the inside and outside.



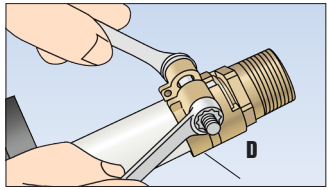
2. Remove the clamping screw and screw the expansion screw (A) into the clamp sleeve using an Allen key to expand the sleeve. Slide the clamp sleeve onto the pipe as shown.



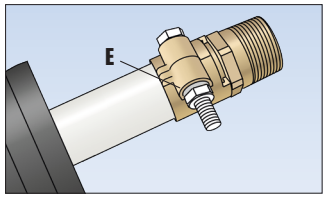
3. Push the support socket fully to the stop into the medium pipe (B).

4. Position the clamp sleeve such that the claws engage in the groove (C) of the support socket.

5. The expansion screw (A) can now be removed, and the clamping screw (D) can be inserted.



6. Gradually tighten the clamp screw to give the PEX material time to adjust to the fitting contours. Make sure that the support socket remains in position (B) and that the claws do not slide out of the groove.



7. Tighten the clamping screw so that the slit (E) of the clamp sleeve is fully closed. For fittings ≥d63, it is recommended that the clamp sleeve is tightened gradually to give the PEX material time to adjust. For larger diameters, this process may take 30 minutes or more.

7.1 The stainless steel clamping screw is factory-greased.
For fittings > d63mm, we recommend adding additional thread lubricant or graphite anti-seize paste.

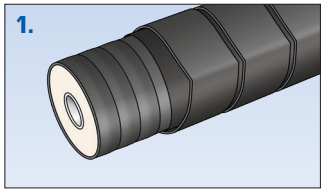
8. In the event of inaccessible places (e.g. below ground), a pressure test must be performed after installation during which the medium pipe connections are easily visible (page 35).

Installation instructions for the PEX press connection

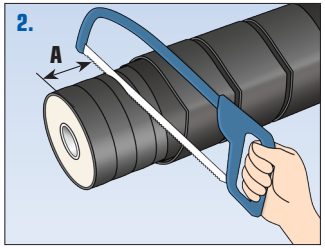
Application: Usually for all connections below ground and in other inaccessible places!

The installation of PEX press fittings is the same for all models used for heating and sanitary applications!
Models used in heating applications: PEX11-SH, 13-SH, 14-SH, 15-SH and 19-SH
Models used in sanitary applications: PEX11S-SH, 14S-SH, 15S-SH and 19S-SH

Press connections are non-detachable!



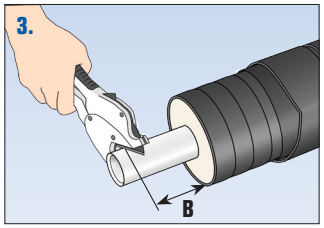
1. Push the shrink socket and the shrink sleeves onto a pipe end.



2. Cut through the jacket pipe across its entire circumference without damaging the medium pipe and remove the PUR foam.

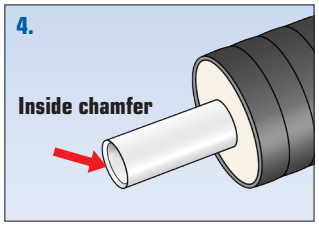
Size A = Size B + min. 20mm

Size B	d25–50mm	d63-140mm
KELIT PEX	140mm	180mm
DUO PEX	140mm	180mm



3. Cut the medium pipe at right angles with pipe scissors or a pipe cutter to size B (see table)

Since the pushed-on sliding sleeve must not be affected by the pipe expansion process, the free pipe end must be at least 3x the length of the sliding sleeve.

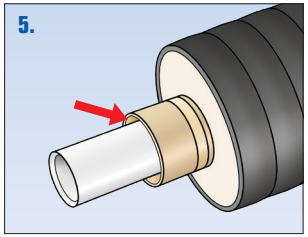


4. Chamfer the medium pipe on the inside, deburr (arrow) and remove the residues of the PUR insulation material, if any.

Do NOT mix up flow and return flow!

Note the labeling of the pipes when using the DUO-PEX system!

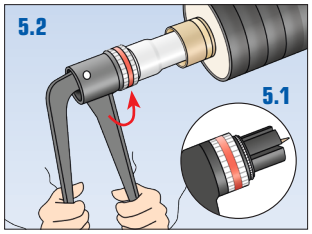
The pipe ends and press fittings must be free of any contamination when they are joined!
Protect all tools against contamination and check them for proper functionality before starting to work on the respective process steps!



5. Slide the sliding sleeve to the rear end of the insulated medium pipe.

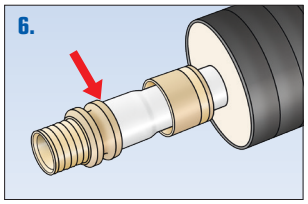
- The chamfer of the sliding sleeve (arrow) must point towards the press fitting!

5.1 Screw the dimension-specific expansion mandrel onto the expansion tool and push it into the pipe end to the stop without tilting.



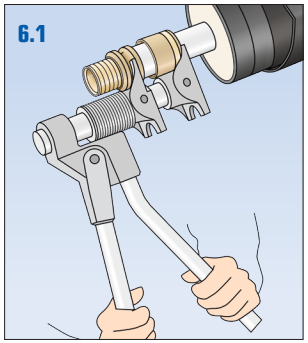
5.2 Expand the pipe once, then turn the expansion tool by about 30° and expand the pipe, which has not changed position, a second time.

- The pipe must not be heated up with an open flame or hot air.
- If cracks form in the expansion area or due to an improperly expanded pipe end, the defective pipe end must be cut off and the process must be repeated.



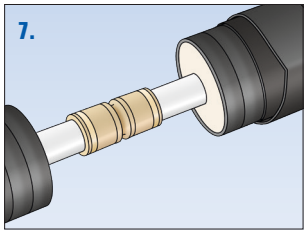
6. Insert the press fitting immediately after the expansion process to the stop into the expanded pipe (arrow)!

- The fitting will be fixed in its position shortly after it was inserted due to the "memory effect".
- All sealing lips of the fitting must be covered by the pipe!



6.1 Insert the dimension-specific pressing jaws into the pressing tool and press the sliding sleeve (either manually or using hydraulic force) fully onto the fitting.

- Tension-free processing!
- Do not tilt unpressed fittings when positioning the tool and ensure to fasten it correctly in the tool!
- The pressing tool must be placed on the correct fitting flange!
- No lubricant or similar substances may be used during pressing!
- Check the press connection visually for damage!
- Do not touch the mobile parts of the tool during pressing!



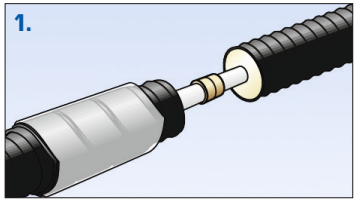
7. The approach is the same for all press connections.

The pressed connection is immediately pressure and temperature-resistant after the pressing process!

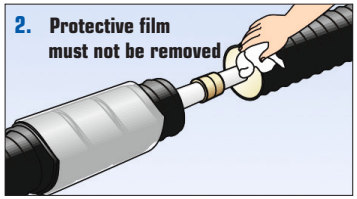
Important: For KELIT-PEX press connections with welding end (PEX13-SH), the welding must be performed first followed by the pressing!

Installation instructions for the PEX connecting socket

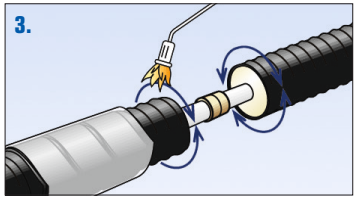
The installation of the double-sealing connecting socket requires that the individual process steps are carefully adhered to. It may not be easy to get the pipe trench clean and dry, but it is absolutely necessary in order to achieve a permanent sealing function!



1. The complete, packaged shrink socket was already pushed onto a pipe end BEFORE the coupling was installed (pages 19–21). Leak-tightness has been checked.



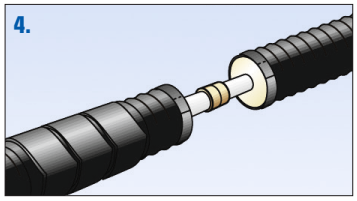
2. Clean at least 150mm of the two jacket pipe ends and remove any soil, dust and humidity.
Important: Clean and dry



3. Activate at least 100mm of the jacket pipes at both pipe ends using a burner flame until their surface has a silky sheen.

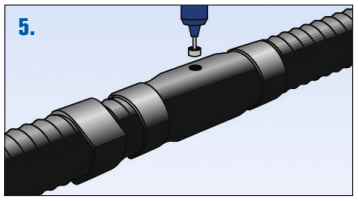
Important:
Across the entire circumference

4. Circumferentially attach the supplied permanently elastic sealing cords flush with the insulation end to both jacket pipe ends. Allow an overlap of around 20–50 mm at the butt-joint.



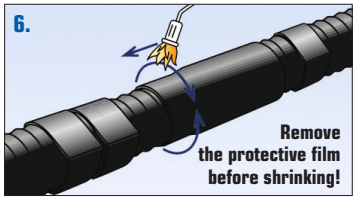
5.1 Remove the package from the shrink socket.

5.2 Push the three shrink sleeves out of the work zone.
Ensure that the socket is **clean** and **dry**, both inside and out.

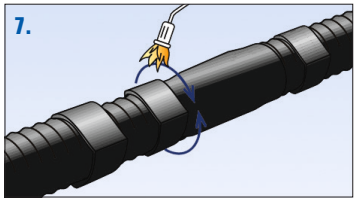


5.3 Center the socket above the joint.

5.4 Using a 24mm drill bit, drill a foam filling hole in the middle of the socket. If the pipeline has not been installed horizontally, the bore hole must be placed at the highest point within the insulated area.



6. Shrink on the socket ends on both sides about 100mm from the inside to the outside.

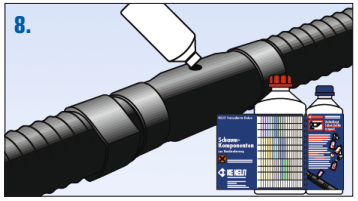


7.1 Remove the packaging and protective film from a collar.
Make sure that all paper has been removed.

7.2 Correct placement:
During the shrinking process, the middle of the sleeve must be above the end of the socket.

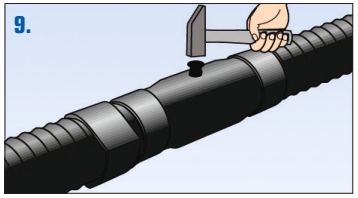
7.3 Thermally shrink it on across the entire circumference.

7.4 Proceed in the same way with the second sleeve at the other end of the socket.



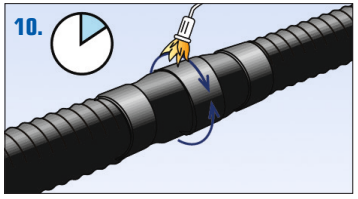
8. Mix the supplied 2-component foam following the instructions on the foam packaging and empty into the filling hole.

Important: Dimension-specific!



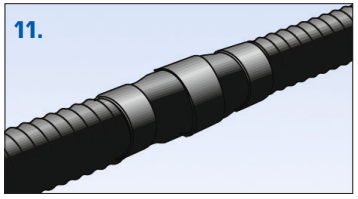
9. Knock in the vent plug until it snaps in at the first marking.

9.1 Once foam comes out of the ventilation hole, the vent plug must be fully knocked in.



10. After the foam has fully hardened (approx. 1-2 hours depending on the ambient temperature), the third sleeve can be shrunk on in the center above the plug.

Important: Remove foam residues, clean, activate.

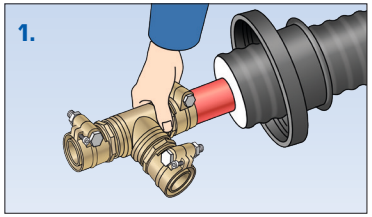


11. The socket is done. Before the pipe trench is filled, a visual inspection of the shrink socket must be performed particularly checking for blisters and the seat of the shrink sleeve.

RECOMMENDED: Perform steps 1 – 9.1 in one go!

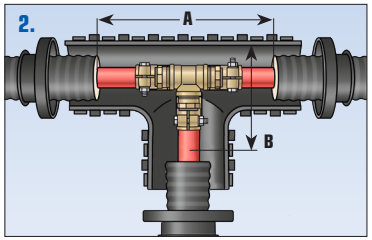
Installation instructions for the PEX socket set - E

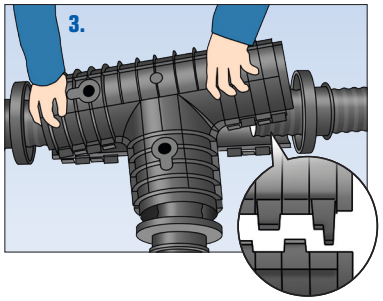
PEX48I-E socket set - E
PEX48L-E elbow socket set - E
PEX48T-E tee piece socket set - E

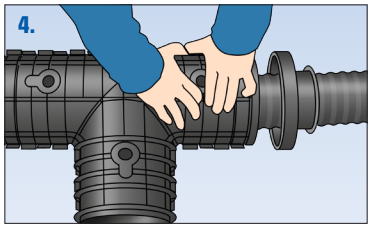


A: SMALL Da 76–142 max. 540mm
B: SMALL Da 76–142 max. 350mm

A: LARGE Da 76–202 max. 640mm
B: LARGE Da 76–202 max. 430mm







1. Insulate the PEX pipes
d25 –50mm: 140mm
d50 –125mm: 160mm

2. Slide all PEX48D-E socket sealing rings SMALL or LARGE depending on dimension and fitting used onto the pipe end.
ATTENTION: The socket sealing rings must be slid on before the medium pipe connection.

The jacket pipes may require cleaning and should be lubricated or moistened with a silicone-free or acid-free lubricant, if needed.

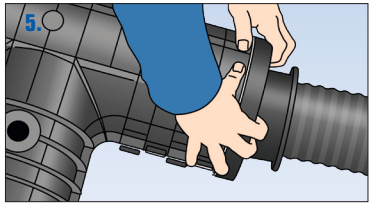
2.1 The seal flange of the socket sealing ring must point towards the respective fitting.

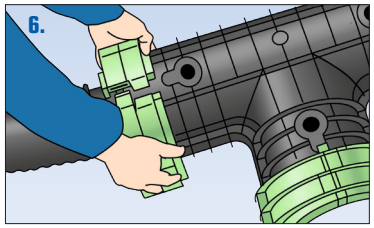
3. Connect the medium pipes according to installation instructions of PEX press connections or PEX clamping connections so they are leakproof.
(Pages 19–21)

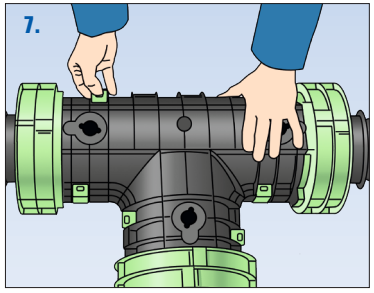
4. The lower half-shell (WITHOUT foam filling holes) of the socket SET incl. the inserted seal must be installed below the connected pipes.

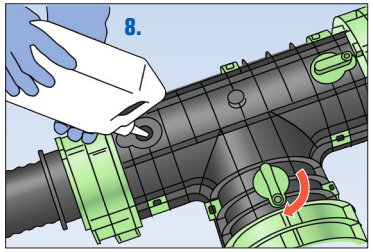
4.1 Place the upper half-shell precisely fitting on the lower half-shell and position it with the longer guiding ridges.
(See detailed view)

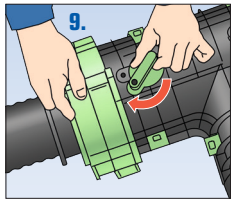
4.2 Manually press the half-shell or the clips together until all clips are hooked in.

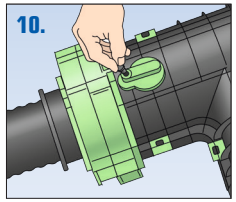












5. After latching all clips, pull the socket sealing rings towards the socket and pull them over the socket.

ATTENTION: Clean the sealing surface of the socket sealing ring and the fitting before pulling it over the molded part!

6. Fasten the socket sealing rings to the socket with the half-shell of the lock rings.

7. Fasten the upper and lower half-shells to each other at the positions marked with an arrow using the supplied clips.

7.1 Leave the foam filling hole located at the highest point open for filling in the PU foam. Close all other holes of the fitting with the plugs.

8. Prepare the supplied foam SET according to the instructions and pour the foam into the shell.

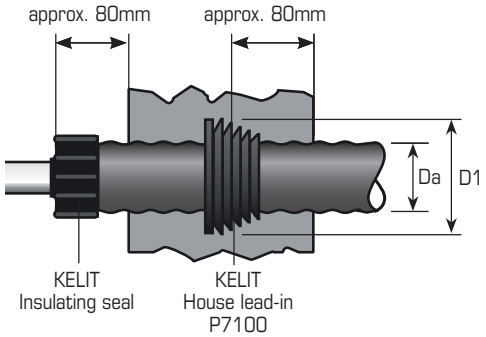
9. Immediately after pouring in the foam, close the opening of the half-shells with the plug by turning it (1/4 turn).

9.1 The air must still be able to exit from the unsealed rubber plug!

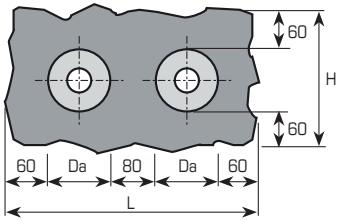
10. Let the PU foam harden for about 10 minutes. After that, all rubber plugs must be plugged into the vent holes.

P7100 KELIT-PEX house lead-in

For pressure water, an annular seal must always be used. For seepage water or soil water, the KELIT house lead-in is available.



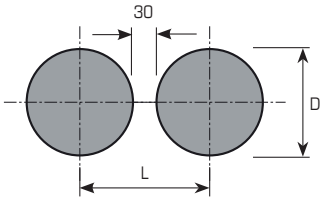
Note: To enable a circumferential discharge from the house lead-in, the wall opening must always be significantly larger than the max. outside diameter of the conically shaped house lead-in.



Wall opening

Jacket pipe Da mm	P7100 D1 approx. mm	L approx. mm	H approx. mm
76	114	360	200
91	126	390	220
111	150	430	240
126	166	540	250
142	182	570	270
162	196	600	290
182	215	640	310
202	233	680	380

Core hole diameter

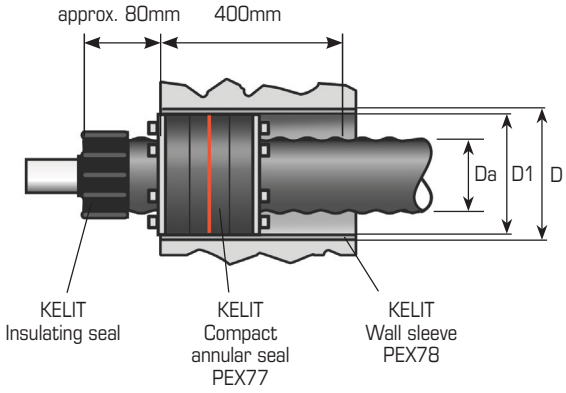


Core hole

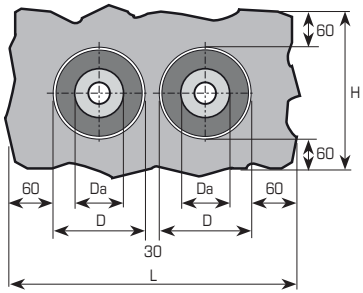
Jacket pipe Da mm	P7100 D1 approx. mm	D approx. mm	L approx. mm
76	114	180	210
91	126	200	230
111	150	220	250
126	166	240	270
142	182	250	280
162	196	270	300
182	215	300	330
202	233	330	360

PEX77 KELIT Compact annular seal

Annular seal for core holes or wall sleeves in the masonry, standard model against pressing water with stainless steel screws.



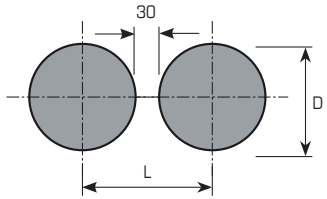
PEX78 KELIT wall sleeve



Wall opening

Jacket pipe Da mm	PEX78 D mm	L approx. mm	H approx. mm
76 – 91	150	450	270
111 – 142	200	550	320
162 – 202	250	650	370

Diameter of the core hole in relation to the inside diameter of the wall sleeve or the outside diameter of the Compact annular seal (D1)

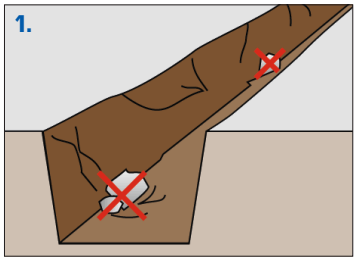


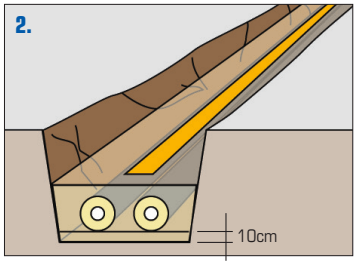
Core hole

Jacket pipe Da mm	PEX77 D1 mm	D approx. mm	L approx. mm
76-91	148	150	180
111-142	198	200	230
162-202	248	250	280

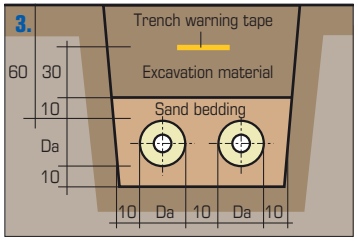
The pipe trench

With PEX pipes it is possible to choose the shortest pipe-laying route – practically without considering traditional pipe-laying methods (steel). Existing supply lines can be crossed, either from above or below, and obstructions can be easily bypassed.

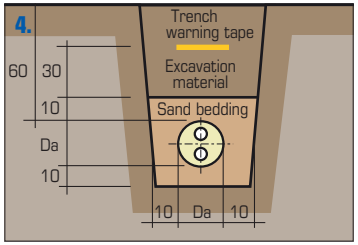




Ideal dimensions in cm



Ideal dimensions in cm



The trench profile

1. Protruding stones and rocks in the trench must be removed.

1.1 Maximum laying depth: 2.6m, greater laying depths require KE KELIT- Application Engineering's approval! Minimum coverage of the pipes 60cm.
This coverage of the pipes achieves an overall live load of 300 kN.
To achieve a higher load, a load-distributing superstructure is necessary.

Without live load, the minimum trench depth can be reduced by 20 cm.

2. **Before** laying the pipes in the prepared pipe trench, with stones and rocks removed, put approx. 10cm of sand as bedding.

2.1 The pipe trench must be rendered large enough for required installation work in the area of the fittings.

3. Place the pipe on the sand bed.

3.1 Backfill with sand once the respective checks were performed: Grain size 0-4mm. Insert the trench warning tape.

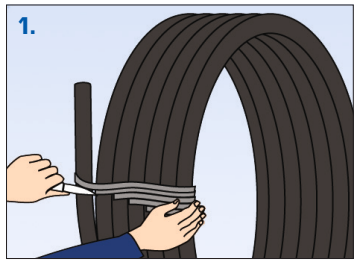
ATTENTION: Remember to consider using Thermosand® to reduce heat losses.

3.2 Fill with excavation material and finish with the final surface.

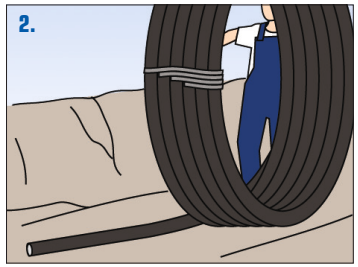
4. Observe the small trench dimensions when using KELIT DUO PEX! The installation is the same as with PEX single pipes.

Pipe laying

- PEX coils are under tension! Do not cut all fastening tapes at the same time! There is a **risk** of injury due to uncontrolled springing open of the coils! (spring effect)
- If possible, the tubing should be laid out next to the pipe trench the day before. This makes installation considerably easier.
- ATTENTION: Do not lay pipes at temperatures below 5°C. The pipes should only be installed once they have been stored for at least 24 hours at more than 10°C.
- The KELIT PEX tubing is delivered in the desired length.
  This allows installation underground largely without joints. This leads to very short installation times and ensures cost-savings during implementation.

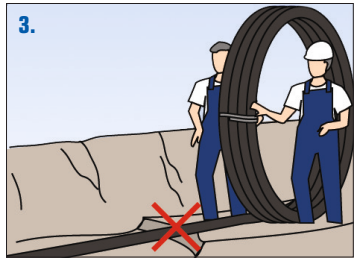


1. Place the PEX coil at the start of the trench and only cut open the outermost fastening tape.



2. Unroll the coil out until you reach the next fastening tape, release the next layer only then.

2.1 Repeat this process until the coil has been fully unrolled.



3. Do not unroll the PEX coil across edges, and do not pull the unrolled tubing across longer distances on asphalt or sharp or spiky ground.

This might damage the protective polyethylene cover. Damage on the cover can be repaired using a shrinking hose.

Pipe routing

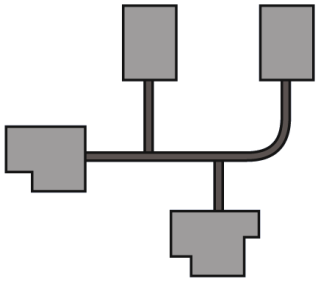
KELIT PEX is flexible in the best sense of the word! Its high own elasticity permits quick, cost-efficient, but still secure connection options:

The “traditional method

Installation with system-conforming branches

Benefits:

- Potentially shorter pipe lengths
- Rest pieces are utilized
- Conventional planning

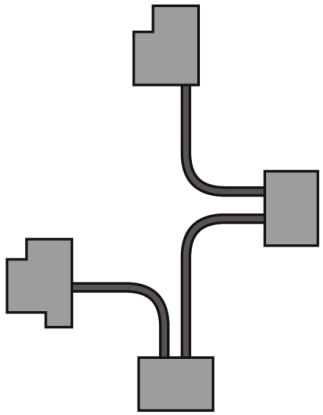


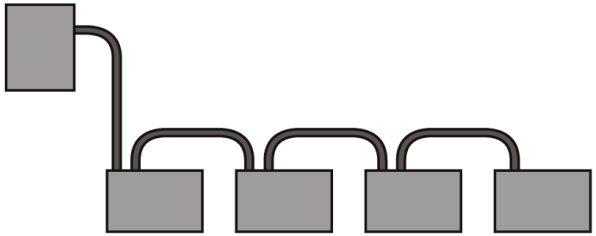
"The pulling-in technology"

Without using branches underground and thus without using socket joints!

Benefits:

- Very quick pipe installation
- Unrestricted pipeline routing
- No socket joints = security
- Method of choice for easy house-to-house pipelines

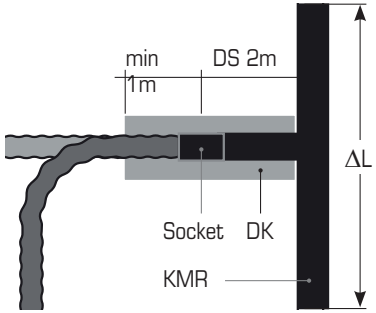




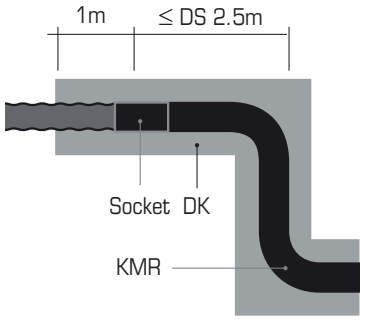
Connection of PEX to KELIT steel systems

If mixed (PEX-steel) networks are unavoidable, the following rules must be followed:

1. Outlet with tee piece
The lateral expansion (ΔL) must not be greater than what can be absorbed in the KELIT PEX line via the expansion leg (DS) and the expansion pad (DK).



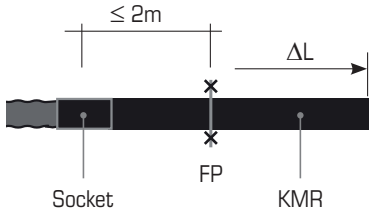
2. Adapter with z-elbow
The expansion (Δl) of the KMR is calculated statically and compensated accordingly.
Expansion pads (DK) provide the required space.



3. Adapter with fixed point
NOT RECOMMENDED!
The KMR's linear expansion (ΔL) may not and must not compensated by the KELIT PEX pipe!

Fixed points (FP) must be set!

KMR = plastic jacket pipe (steel)
DS = Expansion leg
DK = Expansion pad
ΔL = Linear expansion



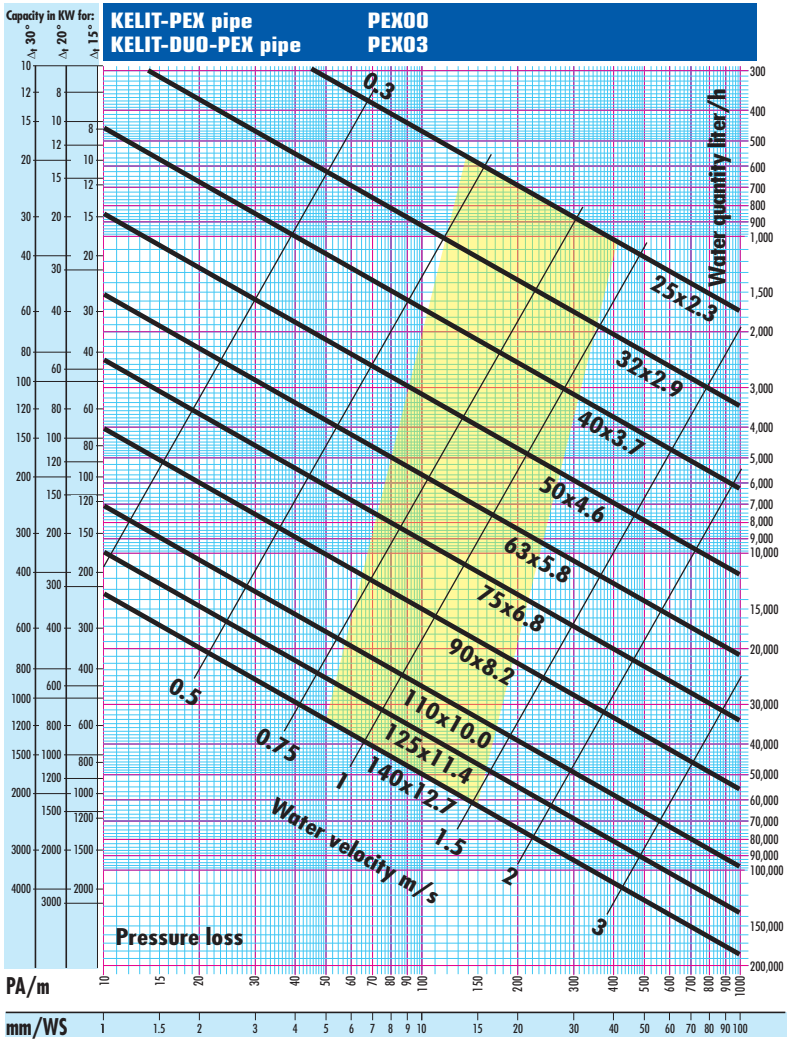
Dimensioning and pressure loss – heating

The pressure losses are calculated according to the Nikuradse formula:

$R=3.62315 \cdot 10^{3} \cdot \dot{m}^{1.70651} \cdot di^{-4.64237}$

	Pipe roughness	0.007mm
	Water temperature	80°C
R =	Pressure loss due to pipe friction	(Pa/m)
$\dot{m}$ =	Mass flux	(l/h)
di =	Inside pipe diameter	(mm)

The highlighted area indicates the recommended pressure range. The choice of dimension, however, first and foremost depends on the capacity and pipeline length!

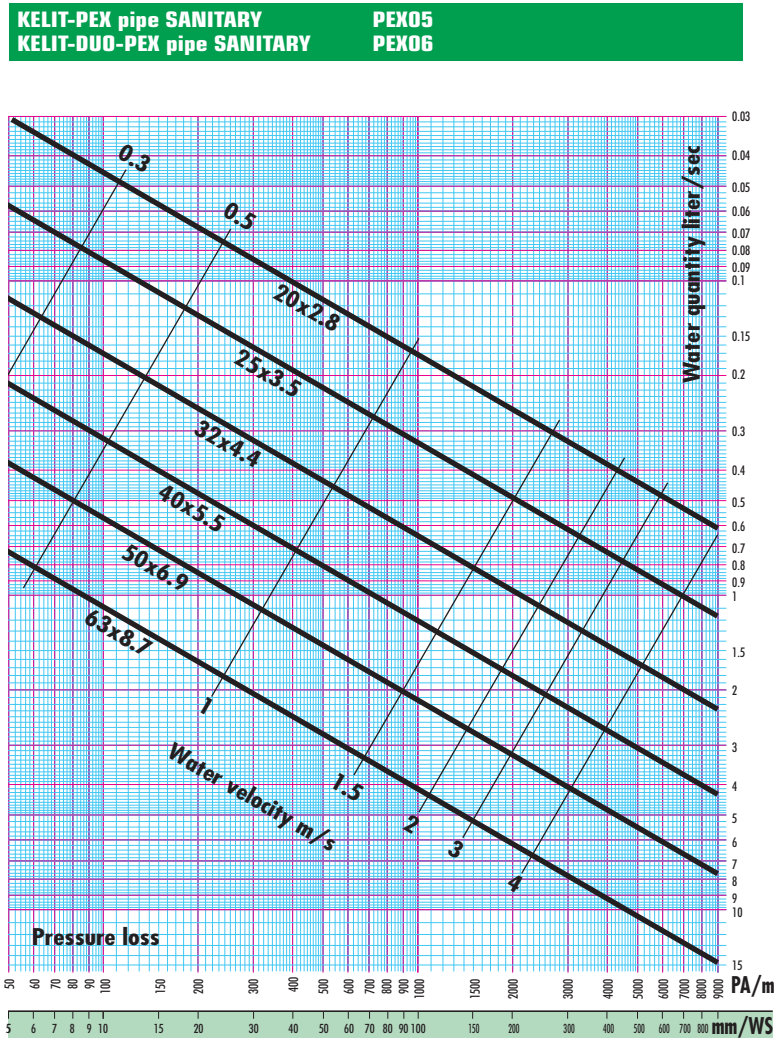


Dimensioning and pressure loss – sanitary

The pressure losses are calculated according to the Nikuradse formula:

$R=8.40560 \cdot 10^{9} \cdot \dot{m}^{1.78198} \cdot di^{-4.81506}$

	Pipe roughness	0.007mm
	Water temperature	60°C
R =	Pressure loss due to pipe friction	(Pa/m)
$\dot{m}$ =	Mass flux	(l/h)
di =	Inside pipe diameter	(mm)



Summary of the installation guidelines

1. The KELIT PEX piping system consists of a plastic composite and must be handled carefully to avoid shocks, impacts and loads.

2. All KELIT PEX parts must be carefully stored and transported. Protect the pipes, fittings and pipeline parts against extensive direct UV exposure. This does not apply to regular storage and processing times as the material has been UV-stabilized, but is only partially UV-resistant.

3. NO medium or jacket pipe connections are supplied for pre-fabricated elbows and Y-branch pipes. These must be ordered separately. Care must be taken that when installing reducing sockets, the dimension indicated on the socket is pushed onto the correct pipe end. In unshrunk condition, reducing sockets (PEX45) can only be correctly identified by the size labeling on the packaging.

4. Thanks to its flexibility, KELIT PEX pipes easily adjust to almost all trench conditions; existing underground lines can be crossed above or below. The minimum bending radii are primarily dependent on the jacket pipe diameters (pages 36, 37 and 44).

5. Please note the laying of pipes from the reel (page 29). PEX coils are under tension! Do not cut all fastening tapes at the same time, there is a risk of injury due to uncontrolled springing open of the coils.

6. KELIT PEX should not be processed at temperatures below 5°C. To ensure a material temperature of min. 5°C during the pipe-installation process, the pipes should be stored for at least 24 hours at a temperature of more than 10°C.

7. The KELIT PEX system is not suitable for use as primary pipeline for solar systems. The following precautions should be taken to ensure the max. permissible operating temperature

- Monitor and/or control the solar storage tank
- Check electrical connections of hot water storage tanks to ensure that they are correctly connected before commissioning
- To ensure the max. permissible operating temperature, we recommend installing a downstream domestic hot water mixer in the hot water line

8. The disinfection of the drinking water piping system must be performed in accordance with the KE KELIT disinfection guideline – **www.kekelit.com**

For disinfectants listed in ÖNORM B 5019 (e.g. chlorine, chlorine dioxide, ozone, etc.), the respective concentrations and exposure times must be adhered to and must not be exceeded. If the disinfection is performed not adhering to KE KELIT's disinfection guideline and/or the concentrations and exposure times specified in the standard, material damage cannot be excluded.

- In accordance with ÖNORM B 5019, a thermal disinfection is always to be preferred to a chemical disinfection!
- Copper and copper ions have a destabilizing influence and should therefore be avoided in the installations

9. At the system transitions from KELIT PEX to steel, an expansion of the steel pipelines must not impact the PEX pipe (pipe 31).

10. Inaccessible pipe connections (underground, etc.) should preferably have NON-detachable press connections (e.g. PEX11-SH). Detachable clamped connections (e.g. PEX11–K) can be used only in exceptional cases.

11. Every sanitary or heating pipeline must be pressure-tested. KE KELIT recommends performing the pressure test according to ÖNORM EN 14336 for sanitary pipelines, and the pressure test for drinking water according to ÖNORM EN 806-4.

12. You must observe installation instructions (pages 19-25) when installing medium pipe connections and coupling sleeves; care must be taken in particular that the medium pipes are NOT damaged during cleaning.

13. To ensure warranty services (warranty agreement with the Federal Guild of Construction), only KELIT PEX system components must be exclusively used in each installation case.

14. The proper installation of the KELIT PEX system requires a minimum of tools. For your safety, we recommend using our original tools which have been tried and tested multiple times in practice applications, and also that they be regularly serviced.

15. In case of doubt do not hesitate to contact our application technicians. There may not be an optimal solution for every case, but we can always help. Installation videos can be viewed using the KE KELIT QR code.
www.youtube.com/kekelit

Product range overview

The KELIT PEX cooling system is continuously adapted to practical requirements and systematically enhanced. Please see the current status of the supply range in the respectively applicable KELIT PEX price list.

PEX00-1 KELIT PEX pipe insulation series 1

Medium pipe: made of cross-linked polyethylene and a dyed O_2 diffusion layer, SDR 11
Application area: PN12.5 / 20°C - PN6 / 80°C - tmax 95°C
Thermal insulation: PUR foam, acc. to EN 253 / EN 15632-2 closed cell, CFC-free, lambda value ≤ 0.0216 W/mK
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length m
25x2.3	76	0.90	0.32	0.45	807
32x2.9	76	1.00	0.53	0.50	807
40x3.7	91	1.40	0.83	0.55	590
50x4.6	111	1.97	1.30	0.60	429
63x5.8	126	2.60	2.07	0.65	305
75x6.8	142	3.40	2.96	0.70	229
90x8.2	162	4.56	4.25	1.00	149
110x10.0	162	5.70	6.36	1.10	149
125x11.4	182	7.20	8.20	1.30	86
140x12.7	202	8.40	10.31	1.40	80

PEX00-2 KELIT PEX pipe insulation series 2

Medium pipe: made of cross-linked polyethylene and a dyed O_2 diffusion layer, SDR 11
Application area: PN12.5 / 20°C - PN6 / 80°C - tmax 95°C
thermal insulation: PUR foam, acc. to EN 253 / EN 15632-2 closed cell, CFC-free, lambda value ≤ 0.0216 W/mK
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length
25x2.3	91	1.20	0.32	0.65	590
32x2.9	91	1.40	0.53	0.70	590
40x3.7	111	1.70	0.83	0.75	429
50x4.6	126	2.40	1.30	0.80	305
63x5.8	142	3.10	2.07	0.85	229
75x6.8	162	3.90	2.96	0.90	149
90x8.2	182	4.80	4.25	1.20	86
110x10.0	182	6.60	6.36	1.30	86
125x11.4	202	7.80	8.20	1.50	80

PEX03-1 KELIT DUO-PEX pipe insulation series 1

Medium pipe: made of cross-linked polyethylene and a dyed O_2 diffusion layer, SDR 11
Application area: PN12.5 / 20°C - PN6 / 80°C - tmax 95°C
Thermal insulation: PUR foam, acc. to EN 253 / EN 15632-2 closed cell, CFC-free, lambda value ≤ 0.0216 W/mK
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

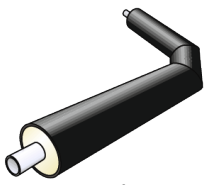
Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length m
25+25x2.3	91	1.34	2x0.32	0.55	590
32+32x2.9	111	1.90	2x0.53	0.60	426
40+40x3.7	126	2.50	2x0.83	1.00	305
50+50x4.6	162	4.00	2x1.30	1.10	149
63+63x5.8	182	5.30	2x2.07	1.20	86
75+75x6.8	202	6.90	2x2.96	1.40	80

PEX03-2 KELIT DUO-PEX pipe insulation series 2

Medium pipe: made of cross-linked polyethylene and a dyed O_2 diffusion layer, SDR 11
Application area: PN12.5 / 20°C - PN6 / 80°C - tmax 95°C
thermal insulation: PUR foam, acc. to EN 253 / EN 15632-2 closed cell, CFC-free, lambda value ≤ 0.0216 W/mK
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length m
25+25x2.3	111	1.60	2x0.32	0.75	429
32+32x2.9	126	2.30	2x0.53	1.20	305
40+40x3.7	142	3.00	2x0.83	1.25	229
50+50x4.6	182	4.70	2x1.30	1.30	86
63+63x5.8	202	6.00	2x2.07	1.40	80

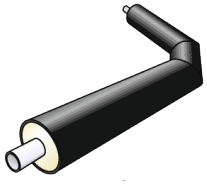
PEX35-1 KELIT PEX pre-insulated elbow 90° insulation series 1



Pre-insulated PEX elbow, similar to PEX00-1, **WITHOUT** medium and jacket pipe connection; the values displayed in parentheses represent the actual, construction-dependent jacket pipe outside diameter!
Reducing sockets (PEX45) must be used for pipe-to-pipe connection, if any!
Leg length: 1500 x 1000mm
Sizes d125 and d140mm upon request!

Dimension dxs	Jacket pipe Da
25x2.3	76
32x2.9	76
40x3.7	91
50x4.6	111
63x5.8	126
75x6.8	142
90x8.2	162
110x10.0	(200) 162

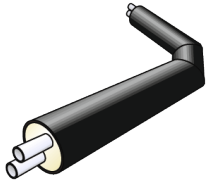
PEX35-2 KELIT PEX pre-insulated elbow 90° insulation series 2



Pre-insulated PEX elbow, similar to PEX00-2, **WITHOUT** medium and jacket pipe connection; the values displayed in parentheses represent the actual, construction-dependent jacket pipe outside diameter!
Reducing sockets (PEX45) must be used for pipe-to-pipe connection, if any!
Leg length: 1500 x 1000mm
Sizes d125 and d140mm upon request!

Dimension dxs	Jacket pipe Da
25x2.3	91
32x2.9	91
40x3.7	111
50x4.6	126
63x5.8	142
75x6.8	162
90x8.2	182

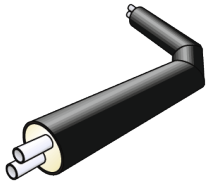
PEX36-1 KELIT DUO-PEX pre-insulated elbow 90° insulation series



Pre-insulated PEX elbows, similar to PEX03-1, **WITHOUT** medium and jacket pipe connection; the values displayed in parentheses represent the actual, construction-dependent jacket pipe outside diameter!
Reducing sockets (PEX45) must be used for pipe-to-pipe connection, if any!
Leg length: 1500 x 1000mm

Dimension dxs	Jacket pipe Da
25+25x2.3	91
32+32x2.9	111
40+40x3.7	126
50+50x4.6	162
63+63x5.8	(200) 182
75+75x6.8	202

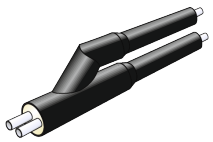
PEX36-2 KELIT DUO-PEX pre-insulated elbow 90° insulation series



Pre-insulated PEX elbows, similar to PEX03-1, **WITHOUT** medium and jacket pipe connection; the values displayed in parentheses represent the actual, construction-dependent jacket pipe outside diameter!
Reducing sockets (PEX45) must be used for pipe-to-pipe connection, if any!
Leg length: 1500 x 1000mm

Dimension dxs	Jacket pipe Da
25+25x2.3	111
32+32x2.9	126
40+40x3.7	142
50+50x4.6	182

PEX75-1 KELIT PEX Y-branch pipe insulation series 1



Pre-insulated adapter or connection from a DUO-PEX pipe to a PEX single pipe **WITHOUT** medium and jacket pipe connection
Construction length: 2000mm
ATTENTION:
THESE ARE NOT EX-STOCK ITEMS!

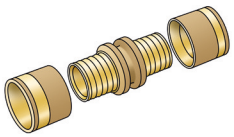
Dimension d	Jacket pipe Da
2x25/25+25	2x76/91
2x32/32+32	2x76/111
2x40/40+40	2x91/126
2x50/50+50	2x111/162
2x63/63+63	2x126/182
2x75/75+75	2x142/225

PEX75-2 KELIT PEX Y-branch pipe insulation series 2

Pre-insulated adapter or connection from a DUO-PEX pipe to a PEX single pipe **WITHOUT** medium and jacket pipe connection
Construction length: 2000mm
ATTENTION:
THESE ARE NOT EX-STOCK ITEMS!

Dimension d	Jacket pipe Da
2x25/25+25	2x91/111
2x32/32+32	2x91/126
2x40/40+40	2x111/142
2x50/50+50	2x126/182
2x63/63+63	2x142/225

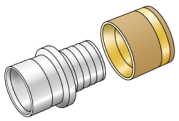
PEX11-SH KELIT PEX press connection



PEX / PEX metal press connection, available in a reduced model upon request!
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d
25/25
32/32
40/40
50/50
63/63
75/75
90/90
110/110
125/125
140/140

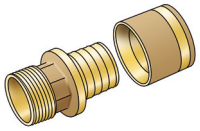
PEX13-SH KELIT PEX press connection with welding end



Steel / PEX press connection adapter with welding end steel ST 37.0
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d
25/DN20
32/DN25
40/DN32
50/DN40
63/DN50
75/DN65
90/DN80
110/DN100
125/DN125
140/DN125

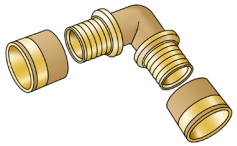
PEX15-SH KELIT PEX press connection with male thread



Steel / PEX press connection adapter with male thread acc. to ÖNORM EN 10226
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d
25/3/4"
32/1"
40/5/4"
50/6/4"
63/2"
75/2 1/2"
90/3"
110/4"
125/5"

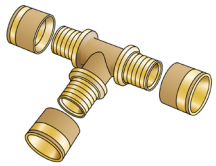
PEX14-SH KELIT PEX press connection elbow 90°



PEX / PEX metal press connection, available in a reduced model upon request!
For connections of PEX00 or PEX03 pipes (SDR 11)
Dimensions d140mm upon request!

Dimension d
25/25
32/32
40/40
50/50
63/63
75/75
90/90
110/110
125/125

PEX19-SH KELIT PEX press connection tee piece



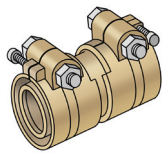
PEX press connection brass tee piece.
For connections of PEX00 or PEX03 pipes (SDR 11)
Dimensions d140mm upon request!

Dimension d
25/25/25
32/25/32
32/32/32
40/25/40
40/32/40
40/40/40
50/25/50
50/32/50
50/40/50
50/50/50
63/25/63
63/32/63
63/40/63
63/50/63
63/63/63
75/25/75

Dimension d
75/32/75
75/40/75
75/50/75
75/63/75
75/75/75
90/25/90
90/32/90
90/40/90
90/50/90
90/63/90
90/75/90
90/90/90
110/25/110
110/32/110
110/40/110

Dimension d
110/50/110
110/63/110
110/75/110
110/90/110
110/110/110
125/25/125
125/32/125
125/40/125
125/50/125
125/63/125
125/75/125
125/90/125
125/110/125
125/125/125

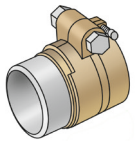
PEX11-K KELIT PEX-PEX clamping connection



PEX / PEX brass clamping connection.
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d	Dimension d
25/25	75/75
32/32	90/90
40/40	110/110
50/50	125/125
63/63	

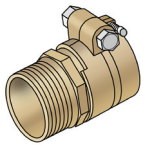
PEX13-K KELIT PEX clamping connection with welding end



Steel / PEX press connection, adapter with welding end steel ST 37.0
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d	Dimension d
25/DN20	75/DN65
32/DN25	90/DN80
40/DN32	110/DN100
50/DN40	125/DN100
63/DN50	140/DN125

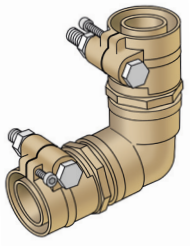
PEX15-K KELIT PEX clamping connection with male thread



Steel / PEX brass clamping connection, adapter with male thread acc. to ÖNORM EN 10226
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d	Dimension d
25/3/4"	75/2/1/2"
32/1"	90/3"
40/5/4"	110/4"
50/6/4"	125/4"
63/2"	

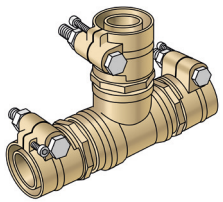
PEX14-K KELIT PEX clamping connection with 90° elbow



PEX / PEX clamping connection 90° brass elbow.
For connections of PEX00 or PEX03 pipes (SDR 11)
Reduced version available upon demand!

Dimension d	Dimension d
25/25	75/75
32/32	90/90
40/40	110/110
50/50	125/125
63/63	

PEX19-K KELIT PEX tee piece clamping connection



PEX tee piece brass clamping connection.
For connections of PEX00 or PEX03 pipes (SDR 11)

Dimension d	Dimension d	Dimension d
25/25/25	75/32/75	110/50/90
32/25/25	75/40/63	110/50/110
32/25/32	75/40/75	110/63/90
32/32/32	75/50/50	110/63/110
40/25/32	75/50/63	110/75/75
40/25/40	75/50/75	110/75/90
40/32/40	75/63/63	110/75/110
40/40/40	75/63/75	110/90/90
50/25/40	75/75/75	110/90/110
50/25/50	90/25/75	110/110/110
50/32/32	90/25/90	125/25/110
50/32/40	90/32/75	125/25/125
50/32/50	90/32/90	125/32/110
50/40/40	90/40/75	125/32/125
50/40/50	90/40/90	125/40/110
50/50/50	90/50/90	125/40/125
63/25/50	90/63/63	125/50/110
63/25/63	90/63/75	125/50/125
63/32/50	90/63/90	125/63/110
63/32/63	90/75/75	125/63/125
63/40/50	90/75/90	125/75/110
63/40/63	90/90/90	125/75/125
63/50/50	110/25/90	125/90/110
63/50/63	110/25/110	125/90/125
63/63/63	110/32/90	125/110/110
75/25/63	110/32/110	125/110/125
75/25/75	110/40/90	125/125/125
75/32/63	110/40/110	

PEX05 KELIT PEX pipe SANITARY

Medium pipe: cross-linked polyethylene, SDR 7.4
Application area: PN16 / 20°C - PN10 / 80°C - tmax 95°C
Thermal insulation: PUR foam acc. to EN15632, flexible, closed cell, CFC-free
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

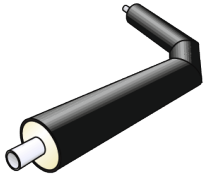
Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length m
20x2.8	76	0.90	0.16	0.45	807
25x3.5	76	1.00	0.25	0.50	807
32x4.4	76	1.39	0.42	0.50	807
40x5.5	91	1.97	0.66	0.55	590
50x6.9	111	2.60	1.03	0.60	429
63x8.7	126	3.39	1.63	1.00	305

PEX06 KELIT DUO-PEX pipe SANITARY

Medium pipe: cross-linked polyethylene, SDR 7.4
Application area: PN16 / 20°C - PN10 / 80°C - tmax 95°C
Thermal insulation: PUR foam acc. to EN 15632, flexible, closed cell, CFC-free
Jacket pipe: corrugated PE-LD pipe, seamlessly extruded, long-term UV radiation-protected

Dimension dxs	Jacket pipe Da	Weight kg/running m	Contents l/m	Bending radius min	Roll length m
25x3.5+20x2.8	91	1.52	0.25 and 0.16	0.55	590
32x4.4+20x2.8	111	1.65	0.42 and 0.16	0.60	429
40x5.5+25x3.5	126	2.90	0.66 and 0.25	1.00	305
50x6.9+32x4.4	142	3.40	1.03 and 0.42	1.00	305

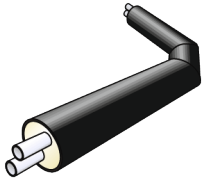
PEX35S KELIT PEX pre-insulated elbow 90° SANITARY



Pre-insulated PEX elbow, analogous to PEX05 **WITHOUT** medium and jacket pipe connection
Leg length: 1500 x 1000mm

Dimension dxs	Jacket pipe Da
20x2.8	76
25x3.5	76
32x4.4	76
40x5.5	91
50x6.9	111
63x8.7	126

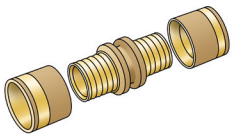
PEX36S KELIT DUO-PEX pre-insulated elbow 90° SANITARY



Pre-insulated DUO-PEX elbow, analogous to PEX06 **WITHOUT** medium and jacket pipe connection. Reducing sockets (PEX45) must be used for pipe-to-pipe connection, if any!
Leg length: 1500 x 1000mm

Dimension dxs	Jacket pipe Da
25x3.5+20x2.8	91
32x4.4+20x2.8	111
40x5.5+25x3.5	126
50x6.9+32x4.4	142

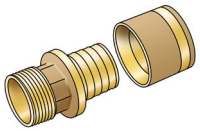
PEX11S-SH KELIT PEX-PEX press connection SANITARY



PEX / PEX brass press connection, reduced
model upon request!
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/20
22/22
25/25
28/28
32/32
40/40
50/50
63/63

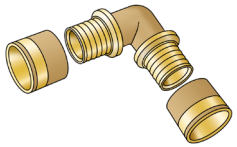
PEX15S-SH KELIT PEX press connection with male thread SANITARY



PEX brass press connection, adapter with male thread acc. to ÖNORM EN 10226
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/1/2"
22/3/4"
25/3/4"
28/3/4"
32/1"
40/5/4"
50/6/4"
63/2"

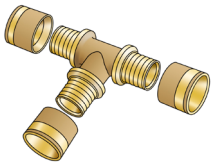
PEX14S-SH KELIT PEX-PEX press connection elbow 90° SANITARY



PEX / PEX brass press connection, reduced model available upon request!
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/20
22/22
25/25
28/28
32/32
40/40
50/50
63/63

PEX19S-SH KELIT PEX press connection tee piece SANITARY



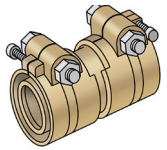
PEX press connection brass tee piece.
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/20/20
25/20/25
25/25/25
32/20/32
32/25/32
32/32/32

Dimension d
40/20/40
40/25/40
40/32/40
40/40/40
50/25/50
50/32/50
50/40/50
50/50/50

Dimension d
63/25/63
63/32/63
63/40/63
63/50/63
63/63/63

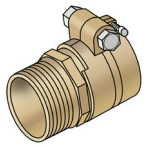
PEX11S-K KELIT PEX-PEX clamping connection SANITARY



PEX / PEX brass clamping connection
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/20
25/25
32/32
40/40
50/50
63/63

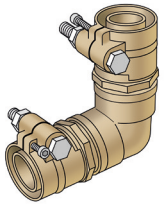
PEX15S-K KELIT PEX clamping connection with male thread SANI-



Steel / PEX brass clamping connection, adapter with male thread acc. to ÖNORM EN 10226
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/3/4"
25/3/4"
32/1"
40/5/4"
50/6/4"
63/2"

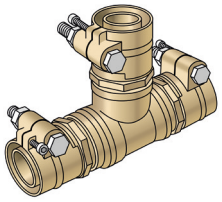
PEX14S-K KELIT PEX clamping connection with 90° elbow SANITARY



PEX / PEX clamping connection 90° brass elbow.
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)
Reduced version available upon demand!

Dimension d
20/20
25/25
32/32
40/40
50/50
63/63

PEX19S-K KELIT PEX tee piece clamping connection SANITARY



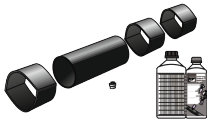
PEX tee piece brass clamping connection.
For connections of PEX05 or PEX06 Sanitary pipes (SDR 7.4)

Dimension d
20/20/20
25/20/20
25/20/25
25/25/25
32/20/20
32/20/32
32/25/25
32/25/32
32/32/32
40/20/32
40/20/40
40/25/32
40/25/40

Dimension d
40/32/32
40/32/40
40/40/40
50/20/40
50/20/50
50/25/40
50/25/50
50/32/32
50/32/40
50/32/50
50/40/40
50/40/50
50/50/50

Dimension d
63/20/50
63/20/63
63/25/50
63/25/63
63/32/50
63/32/63
63/40/50
63/40/63
63/50/50
63/50/63
63/63/63

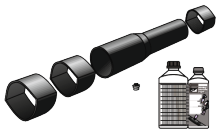
PEX40 KELIT PEX -connecting socket



PE-HD shrink socket acc. to EN 489, double sealing with glue, incl. 3 shrink sleeves PUR foam components, vent plug and PE socket-sealing stopper **WITHOUT** medium pipe connection

Dimension Da
76
91
111
126
142
162
182
202

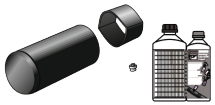
PEX45 KELIT PEX reducing connecting socket



PE-HD shrink socket acc. to EN 489, reduced, double sealing with glue, incl. 3 shrink sleeves, PUR foam components, vent plug and PE socket-sealing stopper for the connection of different jacket pipe diameters **WITHOUT** medium pipe connection

Dimension Da	Dimension Da
91/76	142/126
111/76	162/111
111/91	162/126
126/76	162/142
126/91	182/142
126/111	182/162
142/91	202/182
142/111	

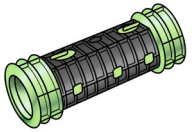
P6800 KELIT end sleeve



PE-HD end sleeve, with glue, incl. shrink-on collar and PUR foam components, to insulate KVM ends underground
Length: 700mm

Dimension Da
76
90-91
110-111
125-126
140-142
160-162
180-182
200-202

PEX48I-E KELIT PEX I-sleeve set - E



Sleeve set for the subsequent insulation of connection points with straight connectors, incl. PUR foam components **WITHOUT** medium pipe connection, **WITHOUT** PEX48D-E coupling sleeve sealing rings!

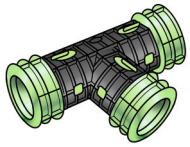
Type	Dimension Da
Small	76-142
Large	76-202

PEX48L-E KELIT PEX L-sleeve set- E

Sleeve set for the subsequent insulation of connection points with w90° connectors, incl. PUR foam components **WITHOUT** medium pipe connection, **WITHOUT** PEX48D-E coupling sleeve sealing rings!

Type	Dimension Da
Small	76-142
Large	76-202

PEX48T-E KELIT PEX T-sleeve set- E



Sleeve set for the subsequent insulation of connection points with tee pieces, incl. PUR foam components **WITHOUT** medium pipe connection, **WITHOUT** PEX48D-E coupling sleeve sealing rings!

Type	Dimension Da
Small	76-142
Large	76-202

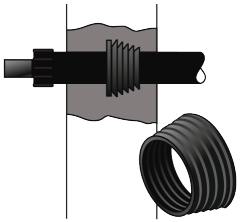
PEX48D-E KELIT PEX coupling sleeve sealing ring - E

EPDM coupling sleeve sealing ring for the sealing of the PEX48T-E, PEX48I-E and PEX48L-E sleeve sets

Type	Dimension Da
Small	76
Small	91
Small	111
Small	126
Small	142

Type	Dimension Da
Large	76
Large	91
Large	111
Large	126
Large	142
Large	162
Large	182
Large	202

P7100 KELIT house lead-in



House lead-in or wall ducts (sealing ring) made of neoprene, for watertight pipe ducts with normal soil water. In the event of increased (pressing) ground water, we recommend using PEX77 annular seals

Dimension Da
76
90-91
110-111
125-126
140-142
160-162
180-182
200-202

PEX77 KELIT annular seal

Annular seals for core holes or wall sleeves in the masonry, standard model with stainless steel screws against pressing water
Rubber width: 2x40mm
Core hole diameter or inside diameter (DA) of the wall sleeve

Core hole	Dimension Da
150	76
150	91
200	111
200	126
200	142
250	162
250	182
250	202

PEX78 KELIT wall sleeve

PVC wall sleeve, adjusted to fit KELIT annular seals and KELIT link chains, suitable for being embedded in masonry and concrete
The delivery contains the standard length of 400mm
Adjustment to masonry wall thickness possible by cutting to size with a saw

Dimension
100
125
150
200
250

P7200 KELIT insulating seal

PE-HD heat shrinking end cap, for watertight insulating seals in ducts or buildings

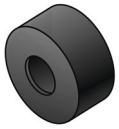
Dimension d	Jacket pipe Da
20-25	76-91
25-50	76-126
60-76	125-142
60-90	160-182
89-114	160-225
75-140	160-250

PEX61 KELIT DUO-PEX insulating seal

PE-HD heat shrinking end cap, for watertight insulating seals in ducts or buildings

Dimension d	Jacket pipe Da
25+25/25+20	91
25+25/32+20/32+32 40+40/40+25/50+32	111-142
50+50	162-182
63+63	182-200
75+75	202

PEX65 KELIT PEX protective cap

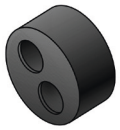


Protective cap for pre-insulated PEX pipes, can be slipped on
NOT watertight

Dimension d	Jacket pipe Da
20	76
25	76
25	91
32	76
32	91
40	91
40	111
50	111
50	126
63	126

Dimension d	Jacket pipe Da
63	142
75	142
75	162
90	162
90	182
110	162
110	182
125	182
125	202
140	202

PEX66 KELIT DUO-PEX protective cap



Protective cap for pre-insulated DUO PEX pipes, can be slipped on
NOT watertight

Dimension d	Jacket pipe Da
25+20	91
25+25	91
25+25	111
32+20	111
32+32	111
32+32	126
40+25	126
40+40	126
40+40	142

Dimension d	Jacket pipe Da
50+32	142
50+50	162
50+50	182
63+63	182
63+63	202
75+75	202

P7800 KELIT trench warning tape

Inscription: "ATTENTION! KELIT district heating line"
Sold only in complete rolls!
Color: yellow
Length: 250 running m

Installation tools

WZ392 PEX sliding sleeves - pressing tools

Pressing tool SET 1

For the manual expansion and pressing of PEX press medium pipe connections d20–40mm, packed in one case

SET 1	d20–40
SET 2	d50–110
SET 3	d125 and 160
SET 4	d140

Case 1.1 comprising:

1 unit expanding tool
1 unit expanding mandrel for pipes SDR 11 d20–40mm, resp.
1 unit expanding mandrel for pipes SDR 7.4 d20–40mm, resp.
1 unit pressing tool
1 unit pressing jaws for pipes SDR 11 d20–40mm, resp.
1 unit pressing jaws for pipes SDR 7.4 d20–40mm, resp.
1 unit pipe scissors up to 40mm

Pressing tool SET 2

For the hydraulic expansion and pressing of PEX press medium pipe connections d50–110mm, packed in 2 cases

Case 2.1 comprising:

1 unit hydraulic foot pump
1 unit expanding tool
1 unit pressing tool
1 unit pressing jaws for pipes SDR 7.4 and SDR 11 d50-63mm, resp.
1 unit pipe scissors up to 50mm

Case 2.2 comprising:

1 unit expanding mandrel for pipes SDR 11 d50-110mm, resp.
1 unit expanding mandrel for pipes SDR 7.4 d50-63mm, resp.
1 unit pressing jaws for pipes SDR 11 d75-110mm, resp.
1 unit pipe scissors up to 125mm

Pressing tool SET 3

For the hydraulic expansion and pressing of PEX press medium pipe connections d125mm and d160mm, packed in 2 cases

Case 3.1 comprising:

1 unit electro-hydraulic pump
2 units pressing tools
1 unit hydraulic manifold
1 unit expanding tool
1 unit pipe scissors up to 170mm

Case 3.2 comprising:

1 unit expanding mandrel for pipes SDR 11 d160mm
1 unit expanding mandrel for pipes SDR 11 d125mm
1 unit press yoke set d160mm
1 unit press yoke insert for pipes SDR 11 d125mm

Pressing tool SET 4

For the hydraulic expansion and pressing of PEX press medium pipe connections d140mm, packed in 2 cases

Case 3.1 comprising:

1 unit electro-hydraulic pump
2 units pressing tools
1 unit hydraulic manifold
1 unit expanding tool
1 unit pipe scissors up to 170mm

Case 4.2 comprising:

1 unit expanding mandrel for pipes SDR 11 d140mm
1 unit press yoke set d140mm

Attention: Case 3.1 is identical for pressing tool sets 3 and 4!

Representative offices, production and headquarters

Full technical back-up and support for the KELIT PEX pipe system is provided by KE KELIT-Austria/Europe.

The network of sales partners, subsidiaries and agents is constantly being expanded. Please ask at the Austrian headquarters for the current status.

Production and central warehouse

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