

# CALPEX®

The simple solution for district and local heating networks  
and efficient transport of fluids



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# Utilise your advantages



## **Specially developed for low-temperature applications**

Heating supplies, drinking water transport systems, waste water systems, refrigerating units, swimming pool technology and agricultural applications are some of the many examples from our comprehensive list of references.

## **CALPEX® versus plastic casing pipes**

As compared with conventional metal pipe systems, CALPEX® offers higher resistance to chemicals; it is corrosionfree and tested for compatibility with foods. CALPEX® has a PEXa medium pipe which is ten times less rough than steel, resulting in lower pressure losses. This means that you can select smaller dimensions for higher flow speeds, so expenditure on materials and trench costs are reduced.

## **No underground connections**

CALPEX® district heating pipes can be supplied in rings of up to 807 m in one piece, largely eliminating the need for underground connection points.

## **Narrow pipe trenches**

As compared with plastic casing pipes, CALPEX® district heating pipes only require 60% of the previous line width.

## **Narrow bending radius**

CALPEX® district heating pipe is flexible, so it can easily be adapted to virtually all line conditions. CALPEX® can cross over or under existing supply pipes.

## **Simple to lay**

CALPEX® can be laid and installed in a very short time by two fitters, without special tools.

## **Normal commercial connectors/compatibility**

Our range of accessories offers a huge selection, with guaranteed solutions for every situation. CALPEX® district heating pipes can easily be connected to existing district heating networks.

## **Composite system**

CALPEX® pipes are produced in a continuous length. The PUR foam and the PEX pipes form a composite which prevents any water from spreading along the medium pipe.

## **Statics for civil engineering**

When laying the pipes in the earth the resulting minor expansion and forces can be neglected because the composite system of CALPEX® reduces the thermal expansion to a great extent.

## **Customised pipe lengths**

We can supply the lengths you need accurate to the metre. As a result, you optimise your requirement and have no off-cuts to dispose of.



# System description



## CALPEX®-UNO

Heating max. 95 °C (fluctuating) PN 6  
Sanitary max. 95 °C (fluctuating) PN 10



## CALPEX®-UNO-HCC

Sanitary max. 95 °C (fluctuating) PN 10  
with heating cable channel



## CALPEX®-DUO

Heating max. 95 °C (fluctuating) PN 6  
Sanitary max. 95 °C (fluctuating) PN 10



## CALPEX®-QUADRIGA

Heating max. 95 °C (fluctuating) PN 6  
Sanitary max. 95 °C (fluctuating) PN 10



PE-Xa medium pipe  
with EVOH-barrier (heating)



CFC-free polyurethane foam

Corrugated polyethylene protective sheath

# System description

## Carrier pipe

Material:	cross-linked polyethylene PE-Xa, basic material PE-HD, according to DIN 16892/16893
Linking method:	peroxide (procedure "Engel"), term: PE-Xa
Life expectancy:	50 years at 80 °C permanent temperature and permanent pressure of 7.0 bar
Oxygen diffusion barrier:	organic (EVOH), < 0.10 g/m <sup>3</sup> d according to DIN 4726
Characteristics:	insensitive to aggressive water, low pressure loss, very good resistance to chemicals
Pipe series acc. DIN 16893:	series 1 (SDR 11): PN 12.5 (at 20 °C) for heating series 2 (SDR 7.4): PN 20 (at 20 °C) for sanitary

	Temp. °C	Value	Exam. norm
Density	-	938–940 kg/m <sup>3</sup>	DIN 53479
Thermal conductivity	-	0.38 W/mK	DIN 52612
Tensile strength	20	26–30 N/mm <sup>2</sup>	DIN 53455
Tensile strength	80	18–20 N/mm <sup>2</sup>	DIN 53455
Modulus of elasticity	20	600–900 N/mm <sup>2</sup>	DIN 53457
Modulus of elasticity	80	300–400 N/mm <sup>2</sup>	DIN 53457
Linear coefficient of exp.	20	1.4 · 10 <sup>-4</sup> 1/K	-
Linear coefficient of exp.	100	2.0 · 10 <sup>-4</sup> 1/K	-
Crystallite melting range	-	130–136 °C	-
Chemical resistance	20/40/60	Better than PE-HD	DIN 8075 B.1

## Insulation

CALPEX®-Heating:	CFC-free, cyclopentane-blown polyurethane foam (PUR), with $\lambda$ -value $\leq 0.0237$ W/mK
CALPEX®-Sanitary:	CFC-free, 100% CO <sub>2</sub> -blown polyurethane foam (PUR), with $\lambda$ -value $\leq 0.032$ W/mK

	Temp. °C	CALPEX®-Heating	CALPEX®-Sanitary	Exam. norm
Density	-	> 60 kg/m <sup>3</sup>	> 60 kg/m <sup>3</sup>	DIN 53420
Thermal conductivity	50	$\leq 0.0237$ W/mK	$\leq 0.032$ W/mK	DIN 52612
Closed cellular structure	-	$\geq 90\%$	$\geq 90\%$	-
Water absorption after 24 hrs.	-	$\leq 10\%$	$\leq 10\%$	EN 253

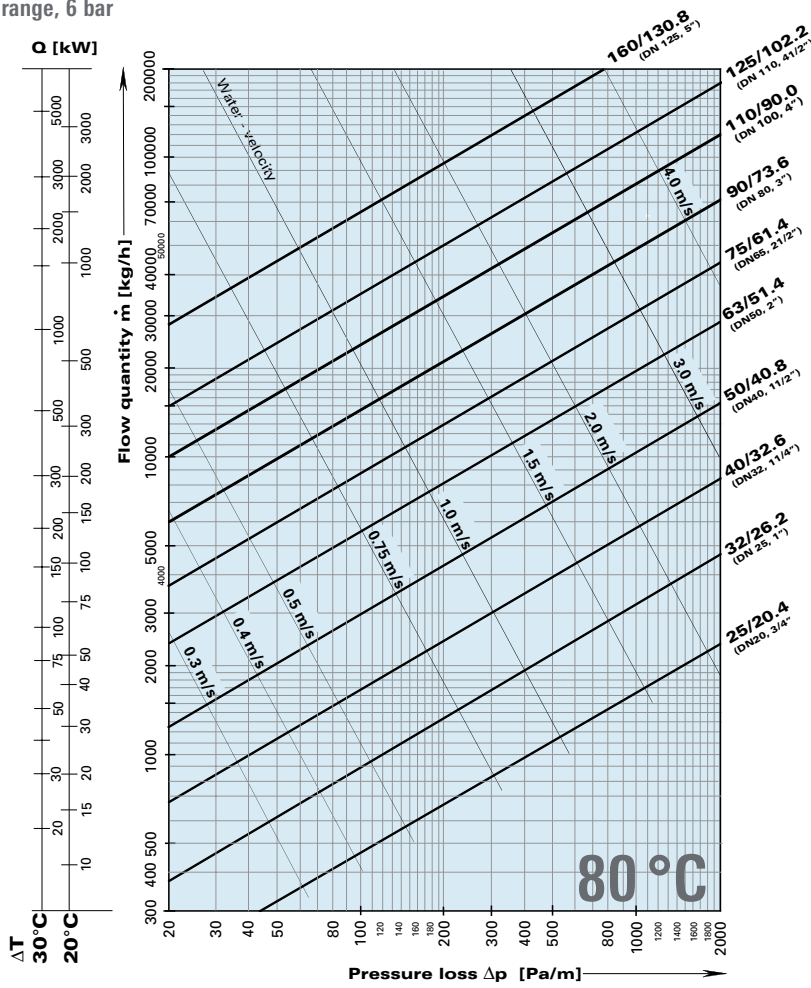
## Casing

Material:	low density polyethylene, LLD-PE seamless extruded
Task:	protection against mechanical influence and moisture

	Value	Exam. norm
Density	918–922 kg/m <sup>3</sup>	ISO 1183
Thermal conductivity	0.33 W/mK	DIN 52612
Crystallite melting range	122 °C	ISO 11357-3

# Pressure loss

Heating range, 6 bar



1 mmWS = 9.81 Pa

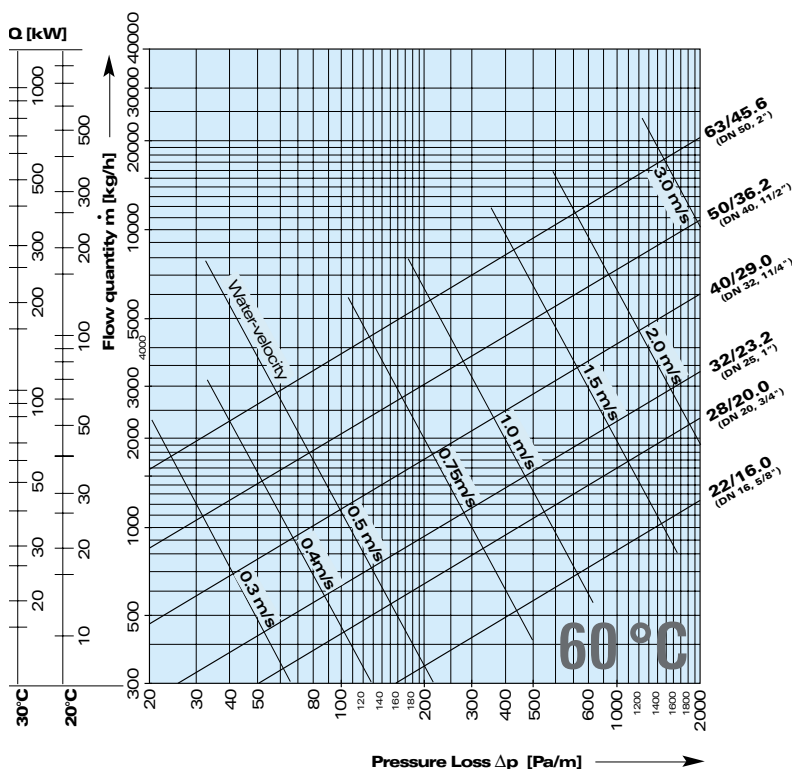
$$\dot{m} \approx \frac{Q \cdot 860}{\Delta T}$$

$\dot{m}$  = Flow rate in kg/h

Q = Power requirement in kW

$\Delta T$  = Temp. difference, forward and return flow in K

Sanitary range, 10 bar



1 mmWS = 9.81 Pa

$$\dot{m} \approx \frac{Q \cdot 860}{\Delta T}$$

$\dot{m}$  = Flow rate in kg/h

Q = Power requirement in kW

$\Delta T$  = Temp. difference, forward and return flow in K

# Heating range

## CALPEX®-Heating

Operat. temp.:	max. 95 °C (fluctuating)
Operat. pressure:	6 bar
Carrier pipe:	cross-linked polyethylene PE-Xa with oxygen diffusion barrier (EVOH)
Insulation:	CFC-free, pentane-blown flexible polyurethane hard foam
Protective sheath:	sinusoidal corrugated, seamless extruded polyethylene (PE-LD)

## Single-line pipe CPX-UNO

Dimensions mm	Carrier pipe mm	Nom. diameter DN	Bending r. m	Coil length*				Weight kg/m	Art.-No.	
				J	M	HCL	HCS			
25/ 76	25 x 2.3	20	¾	0.7	520	807	620	360	0.90	23900
32/ 76	32 x 2.9	25	1	0.7	520	807	620	360	1.00	23901
40/ 91	40 x 3.7	32	1¼	0.8	377	590	360	250	1.39	23903
50/111	50 x 4.6	40	1½	0.9	271	429	250	150	1.97	23905
63/126	63 x 5.8	50	2	1.0	192	305	210	130	2.60	23906
75/142	75 x 6.8	65	2½	1.1	143	229	145	80	3.39	23907
90/162	90 x 8.2	80	3	1.2	92	149	88	35	4.56	23908
110/162	110 x 10.0	100	4	1.2	92	149	88	35	5.10	23909
110/182	110 x 10.0	100	4	1.4	52	86	40	-	5.68	23910
125/182	125 x 11.4	125	5	1.4	52	86	40	-	6.37	23911
160/250	160 x 14.6	150	6	-	12 (bars)				11.31	23912

Supply as section length, as coils and on drums possible



## Twin-line pipe CPX-DUO

Dimensions mm	Carrier pipe mm	Nom. diameter DN	Bending r. m	Coil length*				Weight kg/m	Art.-No.	
				J	M	HCL	HCS			
25 + 25/ 91	2 x 25 x 2.3	20 + 20	2 x ¾	0.8	377	590	360	250	1.34	23913
32 + 32/111	2 x 32 x 2.9	25 + 25	2 x 1	0.9	271	429	250	150	1.87	23914
40 + 40/126	2 x 40 x 3.7	32 + 32	2 x 1¼	1.0	192	305	210	13	2.48	23915
50 + 50/162	2 x 50 x 4.6	40 + 40	2 x 1½	1.2	92	149	88	35	3.96	23916
63 + 63/182	2 x 63 x 5.8	50 + 50	2 x 2	1.4	52	86	40	-	5.28	23917

Supply as section length, as coils and on drums possible



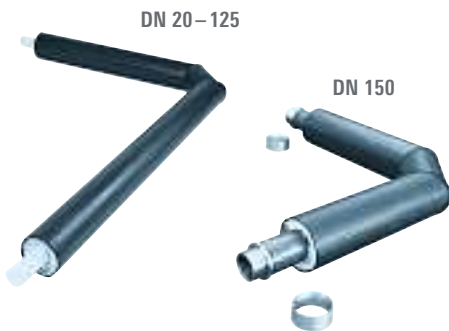
### \* Coil types, dimensions and freight:

<b>Jumbo:</b>	2800 x 800 mm	Delivery by truck
<b>Maxi:</b>	2800 x 1200 mm	Delivery by truck
<b>High Cube – Large:</b>	2500 x 1150 mm	Sea freight (6 pcs. <b>HCL</b> and 2 pcs. <b>HCS</b> fit into one 40' high cube container)
<b>High Cube – Small:</b>	2300 x 1000 mm	Sea freight (6 pcs. <b>HCL</b> and 2 pcs. <b>HCS</b> fit into one 40' high cube container)

# House entry bend

## CALPEX®-House entry bend 90°

Specification UNO:	DN 20 – 125: leg length 1.1 x 1.6 m, medium pipe PE-Xa
	DN 150: leg length 1.0 x 1.0 m, medium pipe St 37.0 including press fitting and sleeves
Specification DUO:	DN 20 – 50: leg length 1.1 x 1.6 m, medium pipe PEXa
Insulation:	100% CFC-free, polyurethane hard foam
Protective sheath:	polyethylene (PE-HD)



### Bend CPX-UNO

Dimensions in mm	DN	inches		Art.-No.
25/ 76	20	¾	CALPEX®-Bend 90° Heating UNO	18623
32/ 76	25	1	CALPEX®-Bend 90° Heating UNO	63106
40/ 91	32	1 ¼	CALPEX®-Bend 90° Heating UNO	63108
50/111	40	1 ½	CALPEX®-Bend 90° Heating UNO	63110
63/126	50	2	CALPEX®-Bend 90° Heating UNO	63112
75/142	65	2 ½	CALPEX®-Bend 90° Heating UNO	63114
90/162	80	3	CALPEX®-Bend 90° Heating UNO	63116
110/162	100	4	CALPEX®-Bend 90° Heating UNO	63466
110/182	100	4	CALPEX®-Bend 90° Heating UNO	17991
125/182	125	5	CALPEX®-Bend 90° Heating UNO	63192
160/250	150	6	CALPEX®-Bend 90° Heating UNO	22063197

### Bend CPX-DUO



Dimensions in mm	DN	inches		Art.-No.
25 + 25/ 91	20 + 20	2 x ¾	CALPEX®-Bend 90° Heating DUO	24881
32 + 32/111	25 + 25	2 x 1	CALPEX®-Bend 90° Heating DUO	63124
40 + 40/126	32 + 32	2 x 1 ¼	CALPEX®-Bend 90° Heating DUO	63127
50 + 50/162	40 + 40	2 x 1 ½	CALPEX®-Bend 90° Heating DUO	63130
63 + 63/182	50 + 50	2 x 2	CALPEX®-Bend 90° Heating DUO	17992



# Forked pipe

## Forked pipe CALPEX®

Specification:	preinsulated connecting element, length 2240 mm
Function:	connecting between two UNO pipes (Fwd/Return) with a CPX-DUO pipe
Insulation:	CFC-free polyurethane hard foam
Protective sheath:	polyethylene (PE-HD)

## Forked pipe CPX-CPX

CALPEX®-UNO to CALPEX®-DUO, suitable for

UNO-Pipe	DUO-Pipe	DN	inches		Art.-No.
2x 25/ 76	25 + 25/ 91	20	¾	PEX medium pipe	10941
2x 32/ 76	32 + 32/111	25	1	PEX medium pipe	63135
2x 40/ 91	40 + 40/126	32	1 ¼	PEX medium pipe	63137
2x 50/111	50 + 50/162	40	1 ½	PEX medium pipe	63139
2x 63/126	63 + 63/182	50	2	PEX medium pipe	17993



## Forked pipe KMR-CPX

Plastic sheath pipe (2x St 37.0) to CALPEX®-DUO, suitable for

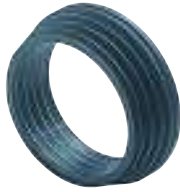
UNO-Pipe	DUO-Pipe	DN	inches		Art.-No.
2x 26.9/110	26.9 + 26.9/110	20	¾	Steel medium pipe	22063141
2x 33.7/110	33.7 + 33.7/110	25	1	Steel medium pipe	22063142
2x 42.4/125	42.4 + 42.4/125	32	1 ¼	Steel medium pipe	22063144
2x 48.3/125	48.3 + 48.3/160	40	1 ½	Steel medium pipe	22063146
2x 60.3/140	60.3 + 60.3/180	50	2	Steel medium pipe	22017995



# Sealing ring

## Wall sealing ring

comprising a special section neoprene ring, suitable for



Dimensions in mm	Art.-No.
Outer diameter CALPEX® 76	68765
Outer diameter CALPEX® 91	68766
Outer diameter CALPEX® 111	68767
Outer diameter CALPEX® 126	68768

Dimensions in mm	Art.-No.
Outer diameter CALPEX® 142	68769
Outer diameter CALPEX® 162	68770
Outer diameter CALPEX® 182	18075
Outer diameter CALPEX® 250	68647

## Wall sealing ring

for carottage and pipe liner (water pressure tight up to < 0.5 bar)



Dimensions in mm	Art.-No.
Outer diameter CALPEX® 76	67127
Outer diameter CALPEX® 91	67129
Outer diameter CALPEX® 111	67130
Outer diameter CALPEX® 126	67131

Dimensions in mm	Art.-No.
Outer diameter CALPEX® 142	50615
Outer diameter CALPEX® 162	67133
Outer diameter CALPEX® 182	50616
Outer diameter CALPEX® 250	67135
Aquagard-Set (Primer)	59627

For centering we recommend a supplementary sealing ring

Diameter of core holes and pipe liners on page 47

# End cap

## End cap CPX for dry areas

as termination for house connections, comprising PE-LD

End cap for CALPEX®-UNO, suitable for



Dimensions in mm	DN	inches	Art.-No.
25/ 76	20	¾	69617
32/ 76	25	1	69624
40/ 91	32	1 ¼	69625
50/111	40	1 ½	69626
63/126	50	2	69627
75/142	65	2 ½	69628
90/162	80	3	69629
110/162	100	4	69630
110/182	100	4	18078
125/182	125	5	69615
160/250	150	6	not available

End cap for CALPEX®-DUO, suitable for

Dimensions in mm	DN	inches	Art.-No.
25 + 25/ 91	20 + 20	2 x ¾	69637
32 + 32/111	25 + 25	2 x 1	69634
40 + 40/126	32 + 32	2 x 1 ¼	69635
50 + 50/162	40 + 40	2 x 1 ½	69636
63 + 63/182	50 + 50	2 x 2	18079

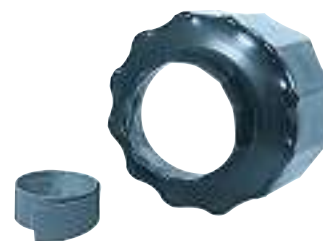


### Shrinking end cap CPX for humid areas

Heat shrinking, as termination for house connections, comprising polymerised and modified polyolefin, coated with sealing adhesive resistant to temperatures up to 125 °C. Including temperature measuring tapes and grinding belt.

Shrinking end cap for CALPEX®-UNO, suitable for

Dimensions in mm	DN	inches	Art.-No.
25/ 76	20	¾	63023
32/ 76	25	1	61031
40/ 91	32	1 ¼	86300
50/111	40	1 ½	86326
63/126	50	2	86326
75/142	65	2 ½	86326
90/162	80	3	60999
110/162	100	4	63340
110/182	100	4	63340
125/182	125	5	63340
160/250	150	6	63349



Shrinking end cap for CALPEX®-DUO, suitable for

Dimensions in mm	DN	inches	Art.-No.
25 + 25/ 91	20 + 20	2 x ¾	63025
32 + 32/111	25 + 25	2 x 1	59450
40 + 40/126	32 + 32	2 x 1 ¼	59450
50 + 50/162	40 + 40	2 x 1 ½	63424
63 + 63/182	50 + 50	2 x 2	14522



# Screw connection, heating range

## Connection piece CPX with external thread

screw connection made of brass, suitable for



PEX-Pipe in mm	External thread in inches	Art.-No.
25 x 2.3	3/4	55281
32 x 2.9	1	55283
40 x 3.7	1 1/4	55284
50 x 4.6	1 1/2	55285
63 x 5.7	2	55286
75 x 6.8	2 1/2	55287
90 x 8.2	3	55288
110 x 10.0	4	63320

## Connection piece CPX with weld-on end

screw connection made of St 37.0, suitable for



PEX-Pipe in mm	Weld-on end in mm	Art.-No.
25 x 2.3	26.9 x 2.65	55294
32 x 2.9	33.7 x 2.3	55296
40 x 3.7	42.4 x 2.6	55297
50 x 4.6	48.3 x 2.6	55298
63 x 5.7	60.3 x 2.9	55299
75 x 6.8	76.1 x 3.2	55300
90 x 8.2	88.9 x 3.2	55301
110 x 10.0	114.3 x 3.6	63321

## Coupling piece CPX, equal

screw connection made of brass, suitable for



PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
25 x 2.3	25 x 2.3	55310
32 x 2.9	32 x 2.9	55313
40 x 3.7	40 x 3.7	55316
50 x 4.6	50 x 4.6	55318
63 x 5.7	63 x 5.7	55320
75 x 6.8	75 x 6.8	55322
90 x 8.2	90 x 8.2	55324
110 x 10.0	110 x 10.0	63323

For sockets in the earth we recommend press connections



### Coupling piece CPX, reduced

screw connection made of brass, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
32 x 2.9	25 x 2.3	55315
40 x 3.7	32 x 2.9	55317
50 x 4.6	40 x 3.7	55319
63 x 5.7	50 x 4.6	55321
75 x 6.8	63 x 5.7	55323
90 x 8.2	75 x 6.8	55325
110 x 10.0	90 x 8.2	63322



### T-Piece CPX with up to multi-stage reductions

screw connection made of brass, suitable for

Dimensions d1-d2-d3	Art.-No.
25-25-25	55362
32-32-32	55363
32-25-32	55365
32-25-25	55368
40-40-40	55369
40-32-40	55370
40-25-40	55372
40-32-32	55374
40-25-32	55376
50-50-50	55380
50-40-50	55381
50-32-50	55382
50-25-50	55384
50-40-40	55386
50-32-40	55387
50-25-40	55389
63-63-63	55393
63-50-63	55394
63-40-63	55395
63-32-63	55396
63-25-63	55398
63-50-50	55400
63-40-50	55401
63-32-50	55402
63-25-50	55404



For sockets in the earth we recommend press connections



Dimensions	
d1-d2-d3	Art.-No.
75-75-75	55411
75-63-75	55412
75-50-75	55413
75-40-75	55414
75-32-75	55415
75-25-75	55417
75-63-63	55419
75-50-63	55420
75-40-63	55421
75-32-63	55422
75-25-63	55424
90-90-90	55426
90-75-90	55427
90-63-90	55428
90-50-90	55429
90-40-90	55430
90-32-90	55431
90-25-90	55433
90-75-75	55435
90-63-75	55436
90-50-75	55437
90-40-75	55438
90-32-75	55439
90-25-75	55441
110-110-110	63542
110-90-110	63543
110-75-110	63544
110-63-110	63545
110-50-110	63546
110-40-110	63547
110-32-110	63548
110-25-110	63550
110-90-90	63552
110-75-90	63553
110-63-90	63554
110-50-90	63555
110-40-90	63556
110-32-90	63557
110-25-90	63559

For sockets in the earth we recommend press connections

# Press connection, heating range

## Connection piece CPX with external thread

press connection made of brass, suitable for

PEX-Pipe in mm	Male thread in inches	Art.-No.
25 x 2.3	3/4	68671
32 x 2.9	1	68672
40 x 3.7	1 1/4	68673
50 x 4.6	1 1/2	68674
63 x 5.7	2	68675
75 x 6.8	2 1/2	68676
90 x 8.2	3	68677
110 x 10.0	4	68678
125 x 11.4	5	68655
160 x 14.6	6	68666



## Connection piece CPX with weld-on end

press connection made of St 37.0, suitable for

PEX-Pipe in mm	Weld-on end in mm	Art.-No.
25 x 2.3	26.9 x 2.65	68688
32 x 2.9	33.7 x 2.3	68690
40 x 3.7	42.4 x 2.6	68692
50 x 4.6	48.3 x 2.6	68694
63 x 5.7	60.3 x 2.9	68696
75 x 6.8	76.1 x 3.2	68698
90 x 8.2	88.9 x 3.2	68700
110 x 10.0	114.3 x 3.6	68702
125 x 11.4	139.7 x 3.6	68667
160 x 14.6	168.3 x 4.1	68669



## Coupling piece CPX, equal

press connection made of brass, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
25 x 2.3	25 x 2.3	68703
32 x 2.9	32 x 2.9	68704
40 x 3.7	40 x 3.7	68706
50 x 4.6	50 x 4.6	68708
63 x 5.7	63 x 5.7	68710
75 x 6.8	75 x 6.8	68712
90 x 8.2	90 x 8.2	68714
110 x 10.0	110 x 10.0	68716
125 x 11.4	125 x 11.4	68656
160 x 14.6	160 x 14.6	68658



Required press tool kit on page 41

T-Shell, I-Shell and L-Shell for preinsulating on page 32

### Coupling piece CPX, reduced

press connection made of brass, suitable for



PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
32 x 2.9	25 x 2.3	68660
40 x 3.7	32 x 2.9	68661
50 x 4.6	40 x 3.7	68662
63 x 5.7	50 x 4.6	11951
75 x 6.8	63 x 5.7	68663
90 x 8.2	75 x 6.8	68664
110 x 10.0	90 x 8.2	68665
125 x 11.4	110 x 10.0	68657***
160 x 14.6	125 x 11.4	68659***

\*\*\* steel

### T-Piece CPX with up to multi-stage reductions

press connection made of different materials, suitable for



Brass

Dimensions d1-d2-d3	Brass Art.-No.	Steel (St 37.0) Art.-No.	High-grade steel (CrNi)** Art.-No.
25-25-25	68370	68051	-
32-32-32	19453	68053	-
32-25-32	68372	68055	-
32-25-25	68371	68058	-
40-40-40	68378	68059	-
40-32-40	68377	68060	-
40-25-40	68375	68062	-
40-32-32	18872*	68064	-
40-25-32	68374*	68066	-
50-50-50	23002	68068	-
50-40-50	10732	68069	-
50-32-50	18870	68070	-
50-25-50	68380	68072	-
50-40-40	68381*	68074	-
50-32-40	18871	68075	-
50-25-40	68379	68077	-
63-63-63	23021	68079	-
63-50-63	68385	68080	-
63-40-63	23022	68081	-
63-32-63	12468	68082	-
63-25-63	68383	68084	-
63-50-50	12467	68086	-
63-40-50	68384	68087	-
63-32-50	10323	68088	-
63-25-50	-	68090	68382
75-75-75	68395	68092	-
75-63-75	68394	68093	-
75-50-75	68392	68094	-
75-40-75	68391	68095	-
75-32-75	68389	68096	-
75-25-75	68387	68098	-
75-63-63	68393	68100	-
75-50-63	11976	68101	-

\* soldered

\*\* high-grade steel on request

Required press tool kit on page 41



Dimensions d1-d2-d3	Brass Art.-No.	Steel (St 37.0) Art.-No.	High-grade steel (CrNi)** Art.-No.
75-40-63	-	68102	68390
75-32-63	68388	68103	-
75-25-63	-	68105	68386
90-90-90	68408	68107	-
90-75-90	-	68108	68407
90-63-90	68405	68109	-
90-50-90	-	68110	68403
90-40-90	68401	68111	-
90-32-90	68399	68112	-
90-25-90	-	68114	68397
90-75-75	-	68116	68406
90-63-75	-	68117	68404
90-50-75	-	68118	68402
90-40-75	-	68119	68400
90-32-75	-	68120	68398
90-25-75	-	68122	68396
110-110-110	68422	68124	-
110-90-110	-	68125	68421
110-75-110	-	68126	68419
110-63-110	68417	68127	-
110-50-110	10733	68128	-
110-40-110	-	68129	68414
110-32-110	68412	68130	-
110-25-110	-	68132	68410
110-90-90	-	68134	68420
110-75-90	-	68135	68418
110-63-90	-	68136	68416
110-50-90	-	68137	68415
110-40-90	-	68138	68413
110-32-90	-	68139	68411
110-25-90	-	68141	68409
125-125-125	-	68446	-
125-110-125	-	68444	-
125-90-125	-	68442	-
125-75-125	-	68440	-
125-63-125	-	68438	-
125-50-125	-	68436	-
125-40-125	-	68434	-
125-32-125	-	68432	-
125-25-125	-	68430	-
125-125-110	-	68445	-
125-110-110	-	68443	-
125-90-110	-	68441	-
125-75-110	-	68439	-
125-63-110	-	68437	-
125-50-110	-	68435	-
125-40-110	-	68433	-
125-32-110	-	68431	-
125-25-110	-	68429	-

\*\* high-grade steel on request  
other T-pieces on request



Steel



High-grade steel

Required press tool kit on page 41

T-Shell, I-Shell and L-Shell for preinsulating on page 32

### Elbow 90° CPX, equal

of brass for connecting two CALPEX®-district heating pipes, suitable for



PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
25 x 2,3	25 x 2,3	17417
32 x 2,9	32 x 2,9	17418
40 x 3,7	40 x 3,7	20132
50 x 4,6	50 x 4,6	20131
63 x 5,8	63 x 5,8	27470
75 x 6,8	75 x 6,8	27471
90 x 8,2	90 x 8,2	17419
110 x 10,0	110 x 10,0	22192
125 x 11,4	125 x 11,4	31263*

\* steel

Required press tool kit on page 41

## Electrofusion fitting



### Coupling piece CPX, equal

electrofusion fitting, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
75 x 6.8	75 x 6.8	50540
90 x 8.2	90 x 8.2	50541
110 x 10.0	110 x 10.0	50542
125 x 11.4	125 x 11.4	50543
160 x 14.6	160 x 14.6	50544



### Elbow 90° CPX, equal

electrofusion fitting, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
75 x 6.8	75 x 6.8	50946
90 x 8.2	90 x 8.2	50947
110 x 10.0	110 x 10.0	50948

Other electrofusion fittings on request

T-Shell, I-Shell and L-Shell for preinsulating on page 32

The electrofusion fittings are installed exclusively by certified fitters and special welding tools



# Sanitary range

## CALPEX®-Sanitary

Operat. temp.:	max. 95 °C (fluctuating)
Operat. pressure:	10 bar
Carrier pipe:	cross-linked polyethylene PE-Xa without oxygen diffusion barrier (EVOH)
Insulation:	CFC-free, CO <sub>2</sub> -blown flexible polyurethane hard foam
Outer sheath:	sinusoidal corrugated, seamless extruded polyethylene (LLD-PE)



### Single-line pipe CPX-UNO

Dimensions mm	Carrier pipe mm	Nom. diameter		Bending r. m	Coil length m	Weight kg/m	Art.-No.
		DN	inches				
22/ 76	22 x 3.0	16	5/8	0.7	520/807	0.96	N59820
28/ 76	28 x 4.0	20	3/4	0.7	520/807	1.06	N59821
32/ 76	32 x 4.4	25	1	0.7	520/807	1.12	N59805
40/ 91	40 x 5.5	32	1 1/4	0.8	377/590	1.56	N59806
50/111	50 x 6.9	40	1 1/2	0.9	271/429	2.25	N59807
63/126	63 x 8.7	50	2	1.0	192/305	3.06	N59808

Supply as section length, as coils and on drums possible



### Twin-line pipe CPX-DUO

Dimensions mm	Carrier pipe mm	Nom. diameter		Bending r. m	Coil length m	Weight kg/m	Art.-No.
		DN	inches				
28 + 22/ 91	28 x 4.0 + 22 x 3.0	20 + 16	3/4 + 5/8	0.8	377/590	1.47	N59809
32 + 22/111	32 x 4.4 + 22 x 3.0	25 + 16	1 + 5/8	0.9	271/429	1.95	N59810
40 + 28/126	40 x 5.5 + 28 x 4.0	32 + 20	1 1/4 + 3/4	1.0	192/305	2.60	N59811
50 + 32/126	50 x 6.9 + 32 x 4.4	40 + 25	1 1/2 + 1	1.0	192/305	2.92	N59812

Supply as section length, as coils and on drums possible

## CALPEX®-Sanitary, with heating tape

Operat. temp.:	max. 95 °C (fluctuating)
Operat. pressure:	10 bar
Carrier pipe:	cross-linked polyethylene PE-Xa without oxygen diffusion barrier (EVOH)
Heating channel:	for frost protection and heating tape for hot water heat tracing (inner width: 18 x 8 mm)
Insulation:	CFC-free CO <sub>2</sub> -blown flexible polyurethane hard foam
Outer sheath:	sinusoidal corrugated, seamless extruded polyethylene (LLD-PE)



### Single-line pipe CPX-UNO-HCC with heating tape

Dimensions mm	Carrier pipe mm	Nom. diameter		Bending r. m	Coil length m	Weight kg/m	Art.-No.
		DN	inches				
32/111	32 x 4.4	25	1	0.9	271/429	1.83	N68004
40/126	40 x 5.5	32	1 1/4	1.0	192/305	2.49	N69251
50/126	50 x 6.9	40	1 1/2	1.0	192/305	2.76	N68002

Supply as section length, as coils and on drums possible



# House entry bend

## CALPEX®-House entry bend 90°

Specification:	leg length 1,1 x 1,6 m
Carrier pipe:	cross-linked polyethylene (PE-Xa)
Insulation:	100% CFC-free polyurethane hard foam
Protective sheath:	polyethylene (PE-HD)

### Bend CPX-UNO

Dimensions in mm	DN	inches		Art.-No.
22/ 76	16	$\frac{5}{8}$	CALPEX®-Bend 90° Sanitary UNO	N63103
28/ 76	20	$\frac{3}{4}$	CALPEX®-Bend 90° Sanitary UNO	N63105
32/ 76	25	1	CALPEX®-Bend 90° Sanitary UNO	N63132
40/ 91	32	1 $\frac{1}{4}$	CALPEX®-Bend 90° Sanitary UNO	N63470
50/111	40	1 $\frac{1}{2}$	CALPEX®-Bend 90° Sanitary UNO	N63471
63/126	50	2	CALPEX®-Bend 90° Sanitary UNO	N63472

### Bend CPX-DUO

Dimensions in mm	DN	inches		Art.-No.
28 + 22/ 91	20 + 16	$\frac{3}{4} + \frac{5}{8}$	CALPEX®-Bend 90° Sanitary DUO	63123
32 + 22/111	25 + 16	1 + $\frac{5}{8}$	CALPEX®-Bend 90° Sanitary DUO	63126
40 + 28/126	32 + 20	1 $\frac{1}{4}$ + $\frac{3}{4}$	CALPEX®-Bend 90° Sanitary DUO	63129
50 + 32/126	40 + 25	1 $\frac{1}{2}$ + 1	CALPEX®-Bend 90° Sanitary DUO	63131



# Sealing ring

## Wall sealing ring

comprising a special section neoprene ring, suitable for

Dimensions in mm	Art.-No.
Outer diameter CALPEX® 76	68765
Outer diameter CALPEX® 91	68766
Outer diameter CALPEX® 111	68767
Outer diameter CALPEX® 126	68768



### Wall sealing ring

for carottage and pipe liner (water pressure tight up to < 0.5 bar)



Dimensions in mm	Art.-No.
Outer diameter CALPEX® 76	67127
Outer diameter CALPEX® 91	67129
Outer diameter CALPEX® 111	67130
Outer diameter CALPEX® 126	67131
Aquagard-Set (Primer)	59627

For centering we recommend a supplementary sealing ring

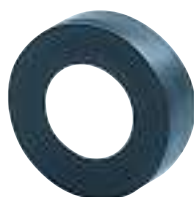
Diameter of core holes and pipe liners on page 47

## End cap

### End cap CPX for dry areas

as termination for house connections, suitable for: PE-LD

End cap for CALPEX®-UNO, suitable for



Dimensions in mm	DN	inches	Art.-No.
22/ 76	16	5/8	69616
28/ 76	20	3/4	69617
32/ 76	25	1	69624
40/ 91	32	1 1/4	69625
50/111	40	1 1/2	69626
63/126	50	2	69627

End cap CALPEX®-DUO, suitable for



Dimensions in mm	DN	inches	Art.-No.
28 + 22/ 91	20 + 16	3/4 + 5/8	69639
32 + 22/111	25 + 16	1 + 5/8	69640
40 + 28/126	32 + 20	1 1/4 + 3/4	69641
50 + 32/126	40 + 25	1 1/2 + 1	69642

End cap for CALPEX®-UNO with heating tape channel, suitable for



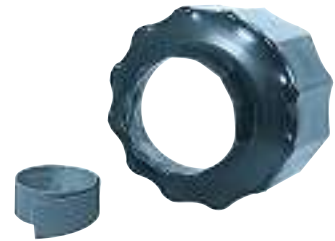
Dimensions in mm	DN	inches	Art.-No.
32/111	25	1	69619
40/126	32	1 1/4	69620
50/126	40	1 1/2	69621

### Heat shrinkable end cap CPX for humid areas

Heat shrinking, as termination for house connections, comprising polymerised and modified polyolefin, coated with sealing adhesive resistant to temperatures up to 125 °C. Including temperature measuring tapes and grinding belt.

Heat shrinkable end cap for CALPEX®-UNO, suitable for

Dimensions in mm	DN	inches	Art.-No.
22/ 76	16	$\frac{5}{8}$	63023
28/ 76	20	$\frac{3}{4}$	61031
32/ 76	25	1	61031
40/ 91	32	1 $\frac{1}{4}$	86300
50/111	40	1 $\frac{1}{2}$	86326
63/126	50	2	86326



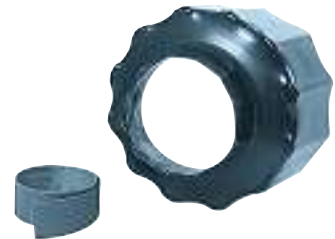
Heat shrinkable end cap for CALPEX®-DUO, suitable for

Dimensions in mm	DN	inches	Art.-No.
28 + 22/ 91	20 + 16	$\frac{3}{4} + \frac{5}{8}$	63025
32 + 22/111	25 + 16	1 + $\frac{5}{8}$	59450
40 + 28/126	32 + 20	1 $\frac{1}{4}$ + $\frac{3}{4}$	59450
50 + 32/126	40 + 25	1 $\frac{1}{2}$ + 1	59450



Shrinkable end cap for CALPEX®-UNO with heating band channel, suitable for

Dimensions in mm	DN	inches	Art.-No.
32/111	25	1	86300
40/126	32	1 $\frac{1}{4}$	86300
50/126	40	1 $\frac{1}{2}$	86326



## Screw connection, sanitary range

### Connection piece CPX with external thread

screw connection made of brass, suitable for

PEX-Pipe in mm	External thread in inches	Art.-No.
22 x 3.0	$\frac{3}{4}$	55280
28 x 4.0	$\frac{3}{4}$	55282
32 x 4.4	1	55289
40 x 5.5	1 $\frac{1}{4}$	55290
50 x 6.9	1 $\frac{1}{2}$	55291
63 x 8.7	2	55292





**Connection piece CPX with weld-on end**  
screw connection made of St 37.0, suitable for

PEX-Pipe in mm	Weld-on end in mm	Art.-No.
22 x 3.0	26.9 x 2.65	55293
28 x 4.0	26.9 x 2.65	55295

Weld-on ends must only be used in the range of heating



**Coupling CPX, equal, screw connection piece**  
of brass for connecting two CALPEX®-district heating pipes, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
22 x 3.0	22 x 3.0	55309
28 x 4.0	28 x 4.0	55311
32 x 4.4	32 x 4.4	55326
40 x 5.5	40 x 5.5	55328
50 x 6.9	50 x 6.9	55330
63 x 8.7	63 x 8.7	55332



**Coupling CPX, reduced, screw connection piece**  
of brass for connecting two CALPEX®-district heating pipes, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
28 x 4.0	22 x 3.0	55312
32 x 4.4	28 x 4.0	55327
40 x 5.5	32 x 4.4	55329
50 x 6.9	40 x 5.5	55331
63 x 8.7	50 x 6.9	55333

For sockets in the earth, we recommend press connections

## Press connection, sanitary range



**Connection piece CPX with external thread**  
press connection made of brass, suitable for

PEX-Pipe in mm	External thread in inches	Art.-No.
22 x 3.0	3/4	68679
28 x 4.0	3/4	68680
32 x 4.4	1	68681
40 x 5.5	1 1/4	68682
50 x 6.9	1 1/2	68683
63 x 8.7	2	68684

**Connection piece CPX with weld-on end**  
press connection made of St 37.0, suitable for

PEX-Pipe in mm	Weld-on end in mm	Art.-No.
22 x 3.0	26.9 x 2.65	68685
28 x 4.0	26.9 x 2.65	68686

Weld-on ends are to be used in heating range only



**Coupling CPX, equal, press connection**

of brass for connecting two CALPEX®-district heating pipes, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
22 x 3.0	22 x 3.0	68718
28 x 4.0	28 x 4.0	68719
32 x 4.4	32 x 4.4	68721
40 x 5.5	40 x 5.5	68723
50 x 6.9	50 x 6.9	68725
63 x 8.7	63 x 8.7	68727



**Coupling CPX, reduced, press connection**

of brass for connecting two CALPEX®-district heating pipes, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
28 x 4.0	22 x 3.0	68720
32 x 4.4	28 x 4.0	68722
40 x 5.5	32 x 4.4	68724
50 x 6.9	40 x 5.5	68726
63 x 8.7	50 x 6.9	68728



**T-Piece CPX**

of brass for connecting three CALPEX®-sanitary pipes, suitable for

Dimension d1-d2-d3	Art.-No.
22-22-22	16160
22-28-22	19478
28-32-28	74997
28-28-28	16129
28-22-28	74993
28-22-22	16662
28-40-28	23587
32-40-32	17343
32-32-32	16347
32-28-32	16162
32-22-32	16666
32-32-28	18998
32-28-28	16161
32-22-28	16663
32-32-22	18648
32-28-22	23236
32-22-22	19525



Required press tool kit on page 41

T-Shell, I-Shell and L-Shell for preinsulating on page 32



Dimension d1-d2-d3	Art.-Nr.
40-50-40	74998
40-40-40	16366
40-32-40	74994
40-28-40	16660
40-22-40	16260
40-40-32	74996
40-32-32	16693
40-28-32	16673
40-22-32	16661
40-50-28	23288
40-40-28	19132
40-22-28	16667
50-50-50	16691
50-40-50	16692
50-32-50	16252
50-28-50	16694
50-22-32	12616
50-22-50	17464
50-50-40	17913
50-40-40	16675
50-32-32	11964
50-32-40	16665
50-28-40	16676
50-22-40	16678
50-50-32	16664
50-40-32	16670
50-28-32	23152
50-50-28	23287
50-40-28	23483
50-28-28	23526
63-63-63	16679
63-50-63	16680
63-40-63	16681
63-32-63	16682
63-28-40	10593
63-28-63	16683
63-22-63	16685
63-50-50	16686
63-40-40	12212
63-40-50	16687
63-32-50	16688
63-28-50	16689
63-63-40	16647
63-50-40	16672

Required press tool kit on page 41  
T-Shell, I-Shell and L-Shell for preinsulating on page 32



### Elbow 90° CPX, equal

of brass for connecting two CALPEX®-sanitary pipes, suitable for

PEX-Pipe in mm	on PEX-Pipe in mm	Art.-No.
22 x 3,0	22 x 3,0	27505
28 x 4,0	28 x 4,0	21844
32 x 4,4	32 x 4,4	20134
40 x 5,5	40 x 5,5	17549
50 x 6,9	50 x 6,9	17550
63 x 8,6	63 x 8,6	17551



Required press tool kit on page 41

T-Shell, I-Shell and L-Shell for preinsulating on page 32



# Combi-set heating / sanitary range

## CALPEX®-Heating and Sanitary

Operat. temp.:	max. 95 °C (fluctuating)
Operat. pressure:	heating 6 bar / sanitary 10 bar
Carrier pipe:	cross-linked polyethylene (PE-Xa) with oxygen diffusion barrier (heating pipes only)
Insulation:	CO <sub>2</sub> -blown flexible polyurethane hard foam
Protective sheath:	sinusoidal corrugated, seamless extruded polyethylene (LLD-PE)

## Quadro pipeline CPX-QUADRIGA



Dimensions mm	Nom. diameter		Coil length m	Weight kg/m	Art.-No.
	DN	inches			
H = 25 + 25, S = 28 + 22, A = 142	H = 20 + 20, S = 20 + 16	H = ¾ + ¾, S = ¾ + ⅝	110/140	3.25	N71900
H = 32 + 32, S = 28 + 22, A = 142	H = 25 + 25, S = 20 + 16	H = 1 + 1, S = ¾ + ⅝	110/140	3.39	N70870
H = 32 + 32, S = 32 + 22, A = 142	H = 25 + 25, S = 25 + 16	H = 1 + 1, S = 1 + ⅝	110/140	3.41	N71901
H = 40 + 40, S = 40 + 28, A = 162	H = 32 + 32, S = 32 + 20	H = 1 ¼ + 1 ¼, S = 1 ¼ + ¾	80/ 90	4.15	N71902

Supply as section length, as coils and on drums possible

# House entry bend

## CALPEX®-House entry bend 90°

Dimension:	leg length 1,1 x 1,6 m
Carrier pipe:	cross-linked polyethylene (PE-Xa) with oxygen diffusion barrier (heating pipes only)
Insulation:	100% CFC-free polyurethane hard foam (CO <sub>2</sub> )
Protective sheath:	polyethylene (PE-HD)

## Bend CPX-QUADRIGA



Dimensions in mm	DN	.inches	Art.-No.
H = 25 + 25, S = 28 + 22, A = 142	H = 20 + 20, S = 20 + 16	H = ¾ + ¾, S = ¾ + ⅝	N72400
H = 32 + 32, S = 28 + 22, A = 142	H = 25 + 25, S = 20 + 16	H = 1 + 1, S = ¾ + ⅝	N72401
H = 32 + 32, S = 32 + 22, A = 142	H = 25 + 25, S = 25 + 16	H = 1 + 1, S = 1 + ⅝	N72402
H = 40 + 40, S = 40 + 28, A = 162	H = 32 + 32, S = 32 + 20	H = 1 ¼ + 1 ¼, S = 1 ¼ + ¾	N72403

# Sealing ring

## Wall sealing ring

comprising a special section neoprene ring, suitable for

Dimensions in mm	Art.-No.
Outer diameter CALPEX® 142	68769
Outer diameter CALPEX® 162	68770



## Wall sealing ring

for carottage bored and pipe liner (water pressure tight up to < 0.5 bar)

Dimensions in mm	Art.-No.
Outer diameter CALPEX® 142	50615
Outer diameter CALPEX® 162	67133
Aquagard-Set (Primer)	59627



For centering we recommend a supplementary sealing ring

Diameter of core holes and pipe liners on page 47

# End cap

## End cap CPX for dry areas

as termination for house connections, comprising PE-LD

End cap for CALPEX®-QUADRIGA, suitable for

Dimensions in mm	DN	inches	Art.-No.
H = 25 + 25, S = 28 + 22, A = 142	H = 20 + 20, S = 20 + 16	H = ¾ + ¾, S = ¾ + ⅝	73780
H = 32 + 32, S = 28 + 22, A = 142	H = 25 + 25, S = 20 + 16	H = 1 + 1, S = ¾ + ⅝	73781
H = 32 + 32, S = 32 + 22, A = 142	H = 25 + 25, S = 25 + 16	H = 1 + 1, S = 1 + ⅝	73782
H = 40 + 40, S = 40 + 28, A = 162	H = 32 + 32, S = 32 + 20	H = 1 ¼ + 1 ¼, S = 1 ¼ + ¾	73783



## Shrinkable end cap CPX for humid areas

Heat shrinking, as termination for house connections, comprising polymerised and modified polyolefin, coated with sealing adhesive resistant to temperatures up to 125 °C. Including temperature measuring tapes and grinding belt.

End cap for CALPEX®-QUADRIGA, suitable for

Dimensions in mm	DN	inches	Art.-No.
H = 25 + 25, S = 28 + 22, A = 142	H = 20 + 20, S = 20 + 16	H = ¾ + ¾, S = ¾ + ⅝	73840
H = 32 + 32, S = 28 + 22, A = 142	H = 25 + 25, S = 20 + 16	H = 1 + 1, S = ¾ + ⅝	73841
H = 32 + 32, S = 32 + 22, A = 142	H = 25 + 25, S = 25 + 16	H = 1 + 1, S = 1 + ⅝	73842
H = 40 + 40, S = 40 + 28, A = 162	H = 32 + 32, S = 32 + 20	H = 1 ¼ + 1 ¼, S = 1 ¼ + ¾	73843



# Screw connection

## Connection piece CPX, screw fittings (nut + ring type)

for connecting two district heating pipes

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PEX-connection piece of brass with external thread

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PEX-connection piece with weld-on end St 37.0 steel

---

Heating page 12, Sanitary page 23



## Coupling CPX, equal/reduced, screw connection piece

of brass for connecting two CALPEX® district heating pipes

---

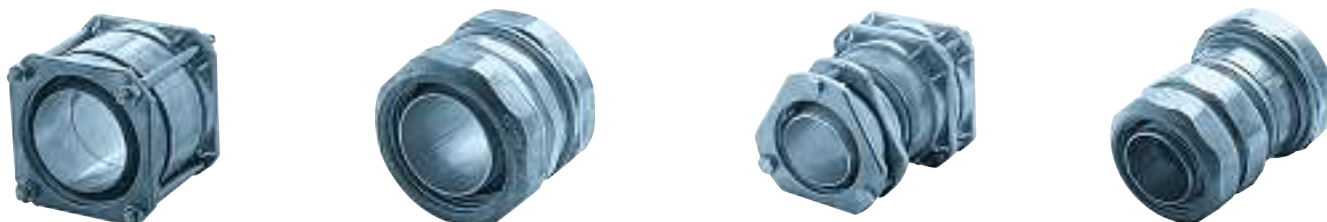
CALPEX®-coupling, equal

---

CALPEX®-coupling, reduced

---

Heating page 12, Sanitary page 23



For sockets in the earth we recommend press connections

# Press connection

## Connection piece CPX, press fittings (sliding sleeve type)

for connecting two district heating pipes

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PEX-connection piece of brass with external thread

---

PEX-connection piece with weld-on fitting St 37.0 steel

---

Heating page 15, Sanitary page 24



## Coupling CPX, equal/reduced, press connection piece

of brass for connecting two CALPEX®-district heating pipes

---

CALPEX®-coupling, equal

---

CALPEX®-coupling, reduced

---

Heating page 15, Sanitary page 24



For the system CALPEX®-QUADRIGA we recommend connection pieces and couplings with press connection



# T-branch, heating / sanitary range

CPX®-T, UNO and DUO (Ø 76 – 126 mm)

Comprising: 2 ABS-half shell with/without plug hole, sealing rings, closing clamps (POM), venting plugs (ABS), 1 glue, installation instructions, foam bottles  
 Insulation: CFC-free polyurethane foam bottled  
 Note: for T-branches in earth and CALPEX®-DUO we recommend press connections only



## CPX-T

for CALPEX®-UNO/ -DUO (heating / sanitary) with polyurethane foam package and sealing rings, suitable for

Dimensions in mm					
d1/d3	d2:	76	91	111	126
76/ 76		80500	-	-	-
91/ 91		80504	80505	-	-
91/ 76		80501	80504	-	-
111/111		80509	80510	80512	-
111/ 91		80508	80506	80510	-
111/ 76		80502	80508	80509	80513
126/126		80516	80517	80518	80519
126/111		80513	80511	80514	80518
126/ 91		80515	80507	80511	80517
126/ 76		80503	80515	80513	80516

## CPX-I

for CALPEX®-UNO/ -DUO (heating / sanitary) with polyurethane foam package and sealing rings, suitable for



Dimensions in mm		Art.-No.
d1/d2		
76/ 76		80620
91/ 91		80622
91/ 76		80621
111/111		80624
111/ 91		80623
126/126		80626
126/111		80625

## CPX-L

for CALPEX®-UNO/ -DUO (heating / sanitary) with polyurethane foam package and sealing rings, suitable for



Dimensions in mm		Art.-No.
d1/d2		
76/ 76		80637
91/ 91		80638
111/111		80639
126/126		80640

Not applicable for CALPEX®-QUADRIGA!



## Spare parts for CPX-T, -I, -L

Article	Dimensions in mm	CPX-T	CPX-I	CPX-L
		Art.-No.	Art.-No.	Art.-No.
Sealing ring 1	76	50402	50402	50402
Sealing ring 2	91	50403	50403	50403
Sealing ring 3	111	50404	50404	50404
Sealing ring 4	126	50405	50405	50405
Packing unit without sealing rings		80700	80706	80704



### CPX®-Big-T, type UNO and DUO (Ø 76 – 182 mm)

Comprising: 2 ABS-half shell with/without plug hole, 3 sealing rings, 27 closing clamps (POM), 3 venting plugs (ABS), 1 glue, installation instructions, foam bottles

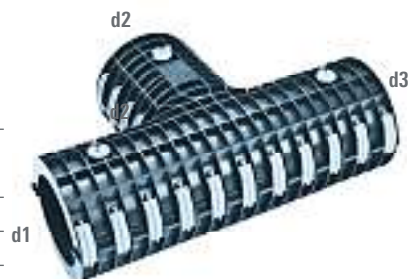
Insulation: CFC-free polyurethane foam bottled

Note: for T-branches in earth and CALPEX®-DUO we recommend press connections only

### CPX-Big-T

for CALPEX®-UNO/-DUO heating/sanitary with polyurethane foam package and sealing rings, suitable for

Dimensions in mm								
d1/d3	d2:	76	91	111	126	142	162	182
142/ 76		80800	80801	80803	80806	80810	-	-
142/ 91		80801	80802	80804	80807	80811	-	-
142/111		80803	80804	80805	80808	80812	-	-
142/126		80806	80807	80808	80809	80813	-	-
142/142		80810	80811	80812	80813	80814	-	-
162/ 76		80815	80816	80818	80821	80825	80830	-
162/ 91		80816	80817	80819	80822	80826	80831	-
162/111		80818	80819	80820	80823	80827	80832	-
162/126		80821	80822	80823	80824	80828	80833	-
162/142		80825	80826	80827	80828	80829	80834	-
162/162		80830	80831	80832	80833	80834	80835	-
182/ 76		80836	80837	80839	80842	80846	80851	80857
182/ 91		80837	80838	80840	80843	80847	80852	80858
182/111		80839	80840	80841	80844	80848	80853	80859
182/126		80842	80843	80844	80845	80849	80854	80860
182/142		80846	80847	80848	80849	80850	80855	80861
182/162		80851	80852	80853	80854	80855	80856	80862
182/182		80857	80858	80859	80860	80861	80862	80863



Not applicable for CALPEX®-QUADRIGA, connecting chamber on page 41

### CPX-Big-I

for CALPEX®-UNO / -DUO (heating / sanitary) with polyurethane foam package and sealing rings, suitable for



Dimensions in mm	
d1/d2	Art.-No.
142/126	80881
142/142	80882
162/142	80884
162/162	80885
182/162	80887
182/182	80888

### CPX-Big-L

for CALPEX®-UNO / -DUO (heating / sanitary) with polyurethane foam package and sealing rings, suitable for



Dimensions in mm	
d1/d2	Art.-No.
142/142	80872
162/162	80875
182/182	80878

### Spare parts for CPX-Big-T, -I, -L



Article	Dimensions	CPX-Big-T	CPX-Big-I	CPX-Big-L
	in mm	Art.-No.	Art.-No.	Art.-No.
Sealing ring 1	76	51410	51410	51410
Sealing ring 2	91	51411	51411	51411
Sealing ring 3	111	51412	51412	51412
Sealing ring 4	126	51413	51413	51413
Sealing ring 5	142	51414	51414	51414
Sealing ring 6	162	51415	51415	51415
Sealing ring 7	182	51416	51416	51416
Packing unit without sealing rings		80703	80709	80711

Not applicable for CALPEX®-QUADRIGA, connecting chamber on page 41

### CALPEX®-T-piece preinsulated

Specification: carrier pipe St 37.0 incl. press fitting and sliding ring  
160 / 250 mm: Branch line bent 45°

Insulation: 100% CFC-free polyurethane hard foam

Protective sheath: polyethylene (PE-HD)

Note: connecting sockets are not included in delivery; please note that the insulation of the CPX is thicker (Ø 200 mm / Ø 225 mm) and adequate reduction sockets are required



### CPX-T-piece preinsulated

Carrier pipe St 37.0 incl. press fitting and sliding ring

#### Dimensions in mm

d1/d3	d2:	25/76	32/76	40/91	50/111	63/126	75/142	90/162	110/162*	110/182**	125/182***	160/250
160/250 – 160/250		22063482	22063483	22063484	22063485	22063486	22063487	22063488	22063489*	22063489**	22063490***	22063491

\* reduction socket Ø 200/160 is required.

\*\* reduction socket Ø 200/180 is required.

\*\*\* reduction socket Ø 225/180 is required.



T-pieces with different branches on request

# Socket, heating range

## CALPEX®-Connecting socket set, type CALPEX®-CALPEX®

Comprising: PE-HD socket pipe (reduced at one side for reducing sockets), two PE-shrinking hoses and a grinding belt  
 Insulation: foam package of polyurethane or PE-foam



### Connecting socket set CPX-UNO

for CALPEX®-UNO Heating with PUR-foam package or PE-foam, suitable for

Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
25/ 76 to 25/ 76	63218	63171
25/ 76 to 32/ 76	63218	63171
32/ 76 to 32/ 76	63218	63171
32/ 76 to 40/ 91	63223	63175
40/ 91 to 40/ 91	63205	63174
40/ 91 to 50/111	63207	63177
50/111 to 50/111	63206	63176
50/111 to 63/126	63209	63179
63/126 to 63/126	63208	63178
63/126 to 75/142	63213	63181
75/142 to 75/142	63212	63180
75/142 to 90/162	63215	63183
90/162 to 90/162	63214	63166
90/162 to 110/162	63214	63530
110/162 to 110/162	63214	63530
110/162 to 110/182	63397	18105
110/182 to 110/182	18100	18106
125/182 to 110/162	63397	-
125/182 to 110/182	18100	-
125/182 to 125/182	18100	-
160/250 to 125/182	18113	-
160/250 to 160/250	18123	-

### Connecting socket set CPX-DUO

for CALPEX®-DUO Heating with PUR-foam package or PE foam, suitable for



Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
2 x 25/ 91 to 2 x 25/ 91	63205	63264
2 x 25/ 91 to 2 x 32/111	63207	63266
2 x 32/111 to 2 x 32/111	63206	63265
2 x 32/111 to 2 x 40/126	63209	63268
2 x 40/126 to 2 x 40/126	63208	63267
2 x 40/126 to 2 x 50/162	63291	63261
2 x 50/162 to 2 x 50/162	63381	63250
2 x 50/162 to 2 x 63/182	63397	18107
2 x 63/182 to 2 x 63/182	18100	18108

# Socket, sanitary range

## CALPEX®-Connecting socket set, type CALPEX®-CALPEX®

Comprising: PE-HD socket pipe (reduced at one side for reducing sockets), two PE-shrinking hoses and a grinding belt  
 Insulation: foam package of polyurethane or PE-foam

### Connecting socket set CPX-UNO

for CALPEX®-UNO Sanitary with PUR-foam package or PE-foam, suitable for

Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
22/ 76 to 22/ 76	63218	63171
28/ 76 to 28/ 76	63218	63171
28/ 76 to 32/ 76	63218	63171
32/ 76 to 32/ 76	63218	63171
32/ 76 to 40/ 91	63223	63175
40/ 91 to 40/ 91	63205	63174
40/ 91 to 50/111	63207	63177
50/111 to 50/111	63206	63176
50/111 to 63/126	63209	63179
63/126 to 63/126	63208	63178



### Connecting socket set CPX-DUO

for CALPEX®-DUO Sanitary with PUR-foam package or PE-foam, suitable for

Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
28 + 22/ 91 to 28 + 22/ 91	63205	63264
28 + 22/ 91 to 32 + 22/111	63207	63266
32 + 22/111 to 32 + 22/111	63206	63265
32 + 22/111 to 40 + 28/126	63209	63268
40 + 28/126 to 40 + 28/126	63208	63267
40 + 28/126 to 50 + 32/126	63208	63267
50 + 32/126 to 50 + 32/126	63208	63267



### Connecting socket set CPX-UNO (HCC)

for CALPEX®-UNO Sanitary with heating cable channel and PUR-foam package or PE-foam, suitable for

Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
32/111 to 32/111	63206	63156
32/111 to 40/126	63209	63159
40/126 to 40/126	63208	63158
40/126 to 50/126	63208	63161
50/126 to 50/126	63208	63160





# Socket, CALPEX®-KMR range

## CALPEX®-Connecting socket set, type CALPEX®-plastic sheath pipe (KMR)

Comprising: PE-HD socket pipe (reduced at one side for reducing sockets), two PE-shrinking hoses and a grinding belt  
 Isolation: foam package of polyurethane or PE-foam



### Connecting socket set CPX-KMR

for CALPEX®-UNO Heating/Sanitary with PUR-foam package or PE-foam, suitable for

Dimensions in mm	Art.-No. PUR-foam	Art.-No. PE-foam
CALPEX® 22/ 76 to plastic sheath pipe 26.9/ 90	63223	63332
CALPEX® 22/ 76 to plastic sheath pipe 26.9/110	63398	63348
CALPEX® 22/ 76 to plastic sheath pipe 26.9/125	63414	63367
CALPEX® 25/ 76 to plastic sheath pipe 26.9/ 90	63223	63332
CALPEX® 25/ 76 to plastic sheath pipe 26.9/110	63398	63348
CALPEX® 25/ 76 to plastic sheath pipe 26.9/125	63414	63367
CALPEX® 28/ 76 to plastic sheath pipe 26.9/ 90	63223	63332
CALPEX® 28/ 76 to plastic sheath pipe 26.9/110	63398	63348
CALPEX® 28/ 76 to plastic sheath pipe 26.9/125	63414	63367
CALPEX® 32/ 76 to plastic sheath pipe 33.7/ 90	63223	63332
CALPEX® 32/ 76 to plastic sheath pipe 33.7/110	63398	63348
CALPEX® 32/ 76 to plastic sheath pipe 33.7/125	63414	63367
CALPEX® 40/ 91 to plastic sheath pipe 42.4/110	63207	63177
CALPEX® 40/ 91 to plastic sheath pipe 42.4/125	63402	63352
CALPEX® 40/ 91 to plastic sheath pipe 42.4/140	63418	63368
CALPEX® 50/111 to plastic sheath pipe 48.3/110	63206	63337
CALPEX® 50/111 to plastic sheath pipe 48.3/125	63209	63353
CALPEX® 50/111 to plastic sheath pipe 48.3/140	63419	63369
CALPEX® 63/126 to plastic sheath pipe 60.3/125	63208	63178
CALPEX® 63/126 to plastic sheath pipe 60.3/140	63213	63354
CALPEX® 63/126 to plastic sheath pipe 60.3/160	63291	63370
CALPEX® 75/142 to plastic sheath pipe 76.1/140	63395	63339
CALPEX® 75/142 to plastic sheath pipe 76.1/160	63215	63355
CALPEX® 75/142 to plastic sheath pipe 76.1/180	63421	63371
CALPEX® 90/162 to plastic sheath pipe 88.9/160	63381	63331
CALPEX® 90/162 to plastic sheath pipe 88.9/180	63397	63347
CALPEX® 90/162 to plastic sheath pipe 88.9/200	63413	63363
CALPEX® 110/162 to plastic sheath pipe 114.3/200	63413	63534
CALPEX® 110/162 to plastic sheath pipe 114.3/225	63538	63535
CALPEX® 110/162 to plastic sheath pipe 114.3/250	63539	63536
CALPEX® 110/182 to plastic sheath pipe 114.3/200	18110	18117
CALPEX® 110/182 to plastic sheath pipe 114.3/225	18112	18118
CALPEX® 110/182 to plastic sheath pipe 114.3/250	18113	18119
CALPEX® 125/182 to plastic sheath pipe 139.7/200	18110	-
CALPEX® 125/182 to plastic sheath pipe 139.7/225	18112	-
CALPEX® 125/182 to plastic sheath pipe 139.7/250	18113	-
CALPEX® 160/250 to plastic sheath pipe 168.3/250	18123	-
CALPEX® 160/250 to plastic sheath pipe 168.3/280	18126	-
CALPEX® 160/250 to plastic sheath pipe 168.3/315	18128	-



# Sockets without insulating material

## CALPEX®-Connecting Set, type CALPEX®-Plastic sheath pipe (KMR)

Comprising: PE-HD socket pipe (reduced at one side for reducing sockets), two PE-shrinking hoses and a grinding belt

### Connecting socket set CPX-KMR

for CALPEX®-UNO Heating/Sanitary, without insulating material, suitable for

Dimensions in mm	Art.-No.
CALPEX® 76 to plastic sheath pipe 90	63090
CALPEX® 76 to plastic sheath pipe 110	63243
CALPEX® 76 to plastic sheath pipe 125	63308
CALPEX® 91 to plastic sheath pipe 90	63080
CALPEX® 91 to plastic sheath pipe 110	63092
CALPEX® 91 to plastic sheath pipe 125	63260
CALPEX® 91 to plastic sheath pipe 140	63311
CALPEX® 111 to plastic sheath pipe 90	63092
CALPEX® 111 to plastic sheath pipe 110	63081
CALPEX® 111 to plastic sheath pipe 125	63095
CALPEX® 111 to plastic sheath pipe 140	63312
CALPEX® 126 to plastic sheath pipe 110	63095
CALPEX® 126 to plastic sheath pipe 125	63082
CALPEX® 126 to plastic sheath pipe 140	63098
CALPEX® 126 to plastic sheath pipe 160	63099
CALPEX® 142 to plastic sheath pipe 125	63098
CALPEX® 142 to plastic sheath pipe 140	63235
CALPEX® 142 to plastic sheath pipe 160	63089
CALPEX® 142 to plastic sheath pipe 180	63314
CALPEX® 162 to plastic sheath pipe 140	63089
CALPEX® 162 to plastic sheath pipe 160	63195
CALPEX® 162 to plastic sheath pipe 180	63242
CALPEX® 162 to plastic sheath pipe 200	63293
CALPEX® 162 to plastic sheath pipe 225	63540
CALPEX® 162 to plastic sheath pipe 250	63541
CALPEX® 182 to plastic sheath pipe 160	63242
CALPEX® 182 to plastic sheath pipe 180	18109
CALPEX® 182 to plastic sheath pipe 200	18120
CALPEX® 182 to plastic sheath pipe 225	18121
CALPEX® 182 to plastic sheath pipe 250	18122
CALPEX® 250 to plastic sheath pipe 250	18124
CALPEX® 250 to plastic sheath pipe 280	18127
CALPEX® 250 to plastic sheath pipe 315	18129



## CALPEX®-Connecting socket set, type CALPEX®-CALPEX®

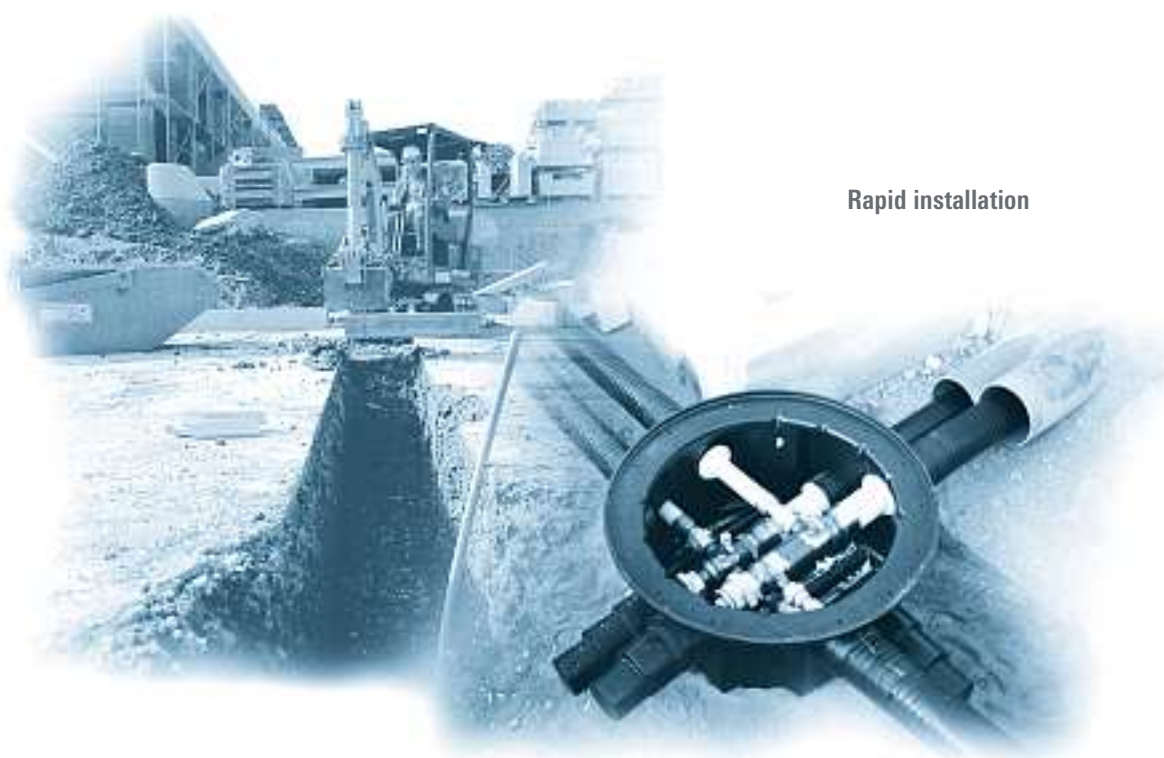
Comprising: PE-HD socket pipe (reduced at one side for reducing sockets), two PE-shrinking hoses and a grinding belt



### Connecting socket set CPX-CPX

for CALPEX® Heating/Sanitary without insulating material, suitable for

Ø Casing in mm	UNO	DUO	QUADRIGA
76 to 76	63079	-	-
76 to 91	63090	-	-
91 to 91	63080	63080	-
91 to 111	63092	63092	-
111 to 111	63081	63081	-
111 to 126	63095	63095	-
126 to 126	63082	63082	-
126 to 142	63098	-	-
142 to 142	63083	63083	63089
142 to 162	63089	63089	-
162 to 126	-	63099	-
162 to 162	63084	63195	63242
162 to 182	63242	63242	-
182 to 182	18109	18109	-
182 to 250	18122	-	-
250 to 250	18124	-	-

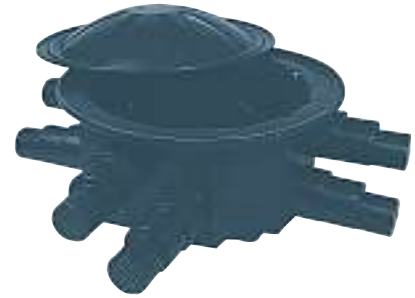


**Rapid installation**

# Accessories

## Connecting chamber

comprising a chamber, cap, screws, subject disks, nuts and assembly instruction

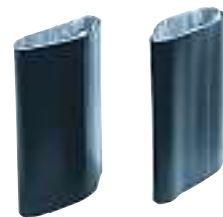


Article	Art.-No.
Connecting chamber DN 16 – 100	69783

## Entry sealing

for connecting chamber comprising shrinking hoses, grinding belt to the dimensions with outer diameter 76, 91, 126 and 162 with centering ring

Dimensions in mm	Art.-No.
for outer diameter CALPEX® 76	69790
for outer diameter CALPEX® 91	69789
for outer diameter CALPEX® 111	69788
for outer diameter CALPEX® 126	69787
for outer diameter CALPEX® 142	69786
for outer diameter CALPEX® 162	69785
for outer diameter CALPEX® 182	18270



## Leasable tool kits for press connection

comprising tool box (expansion tool and press tool)

Article	Art.-No.
Manual press tool REHAU DN 16 – 32 (5/8 – 1 1/4")	68729



Article	Art.-No.
Hydraulic expansion tool REHAU DN 40 – 100 (1 1/2 – 4")	68740
Hydraulic press yoke REHAU DN 40 – 100 (1 1/2 – 4")	63593



Both tool boxes are necessary

Article	Art.-No.
Electrohydraulic expansion tool REHAU DN 125 – 150 (5 – 6")	67691
Hydraulic press yoke REHAU DN 125 – 150 (5 – 6")	67725



Both tool boxes are necessary

## Leasable tool kits for electrofusion fitting for PEXa pipes

comprising welding tool and clamps

Article	Art.-No.
Tool set	50990

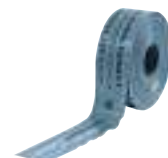
The electrofusion fittings are installed exclusively by certified fitters!



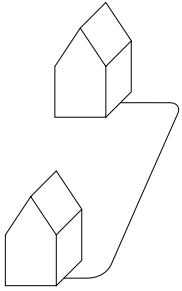
## Trench warning tape CPX

with imprint «Caution district heating pipe»

















Article	Art.-No.
Warning tape (length customised)	35702

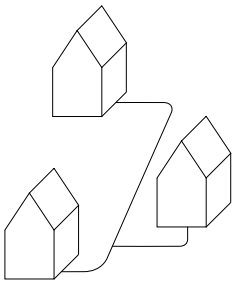


# Checklist

























## Example 1: House-house connection

With CALPEX®-UNO		With CALPEX®-DUO	
Quantity	Material	Quantity	Material
	2 Single-line pipes CPX-UNO		1 Twin-line pipe CPX-DUO
	4 Sealing rings CPX or		2 Sealing rings CPX or
	4 Wall sealing rings		2 Wall sealing rings
	4 End caps CPX for dry areas or		2 End caps CPX for dry areas or
	4 Shrinking end caps CPX for wet areas		2 Shrinking end caps CPX for wet areas
	4 Connection pieces CPX, screw connection or		4 Connection pieces CPX, screw connection or
	4 Connection pieces CPX, press connection		4 Connection pieces CPX, press connection
	1 Trench warning tape		1 Trench warning tape



## Example 2: House-house connection with branch line

With CALPEX®-UNO		With CALPEX®-DUO	
Quantity	Material	Quantity	Material
	6 Single-line pipes CPX-UNO		3 Twin-line pipes CPX-DUO
	6 Sealing rings CPX or		3 Sealing rings CPX or
	6 Wall sealing rings		3 Wall sealing rings
	6 End caps CPX for dry areas or		3 End caps CPX for dry areas or
	6 Shrinking end caps CPX for wet areas		3 Shrinking end caps CPX for wet areas
	6 Connection pieces CPX, screw connection or		6 Connection pieces CPX, screw connection or
	6 Connection pieces CPX, press connection		6 Connection pieces CPX, press connection
	2 T-pieces CPX-UNO, press connection		2 T-pieces CPX-UNO, press connection
	2 Installation CPX T-piece or		1 Installation CPX T-piece or
	1 Connecting chamber shrinking hoses		1 Connecting chamber shrinking hoses
	1 Trench warning tape		1 Trench warning tape

# Installation tools

The installation instruction is one of the most important tools!

Basic tool	Working steps
Saw	Cutting the sheathed pipe and insulation
Sharp knife	Removing the insulation
Plastic or rubber mallet	Auxiliary tool
Gas burner	For all shrinking tasks
Cleaning agent and cloth	Cleaning the casing
2 adjustable spanners	Tightening the cap nut/holding of the connections in case of PEX-screw connections
Drill machine and pin drill	When operating with sockets, drilling the hole where to fill in the foam
Gloves	When operating with gas burner
Goggles	Protection of the eyes while operating with PUR-foam cartridge



# Transport

Max. delivery height	2800 mm
Max. delivery width	800/1200 mm
Max. delivery length	up to 760 m depending on dimension
Delivery weight	1– 6.38 kg/m
Accessories	cardboard-packs
When using a fork-lift to unload the rings, the forks should be protected in order to avoid cutting into the pipe casing.	

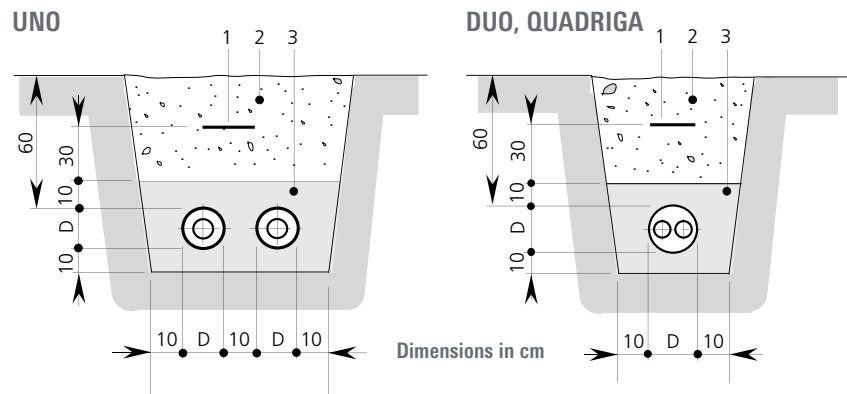


# Storage

Before laying, pipes must be stored at min. 5 °C
Do not remove protective caps before laying
Store dry cardboard with accessories



# Trench space dimensions



## Trench section

Any projecting stones and rocks in the trench must be removed.

1	Trench warning tape
2	Excavated material
3	Sand washed, grain size 0–8 mm

**Covering height:** Max. covering height: 2.6 m, higher covering needs advise from Brugg Rohrsysteme. SLW 30 = 300 kN wheel load DIN 1072; for bigger loads (e.g. SLW 60) a load distribution superstructure according RSt075 is required. Without traffic load the minimum covering height may be reduced by 20 cm.

# Laying

Do **not** roll the CALPEX®-ring out over edges, and do **not** pull the unrolled pipe over long distances on the asphalt. This can cause damage to the protective polyethylene casing. Damaged points on the casing can be repaired, using the shrink socket.



1. Place the CALPEX®-ring at the start of the line, and cut the outermost fixing tape.



2. Unroll the ring as far as the next fixing tape; only now should you cut the next fixing tape.



3. Repeat this procedure until the ring has been unrolled.

## IMPORTANT!

CALPEX®-rings are under tension! Under no circumstances must you cut all the fixing tapes together. Uncontrolled release of the tension in the rings is **DANGEROUS** (spring effect).



# Aligning the pipe ends

If necessary (e.g. if the laying temperature is low, or the pipe diameter is large) curved pipe ends can be bent straight with the help of an aligning rail.



1. Fix the CALPEX®-pipe to one end of the rail, using the tensioning belt.



2. Fix the CALPEX®-pipe to the other end of the rail.



3. Use hot air or hot water to heat the medium pipe; let it cool – and the job is finished.

## Estimated installation time for CALPEX®

### Estimated installation time for CALPEX®

Laying of CALPEX®-district heating pipes in open trenches

Dimension of sheath mm	Dimensions of coils m	Number of fitters	CPX-UNO min	CPX-DUO min
76 – 91	25	2	20	-
	50	2	35	-
	75	2	50	-
111 – 126	25	2 – 3	25	25
	50	3	40	40
	75	3	55	55
142	30	4	30	30
	70	4	65	65
162	30	4 – 5	40	40
	70	4 – 5	75	75
182	30	4 – 5	45	45
	70	by truck	85	85

### House connection

PEX-coupling, end cap, sealing ring

Dimension of sheat mm	Number of fitters	CPX-UNO min	CPX-DUO min
76–126	1	20	30
142	1	30	-
162	1	40	-
182	1	45	-

### Insulation

Socket connection incl. PEX-coupling

Dimension of sheat mm	Number of fitters	CPX-UNO min	CPX-DUO min
76–126	1–2	60	75
142–162	1–2	70	-
182–250	1–2	80	-

### GFK-T-piece up to DN 100

incl. PEX-T-coupling

Dimension of sheat mm	Number of fitters	CPX-UNO min	CPX-DUO min
76–126	1–2	50	75
142–182	1–2	75	100
250	1–2	180	-

### A special tool set is required for press connections

DN 16–32: Tool consisting of 1 box

DN 40–100: Tool consisting of 2 boxes

DN 125–150: Tool consisting of 2 boxes

### Not included are:

- Travel time
- Pressure test
- Welding of connection and T-pieces

The estimated time may vary according to the individual situation at site (site conditions, condition of trenches, existing pipelines in ground, weather conditions, etc.)

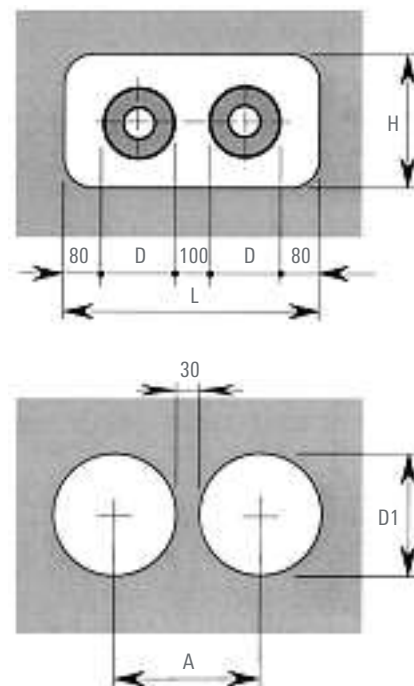


# Building entry

## Wall entry/breakthrough bored for wall sealing ring (Neopren)

Ø Protective sheath in mm	L min in mm	H in mm
78	450	250
93	500	250
113	500	300
128	550	300
143	600	350
163	650	350
183	670	380
250	810	450

Ø Protective sheath in mm	D1 min in mm	A in mm
78	180	210
93	200	230
113	220	250
128	240	270
143	260	290
163	280	310
183	300	330
250	370	395

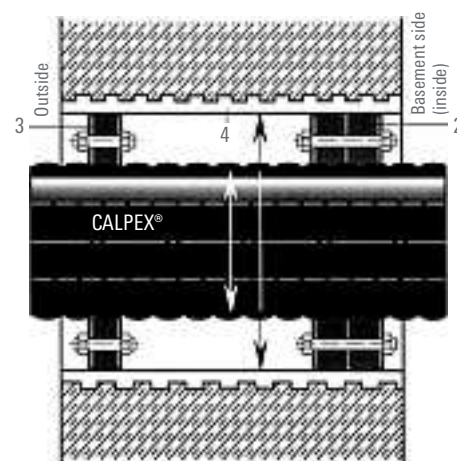


## Wall entry/breakthrough bored for wall sealing ring (compressible)

Prerequisites for installation are perfect drill holes. Since hairline cracks can exist in concrete or can arise as a result of the work, we recommend sealing the hole over the entire length with a sealant (e.g. AQUAGARD).

Tightness can only be guaranteed if this recommendation is followed.

Ø Casing mm	Pipe liner core drilling mm	Sealing set Ø inside in mm	Sealing set Ø outside in mm
76	150	78	150
91	150	93	150
111	200	113	200
126	200	128	200
142	200	143	200
162	250	163	250
182	250	183	250
250	350	251	350

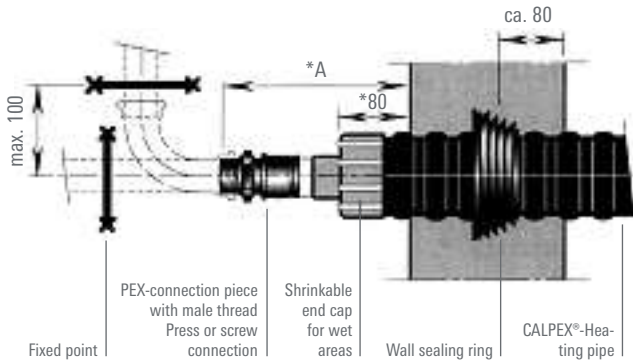


Wall sealing rings heating range page 10 / Wall sealing rings sanitary range page 21

- 1 CALPEX®-district heating pipe
- 2 Sealing set double-sealing, width 2 x 40 mm, Shore hardness 35
- 3 Sealing set (centering), width 1 x 20 mm
- 4 Pipe liner made of fibre cement or coated core bore

# House connection

## Connection with male thread

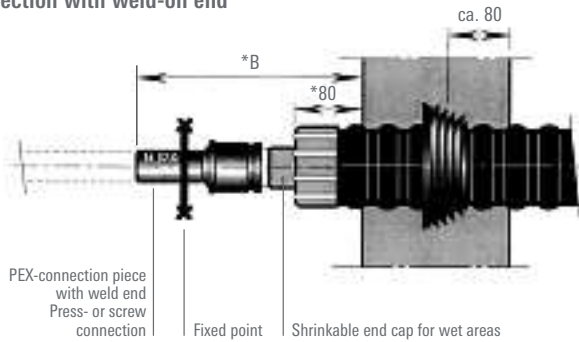


Dimensions mm	Press connection Length A in mm	Screw connection Length A in mm
25/ 76	260	210
32/ 76	260	220
40/ 91	270	220
50/111	270	220
63/126	320	230
75/142	320	235
90/162	330	260
110/182	340	270
125/182	340	-
160/250	340	-

\* Dimensions may be reduced by max. 60 mm when end cap is walled in.

22/ 76	260	210
28/ 76	260	210
32/ 76	260	220
40/ 91	270	220
50/111	270	220
63/126	270	230

## Connection with weld-on end



Dimensions mm	Press connection Length A in mm	Screw connection Length A in mm
25/ 76	250	340
32/ 76	250	340
40/ 91	260	340
50/111	270	360
63/126	310	340
75/142	310	340
90/162	310	410
110/182	310	450
125/182	310	-
160/250	310	-

\* Dimensions may be reduced by max. 60 mm when end cap CPX is used for dry areas.

## Resulting fix point forces for CALPEX®-pipe

### CALPEX®-Heating, 6 bar

Max. resulting fix point forces for each pipe at:

---

$T_B = 90\text{ °C}$ ,  $p_B = 6\text{ bar}$

Dimensions in mm	DN	Fmax (N)
25/ 76	20	925
32/ 76	25	1495
40/ 91	32	2365
50/111	40	3685
63/126	50	5785
75/142	65	8205
90/162	80	11860
110/162	100	17675
110/182	100	17675
125/182	125	22878
160/250	150	37510

---

---

$T_B = 60\text{ °C}$ ,  $p_B = 6\text{ bar}$

Dimensions in mm	DN	Fmax (N)
25/ 76	20	755
32/ 76	25	1225
40/ 91	32	1940
50/111	40	3015
63/126	50	4740
75/142	65	6720
90/162	80	9720
110/162	100	14480
110/182	100	14480
125/182	125	18745
160/250	150	30730

---

### CALPEX®-Sanitary, 10 bar

Max. resulting fix point forces for each pipe at:

---

$T_B = 60\text{ °C}$ ,  $p_B = 10\text{ bar}$

Dimensions in mm	DN	Fmax (N)
22/ 76	16	820
28/ 76	20	1350
32/ 76	25	1730
40/ 91	32	2700
50/111	40	4230
63/126	50	6715

---

# Installation instructions CALPEX®

## Stripping, pipe-preparation



1. Mark the distance (x, y, z) + 1 cm from the end of the pipe.



2. Cut the jacket with a pipe-cutter or a saw at the marked distance from the end of the pipe.



3. Open the jacket longitudinally. Knife max. 5 mm deep into foam.



4. Remove jacket.



5. Cut back insulation over the marked distance.  
**Attention:** Service-pipe with barrier of EVOH! Be careful!



6. Mount the wall seal. Stretch the clip (if existing).



7. Grind protective sheath.



8. Carefully put end cap CPX for below ground onto the pipe according to the enclosed Raychem DHEC installation instruction or attach end cap CPX for above ground.



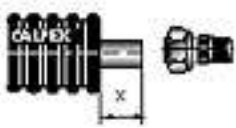
9. Cut the PEX-Pipe square to its axis (max. 1 cm).

Stripping length (x, y, z) see drawing on page 51



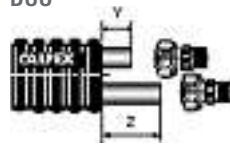
## Stripping length for screw connections

### UNO



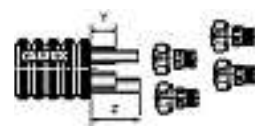
DN 16–65:  
X = 90 mm  
DN 80, 100:  
X = 140 mm

### DUO



DN 16–40:  
Y = 80 mm  
DN 16–40:  
Z = 180 mm

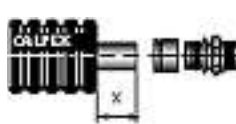
### QUADRIGA



Heating  
Y = 110 mm  
Sanitary  
Z = 200 mm

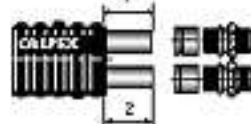
## Stripping length for press connections

### UNO



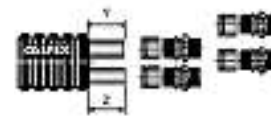
DN 16–40:  
X = 140 mm  
DN 50–125:  
X = 180 mm  
DN 110–125:  
X = 150 mm

### DUO



DN 16–40:  
Y, Z = 140 mm

### QUADRIGA



Y, Z = 140 mm

# Installation instructions for connections

## Screw connections



1. Put the union nut and the clamping ring onto the pipe.



2. Heat PEX-pipe up to 60 °C.



3. Push the muff as far as the base of the recess.



4. Move the union nut, the clamping ring and the muff together, and tighten them adequately. Caution: Do not overtighten!



5. Heat the Beulco fitting to 60–80 °C again.



6. Retighten the fitting. Caution: Do not overtighten!



7. The job is finished!

## Press connections



1. Push the sliding sleeve over the pipe; the inner ridge must point to the end of the pipe (with the conical end of the sliding sleeve towards the end of the pipe).



2. Widen the pipe twice, with a 30° offset; the sliding sleeve must not be located in the widened zone.



3. Insert the fitting in the pipe, and the fitting will "sit" firmly in the pipe after a short while (memory effect).



4. Apply the tool; do not tilt.



5. Move the selector button to the slide position.



6. With levering movements, push the slider sleeve as far as the collar of the fitting.



7. Move the selector button to the reset position.



8. Press the levers together again, then swivel the movable lever upwards by 90° to move the tool into its initial position.



9. The job is finished!

## Fitting instruction - chamber



1. Saw the shaft mouth to match the outer diameter of the pipe –  $\varnothing$  136, 166 or 186 mm are possible.



2. Pull the shrink hose over the pipe ends.



3. Fit the two-section reducer ring (only needed for CPX dimensions 76, 91 and 126 mm).



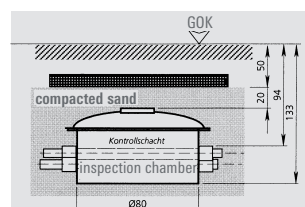
4. Grind the shaft mouths.



5. Remove the protective film from the shrink hose and heat-shrink.  
Filling/insulation material:  
– polystyrene fragments  
– Armaflex or Tubolit



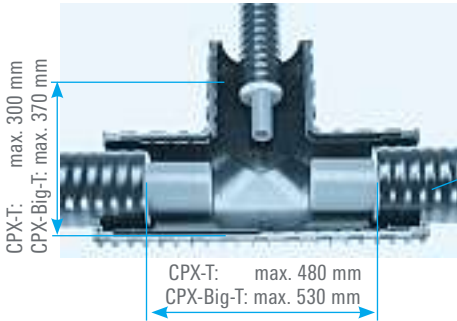
6. Screw the shaft together with the cover, including the sealing ring (screws, washers and nuts are supplied).



7. A pressure distribution plate must be used wherever there could be public traffic. The maximum surface load must not exceed  $q = 153 \text{ kN/m}^2$  (SLW 60 to DIN 1055).

# Installation instructions, T-Shell and connecting chamber

## CALPEX®-T-Shell and CALPEX®-Big-T



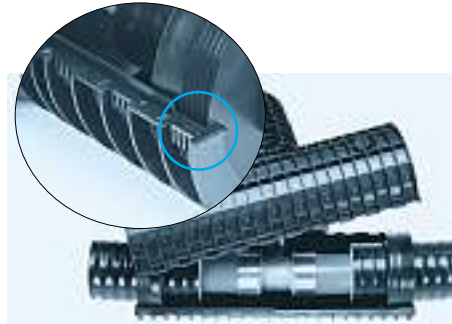
1. Strip the insulation from the pipes.



2. Pull all the sealing rings over the pipe end. The sealing lips must be facing the stripped end.



3. Connect the pipes according to the installation instructions.



4. Position the sealing rings precisely. The front faces must be in contact. Check the fit of the upper shell.



5. Clean all gluing surfaces so that they are free from grease, then apply a continuous line of adhesive, about 4 mm (1/8 inch) wide, to the lower shell only.



6. Now place the upper shell on top.



7. Immediately apply all the clamps at the positions provided for them, and allow the glue to harden for **20 minutes**.



8. Prepare the enclosed foam kit according to the instructions and pour the foam into the shell.



10. Allow at least **5 min**, seal with the rubber stoppers..

Not applicable for CALPEX®-QUADRIGA!

# PRESSURE TEST SHEET

COPY FORM

## Pressure test sheet:

Test in line with DIN 1988 Part 2

Medium: Water

### 1. Installation details

Building project: \_\_\_\_\_

Property owner: \_\_\_\_\_

Street / house number: \_\_\_\_\_

Postcode/town: \_\_\_\_\_

### 2. Preliminary test

- 2.1 Test pressure: \_\_\_\_\_ bar (recommended 1.5 times operating pressure)  
2.2 Current pressure after 10 min. \_\_\_\_\_ bar (recreate test pressure)  
2.3 Current pressure after 20 min. \_\_\_\_\_ bar (recreate test pressure)  
2.4 Current pressure after 30 min. \_\_\_\_\_ bar  
2.5 Current pressure after 60 min. \_\_\_\_\_ bar (permissible fall in pressure < 0.6 bar)

### 3. Main test

- 3.1 Test pressure \_\_\_\_\_ bar (result of the preliminary test as per point 2.5)  
3.2 Current pressure after 2 hours \_\_\_\_\_ bar (permissible fall in pressure < 0.2 bar)  
3.3 Comments on test: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Check whole installation, particularly junction points, with regard to leak-tightness using a visual test.  
Water should not leak out at any point on the installation, particularly at the junction points.  
The maximum permissible operating pressure to DIN 16892/93 may not be exceeded during the test.

### 4. Confirmation

For the customer: \_\_\_\_\_

For the contractor: \_\_\_\_\_

Location: \_\_\_\_\_ Date: \_\_\_\_\_

Attachments: \_\_\_\_\_

# Request per fax



Have you got projects where you can use CALPEX®?

Then copy this page, fill it in and fax it to us. There are many other pipe solutions available on request.

Telefax from:

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To:



**Brugg Rohrsystem AG**

Industriestrasse 39  
CH-5314 Kleindöttingen  
phone +41 (0)56 268 78 78  
fax +41 (0)56 268 78 79

**BRUGG Rohrssysteme GmbH**

Adolf-Oesterheld-Straße 31  
D-31515 Wunstorf  
phone +49 (0)50 31 170-0  
fax +49 (0)50 31 170-170

Medium: \_\_\_\_\_ Temperature: \_\_\_\_\_

Pressure: \_\_\_\_\_ Flow quantity: \_\_\_\_\_  $\Delta T$ : \_\_\_\_\_

## I would like to receive further information:

### Product specification:

- preinsulated
- with leak detection
- with heating cable
- with explosion protection
- double-walled

### Laying:

- in the earth
- in the house
- in the installation channel
- under the bridge
- in the tunnel

**BRUGG Rohrssysteme file:**

Technical information and project references about BRUGG Rohrssysteme

### Folder requirement:

**PREMANT®**

rigid pipes, can be used freely in any combination

**FLEXWELL®**

flexibel, self-compensating up to DN 15

**CASAFLEX®**

flexibel, with alarm wires up to DN 100

**EIGERFLEX®**

flexible, frost-protected pipe system

**EIGERFLEX® Klima**

flexible pipe systems for air conditioning systems

**LUNARFLEX®**

flexible pipe systems for solar collectors



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