

UNIVERSA 5 layer-pipe

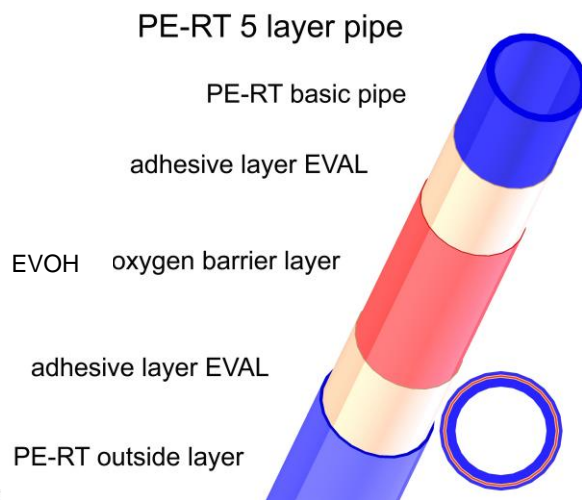
UNIVERSA 5 layer-pipe is a „high-security-pipe “consisting of:

- a Polyethylene basic-pipe with raised temperature resistance
- adhesive
- EVOH oxygen barrier
- adhesive
- Polyethylene outside- layers a protection against damaging of oxygen barrier.

Universa PE-RT pipe is resistant against high temperature (up to 70°C), oxygen tightness (DIN 4726) and high flexibility.

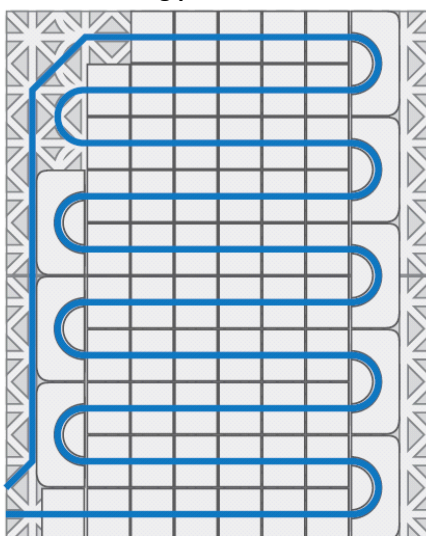
The red PE-RT- 5 layer-pipe is specialised for using floor- and wall heating system, concrete core cooling, free panel heating, industrial panel heating.

The blue PE-RT- 5 layer-pipe will be installed for ceiling cooling systems and for a UNIVERSA energy renovation system.

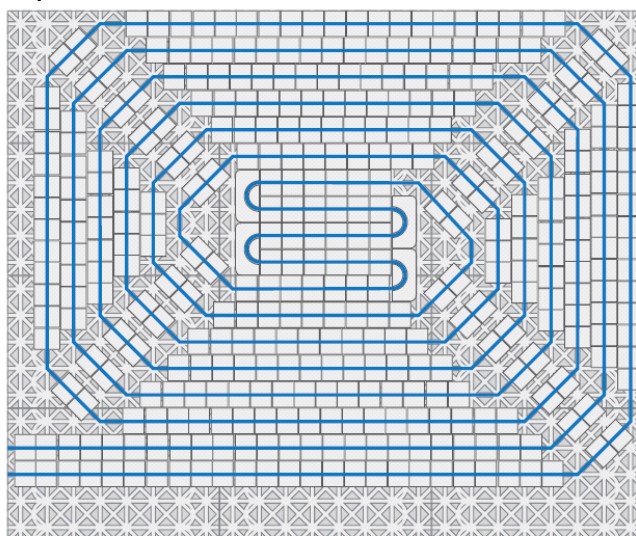


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a meandering pattern installation



a spiral installation



technical Data	8x1,0	14x2,0	16x2,0	17x2,0	18x2,0
material	PE-RT Polyethylen temp.stabilized	PE-RT Polyethylen temp.stabilized	PE-RT Polyethylen temp.stabilized	PE-RT Polyethylen temp.stabilized	PE-RT Polyethylen temp.stabilized
ordering designation	PE-RT 8x1,0	PE-RT 14x2	PE-RT 16x2	PE-RT 17x2	PE-RT 18x2
type	5-layer plastic pipe	5-layer plastic pipe	5-layer plastic pipe	5-layer plastic pipe	5-layer plastic pipe
outer diameter [mm]	8	14	16	17	18
wall thickness [mm]	1,0	2,0	2,0	2,0	2,0
inner diameter [mm]	6	10	12	13	14
pipe weight [g/lfm]	21	80	90	100	104
weight with water [g/lfm]	50	158	203	233	258
internal volume [l/m]	0,028	0,078	0,113	0,133	0,154
expansion coefficient [mm/mK]	0,19	0,19	0,19	0,19	0,19
thermal conductivity [W/mK] average	0,35	0,35	0,35	0,35	0,35
oxygen diffusion [mg/lđ]	<0,1	<0,1	<0,1	<0,1	<0,1
max. operating temp. [°C]	60	70	70	70	70
max. operating pressure [bar] at 70°C	4	6	6	6	6
malfunction temp.	90	90	90	90	90
density [g/cm³]	0,933	0,933	0,933	0,933	0,933
bending radius *	5 x od	5 x od	5 x od	5 x od	5 x od
colour	nature / colour	nature / colour	nature / colour	nature / colour	nature / colour
delivery length [m]	100 to 600	100 to 600	100 to 600	100 to 600	100 to 600
layer- structure	PE-RT Adhesive oxygen barrier Adhesive PE-RT	PE-RT Adhesive oxygen barrier Adhesive PE-RT	PE-RT Adhesive oxygen barrier Adhesive PE-RT	PE-RT Adhesive oxygen barrier Adhesive PE-RT	PE-RT Adhesive oxygen barrier Adhesive PE-RT
application	Panel heating	Panel heating	Panel heating	Panel heating	Panel heating

* od = outside diameter

technical Data	20x2,0	25x2,3
material	PE-RT Polyethylen temp.stabilized	PE-RT Polyethylen temp.stabilized
ordering designation	PE-RT 20x2	PE-RT 25x2,3
type	5-layer plastic pipe	5-layer plastic pipe
outer diameter [mm]	20	25
wall thickness [mm]	2,0	2,3
inner diameter [mm]	16	20,4
pipe weight [g/lfm]	120	165
weight with water [g/lfm]	321	492
internal volume [l/m]	0,201	0,327
expansion coefficient [mm/mK]	0,19	0,19
thermal conductivity [W/mK] average	0,35	0,35
oxygen diffusion [mg/lid]	<0,1	<0,1
max. operating temp. [°C]	70	60
max. operating pressure [bar] at 70°C	6	4
malfunction temp.	90	90
density [g/cm³]	0,933	0,933
bending radius *	5 x od	5 x od
colour	nature / colour	nature / colour
delivery length [m]	240/480/600	280
layer- structure	PE-RT Adhesive oxygen barrier Adhesive PE-RT	PE-RT Adhesive oxygen barrier Adhesive PE-RT
application	Panel heating	Panel heating