Uponor Ecoflex Thermo and Aqua VIP

System description
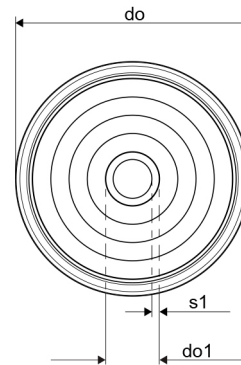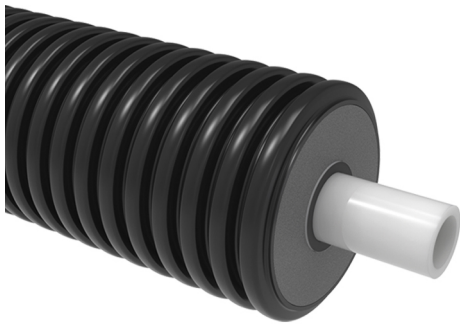

RP0000132

Item	Description
A	Jacket Corrugated polyethylene (PE-HD)
B	Insulation material Closed-cell, cross-linked polyethylen (PE-X) foam
C	Insulation material VIP (Vacuum Insulation Panel)
D	Medium pipe - Cross-linked polyethylene (PE-Xa) pipes according to EN 15875 - Pipes for heating and cooling with EVOH layer
E	Coloured centering profile (only Twin version)

The Uponor Ecoflex Thermo and Aqua VIP "Vacuum Insulation Panel" are part of Uponor's Ecoflex range of flexible, pre-insulated piping. The flexibility of the material, the convenient connecting methods and the well-attested service life contribute to projects being completed quickly, economically and reliably. Features like the corrugated jacket and the layer of cross-linked PE foam together with the VIP insulation material provide an optimal solution for energy efficient distribution networks. The system has a great variety of applications from an extensive supply network to a single connection for one building. Hot water, warm tap water or cooling water are transported as reliably as many other liquid media in industrial settings.

Uponor Ecoflex Thermo and Aqua VIP are designed and manufactured in accordance with the requirements of EN 15632-1 and -3.
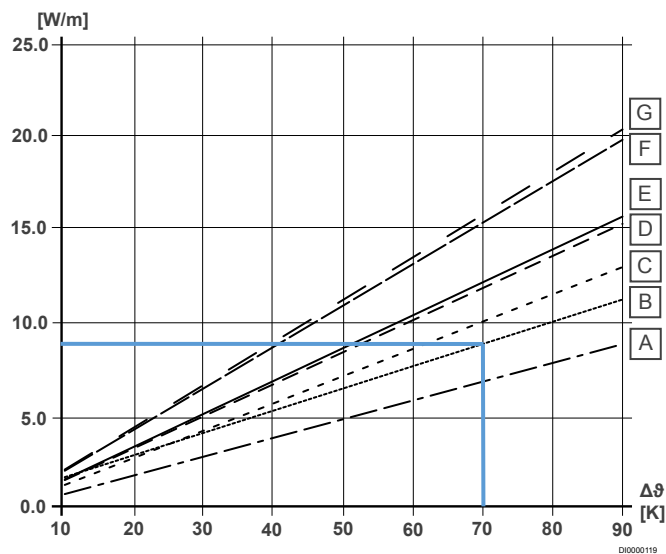
Uponor Ecoflex Thermo VIP Single PN6 (SDR11)

Type	Medium pipe do1 x s1 [mm]	Jacket pipe [mm]	Bending radius [m]	Weight empty [kg/m]	Volume Medium pipe [l/m]	Coil length [m]
40/140	40 x 3.7	140	0.35	1.67	0.83	200
50/140	50 x 4.6	140	0.40	1.93	1.31	200
63/140	63 x 5.8	140	0.50	2.35	2.07	200
75/140	75 x 6.8	140	0.60	2.73	2.96	200
90/175	90 x 8.2	175	0.70	4.00	4.25	100
110/175	110 x 10.0	175	0.90	5.08	6.36	100
125/200	125 x 11.4	200	1.30	6.65	8.20	120

Operating temperature: 80 °C (30 years), maximum 95 °C   Operating pressure: 6 bar

Heat loss

Example calculation

ϑ_M = Temperature medium = 75 °C
ϑ_E = Temperature Ground = 5 °C
$\Delta\vartheta$ = Temperature difference [K]
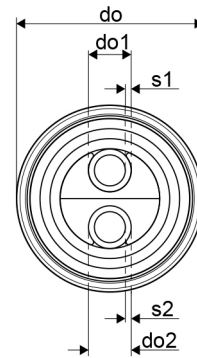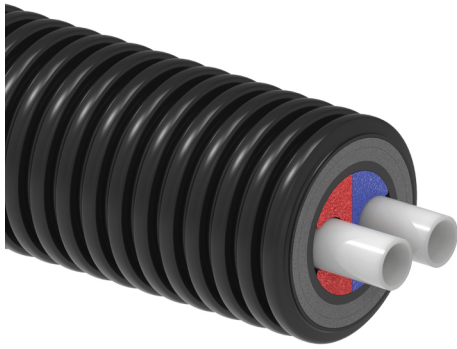
$\Delta\vartheta = \vartheta_M - \vartheta_E$

75 °C - 5 °C = 70 K

Heat loss: 8.5 W/m

			Heat loss [W/m] for corresponding temperature difference $\Delta\vartheta$ [K]						
Item	Type	U-value [W/m·K]	30	40	50	60	70	80	90
A	40/140	0.104	3.11	4.14	5.18	6.22	7.25	8.29	9.32
B	50/140	0.122	3.65	4.86	6.08	7.30	8.51	9.73	10.94
C	63/140	0.146	4.37	5.82	7.28	8.74	10.19	11.65	13.10
D	75/140	0.171	5.14	6.85	8.57	10.28	11.99	13.70	15.42
E	90/175	0.176	5.27	7.02	8.78	10.54	12.29	14.05	15.80
F	110/175	0.221	6.64	8.85	11.06	13.27	15.48	17.70	19.91
G	125/200	0.227	6.82	9.09	11.37	13.64	15.91	18.18	20.46

U-value and heat loss calculation parameters according to EN 15632-1 Annex B.
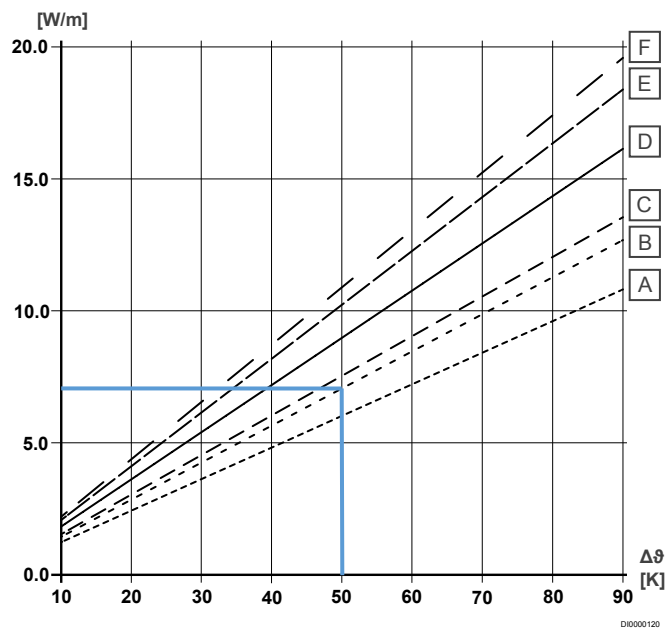
Uponor Ecoflex Thermo VIP Twin PN6 (SDR11)

Type	Medium pipe do1 x s1 [mm]	Medium pipe do2 x s2 [mm]	Jacket pipe do [mm]	Bending radius [m]	Weight empty [kg/m]	Volume Medium pipe [l/m]	Coil length [m]
2x 25/140	25 x 2.3	25 x 2.3	140	0.40	1.70	2x 0.33	200
2x 32/140	32 x 2.9	32 x 2.9	140	0.50	1.91	2x 0.54	200
2x 40/175	40 x 3.7	40 x 3.7	175	0.80	2.90	2x 0.83	200
2x 50/175	50 x 4.6	50 x 4.6	175	0.90	3.44	2x 1.31	200
2x 63/200	63 x 5.8	63 x 5.8	200	1.20	4.88	2x 2.07	100
2x 75/250	75 x 6.8	75 x 6.8	250	1.40	6.77	2x 2.96	100

Operating temperature: 80 °C (30 years), maximum 95 °C   Operating pressure: 6 bar

Heat loss

Example calculation

ϑ_v = Flow temperature
ϑ_R = Return temperature
ϑ_E = Temperature Ground
$\Delta\vartheta$ = Temperature difference (K)

$\Delta\vartheta = (\vartheta_v + \vartheta_R)/ 2 - \vartheta_E$

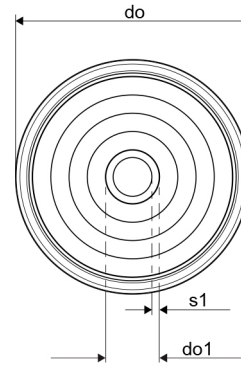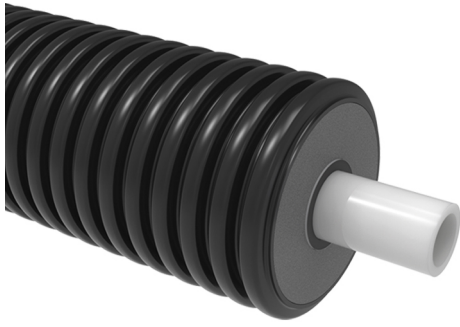(70 °C + 40 °C)/ 2 - 5 °C = 50 K

Heat loss: 7 W/m

Item	Type	U-value [W/m·K]	Heat loss [W/m] for corresponding temperature difference Δϑ [K]						
			30	40	50	60	70	80	90
A	2x25/140	0.120	3.59	4.79	5.99	7.19	8.39	9.58	10.78
B	2x32/140	0.141	4.22	5.62	7.03	8.44	9.84	11.25	12.65
C	2x40/175	0.150	4.51	6.01	7.51	9.01	10.51	12.02	13.52
D	2x50/175	0.179	5.37	7.16	8.95	10.74	12.53	14.32	16.11
E	2x63/200	0.204	6.12	8.16	10.20	12.24	14.28	16.32	18.36
F	2x75/200	0.218	6.53	8.71	10.89	13.06	15.24	17.42	19.59

U-value and heat loss calculation parameters according to EN 15632-1 Annex B.
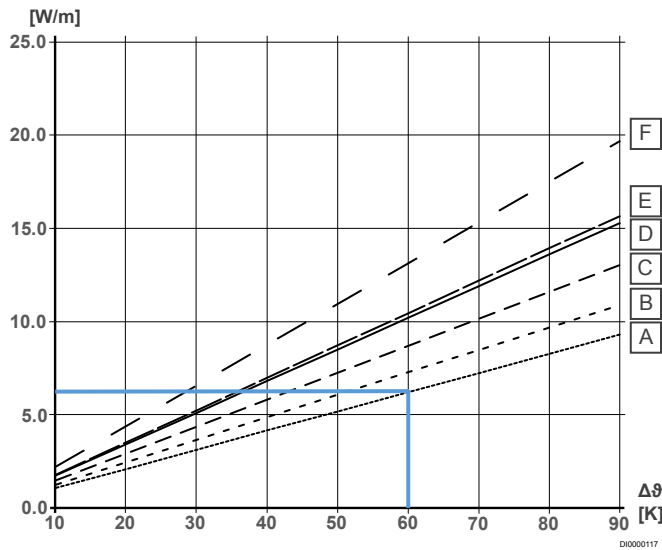
Ecoflex Aqua VIP Single PN10 (SDR 7.4)

Type	Medium pipe do1 x s1 [mm]	Jacket pipe do [mm]	Bending radius [m]	Weight empty [kg/m]	Volume Medium pipe [l/m]	Coil length [m]
40/140	40 x 5.5	140	0.40	1.84	0.66	200
50/140	50 x 6.9	140	0.45	2.19	1.03	200
63/140	63 x 8.6	140	0.55	2.76	1.65	200
75/140	75 x 10.3	140	0.70	3.33	2.32	100
90/175	90 x 12.3	175	0.80	4.88	3.36	100
110/175	110 x 15.1	175	1.00	6.33	5.00	100

Operating temperature: 70 °C (50 years), maximum 95 °C   Operating pressure: 10 bar

Heat loss

ϑ_M = Temperature medium = 65 °C
ϑ_E = Temperature Ground = 5 °C
$\Delta\vartheta$ = Temperature difference [K]

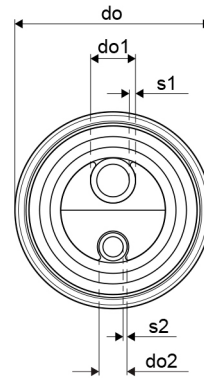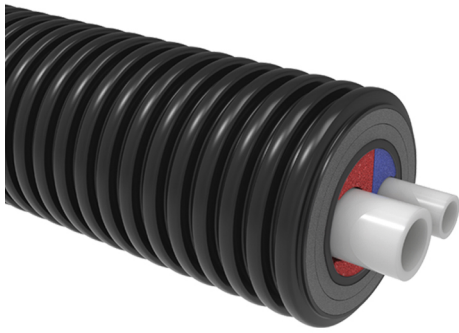$\Delta\vartheta = \vartheta_M - \vartheta_E$

65 °C - 5 °C = 60 K

Heat loss: 6.18 W/m

Item	Type	U-value [W/m·K]	Heat loss [W/m] for corresponding temperature difference $\Delta\vartheta$ [K]						
			30	40	50	60	70	80	90
A	40/140	0.103	3.09	4.12	5.15	6.18	7.21	8.24	9.27
B	50/140	0.121	3.62	4.83	6.04	7.25	8.46	9.66	10.87
C	63/140	0.145	4.34	5.78	7.23	8.67	10.12	11.56	13.01
D	75/140	0.170	5.09	6.79	8.49	10.18	11.88	13.58	15.27
E	90/175	0.174	5.22	6.96	8.70	10.43	12.17	13.91	15.65
F	110/175	0.219	6.56	8.74	10.93	13.11	15.30	17.48	19.67

U-value and heat loss calculation parameters according to EN 15632-1 Annex B.
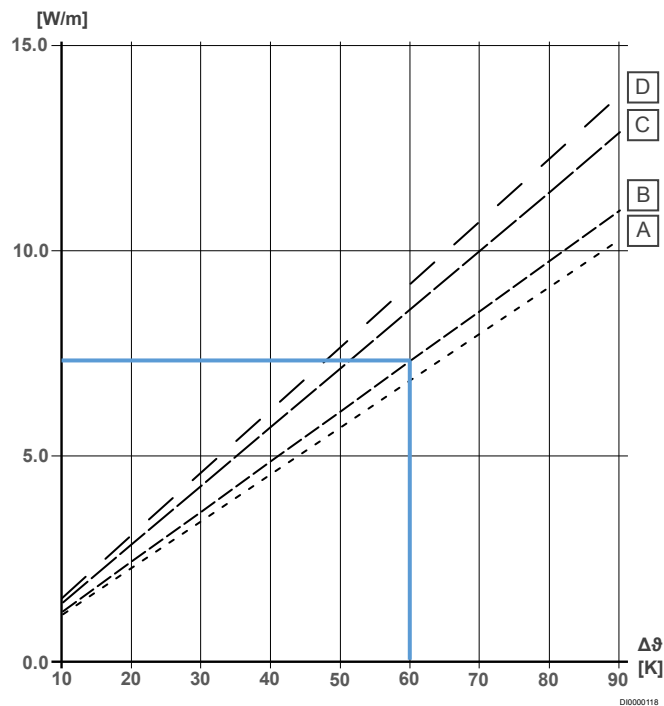
Ecoflex Aqua VIP Twin PN10 (SDR 7.4)

RP0000141

Type	Medium pipe do1 x s1 [mm]	Medium pipe do2 x s2 [mm]	Jacket pipe do [mm]	Bending radius [m]	Weight empty [kg/m]	Volume Medium pipe [l/m]	Coil length [m]
25-20/140	25 x 3.5	20 x 2.8	140	0.45	1.74	0.37	200
32-20/140	32 x 4.4	20 x 2.8	140	0.55	1.88	0.51	200
40-25/140	40 x 5.5	25 x 3.5	140	0.70	2.18	0.80	200
50-32/175	50 x 6.9	32 x 4.4	175	0.80	3.36	1.27	200

Operating temperature: 70 °C (50 years), maximum 95 °C   Operating pressure: 10 bar

Heat loss

ϑ_v = Flow temperature = 65 °C

ϑ_R = Return temperature = 55 °C

ϑ_E = Temperature Ground = 0 °C

$\Delta\vartheta$ = Temperature difference (K)

$\Delta\vartheta = (\vartheta_v + \vartheta_R)/ 2 - \vartheta_E$

(65 °C + 55 °C)/ 2 - 0 °C = 60 K

Heat loss: 7.32 W/m

			Heat loss [W/m] for corresponding temperature difference Δϑ [K]						
Item	Type	U-value [W/m·K]	30	40	50	60	70	80	90
A	25-20/140	0.114	3.43	4.57	5.71	6.85	7.99	9.14	10.28
B	32-20/140	0.122	3.66	4.88	6.10	7.32	8.54	9.76	10.98
C	40-25/140	0.143	4.29	5.72	7.16	8.59	10.02	11.45	12.88
D	50-32/175	0.153	4.59	6.12	7.65	9.18	10.71	12.24	13.77

U-value and heat loss calculation parameters according to EN 15632-1 Annex B.

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