

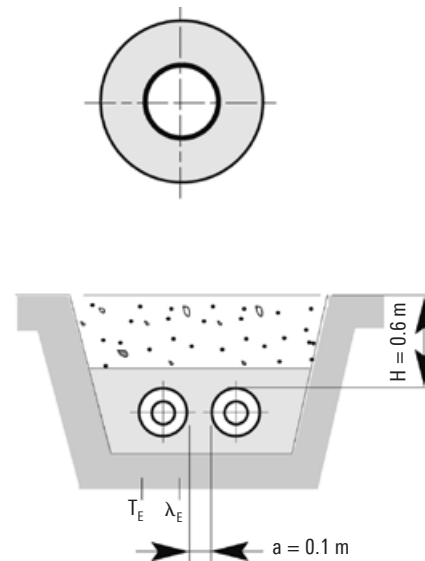
Heat loss

CASAFLEX® UNO

Heat loss q [W/m] for one UNO pipe

CASAFLEX® UNO	U-value [W/mK]	Average operating temperature T _B [°C]									
		40°	50°	60°	70°	80°	90°	100°	110°	120°	130°
22/ 91	0.113	3.4	4.5	5.7	6.8	7.9	9.0	10.2	11.3	12.4	13.5
30/ 91	0.143	4.3	5.7	7.1	8.6	10.0	11.4	12.6	14.3	15.7	17.2
30/111	0.123	3.7	4.9	6.1	7.3	8.5	9.8	11.0	12.2	13.4	14.6
39/111	0.153	4.6	6.1	7.6	9.2	10.7	12.2	13.8	15.3	16.8	18.4
39/126	0.137	4.1	5.5	6.8	8.2	9.6	10.9	12.3	13.6	15.9	16.4
48/111	0.197	5.9	7.9	9.8	11.8	13.8	15.8	17.7	19.7	21.7	23.6
48/126	0.170	5.1	6.8	8.5	10.2	11.8	13.5	15.2	16.9	18.6	20.3
60/126	0.217	6.5	8.7	10.8	13.0	15.2	17.4	19.5	21.7	23.9	26.0
60/142	0.187	5.6	7.4	9.3	11.2	13.0	14.9	16.8	18.6	20.5	22.4
75/142	0.266	8.0	10.6	13.3	15.9	18.6	21.3	23.9	26.6	29.2	31.9
75/162	0.218	6.5	8.7	10.9	13.0	15.2	17.4	19.5	21.7	23.9	26.1
98/162	0.355	10.1	13.4	16.8	20.1	23.5	26.8	30.2	33.5	36.9	40.2
98/182	0.258	7.7	10.3	12.9	15.5	18.1	20.5	23.2	25.8	28.4	31.0
127/202	0.366	11.0	14.7	18.3	22.0	25.6	29.3	33.0	36.6	40.3	44.0
127/225*	0.334	10.2	13.4	16.7	20.1	23.4	26.8	30.1	33.4	36.8	40.1

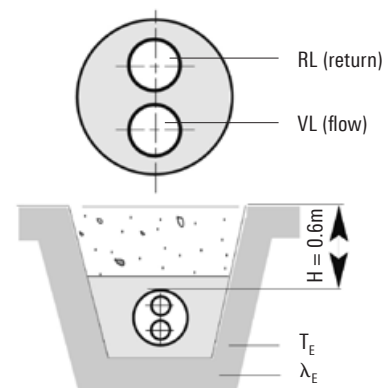
* on request



CASAFLEX® DUO

Heat loss q [W/m] for one DUO pipe

CASAFLEX® DUO	U-value [W/mK]	Average operating temperature T _B [°C]									
		40°	50°	60°	70°	80°	90°	100°	110°	120°	130°
22 + 22/111	0.156	4.7	6.2	7.8	9.4	10.9	12.5	14.0	15.6	17.2	18.7
30 + 30/126	0.181	5.4	7.2	9.0	10.9	12.7	14.5	16.3	18.1	19.9	21.7
39 + 39/142	0.224	6.7	8.9	11.2	13.4	15.7	17.9	20.2	22.4	24.6	26.9
48 + 48/162	0.251	7.5	10.0	12.5	15.0	17.6	20.1	22.6	25.1	27.6	30.1
60 + 60/182	0.293**	8.8	11.7	14.7	17.6	20.5	23.4	26.4	29.3	32.2	35.2
60 + 60/225	0.215	6.5	8.6	10.8	12.9	15.1	17.2	19.4	21.5	23.7	25.8



Pipe distance: a = 0.10 m
 Coverage height: H = 0.60 m
 Ground temperature: T_E = 10 °C
 Soil conductivity: λ_E = 1.2 W/mK
 Conductivity of PIR foam: λ_{PIR} = 0.0250 W/mK at average temperature of 50 °C
 **Conductivity of PUR foam: λ_{PIR} = 0.0237 W/mK at average temperature of 50 °C
 Conductivity of PE casing: λ_{PE} = 0.43 W/mK

Heat loss during operation:
 $q = U (T_B - T_E)$ [W/m]
 U = Heat transfer coefficient [W/mK]
 T_B = Average operating temperature [°C]
 T_E = Average ground temperature [°C]
 VL = Flow
 RL = Return