

COOLMANT

Energy losses

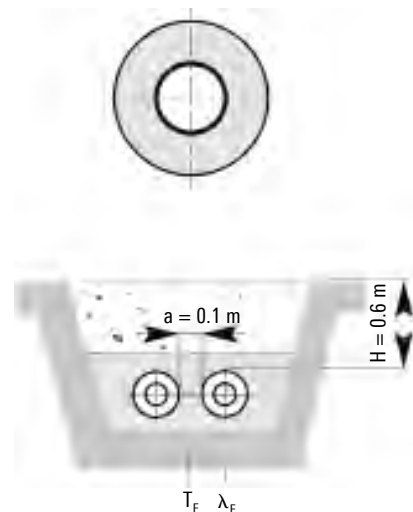
Applications laid in the ground

Dimensions Ø 125 - 315 mm / SDR 11

Heat losses q [W/m]						
COOLMANT	U-value [W/mK]	Average operating temperature T _B [°C]				
		6°	8°	10°	12°	14°
125/225 - SDR 11	0.233	-0.9	-0.5	0.0	0.5	0.9
140/225 - SDR 11	0.282	-1.1	-0.6	0.0	0.6	1.1
160/250 - SDR 11	0.299	-1.2	-0.6	0.0	0.6	1.2
180/280 - SDR 11	0.303	-1.2	-0.6	0.0	0.6	1.2
200/315 - SDR 11	0.296	-1.2	-0.6	0.0	0.6	1.2
225/315 - SDR 11	0.385	-1.5	-0.8	0.0	0.8	1.5
250/355 - SDR 11	0.373	-1.5	-0.7	0.0	0.7	1.5
280/400 - SDR 11	0.366	-1.5	-0.7	0.0	0.7	1.5
315/450 - SDR 11	0.370	-1.5	-0.7	0.0	0.7	1.5

Dimensions Ø 125 - 315 mm / SDR 17

Heat losses q [W/m]						
COOLMANT	U-value [W/mK]	Average operating temperature T _B [°C]				
		6°	8°	10°	12°	14°
125/225 - SDR 17	0.234	-0.9	-0.5	0.0	0.5	0.9
140/225 - SDR 17	0.284	-1.1	-0.6	0.0	0.6	1.1
160/250 - SDR 17	0.301	-1.2	-0.6	0.0	0.6	1.2
180/280 - SDR 17	0.305	-1.2	-0.6	0.0	0.6	1.2
200/315 - SDR 17	0.299	-1.2	-0.6	0.0	0.6	1.2
225/315 - SDR 17	0.389	-1.6	-0.8	0.0	0.8	1.6
250/355 - SDR 17	0.378	-1.5	-0.8	0.0	0.8	1.5
280/400 - SDR 17	0.373	-1.5	-0.7	0.0	0.7	1.5
315/450 - SDR 17	0.374	-1.5	-0.7	0.0	0.7	1.5



Installation type CLM:	2-pipe, laid in the ground
Pipe distance:	a = 0.10 m
Covera above pipe:	H = 0.60 m
Ground temperature:	T _E = 10.00 °C
Soil conductivity:	λ _E = 1.2 W/mK
Conductivity of PUR foam:	λ _{PU} = 0.024 W/mK
Conductivity of PE pipe:	λ _{PU} = 0.40 W/mK
Conductivity of PE casing:	λ _{PU} = 0.33 W/mK

Heat loss during operation:

$$q = U (T_B - T_E) \text{ [W/m]}$$

U = Heat transfer coefficient [W/mK]

T_B = Average operating temperature [°C]

T_E = Average ground temperature [°C]

VL = Flow

RL = Return

On request, we shall be glad to calculate the heat losses for surface mounted pipe systems.