

3.3 STATIČNI IZRAČUN CEVI

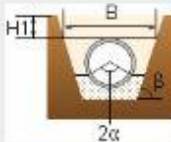
3.3.1 PP cev DN 250 SN 10, minimalno kritje

Pipe

☒ Standard smooth pipe
Material PP
Outside diameter 250 [mm]
Wall thickness 14.8 [mm]
☐ Pragma pipe

Configuration

B 1 [m]
H1 0.89 [m]
 β 90 [°]
Bedding angle 2α 120°
Soil density ρ 30 [kN/m³]



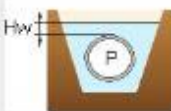
Soil configuration (backfill and sidewalls)

Backfill installation type Compacted backfill in all the height of the trench
Backfill soil type Group 3 - mixed cohesive
Backfill compaction 95%
Sidewalls soil type Group 1 - non cohesive
Sidewalls compaction 85%

[Advice](#)

Ground water/internal pressure

☒ Ignore ground water/internal pressure
Ground water height 2 [m]
Internal pressure 0 [bar]

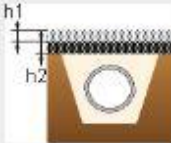


Traffic

☒ Ignore traffic
Truck LT 12 - 12 tons, 2 axles
Frequency Normal

Paving

☒ Ignore paving
h1 0.2 [m]
Ep1 2000 [MPa]
h2 0.2 [m]
Ep2 1000 [MPa]



[Advice](#)

Vertical pressure caused by soil load		Short term	Long term	
Soil load	q_v	20.1	16.0	[kN/m ²]
Concentrated surcharges	P_{vc}	0.000	0.000	[kN/m ²]
Deformation		Short term	Long term	
Displacement	ΔD_v	0.891	1.18	[mm]
Deformation	δ_v	0.379	0.502	[%]
	δ_v	<5% OK	<5% OK	
Maximum tangential stress		Short term	Long term	
Top	σ	0.978	0.352	[MPa]
Side	σ	0.755	0.197	[MPa]
Base	σ	1.13	0.480	[MPa]
Material strength	σ	35.0 OK	20.0 OK	[MPa]
Crack safety coefficient		Short term	Long term	
Top	η_1	35.8	56.8	
Side	η_1	46.4	102	
Base	η_1	31.1	41.7	
Material safety coefficient	η_1	2.00 OK	2.00 OK	

3.3.2 PP cev DN 250 SN 10, maksimalno kritje

Pipe

☒ Standard smooth pipe

Material

PP ▼

Outside diameter

250 [mm]

Wall thickness

14.8 [mm]

☐ Pragma pipe

Configuration

B

1 [m]

H1

5.4 [m]

β

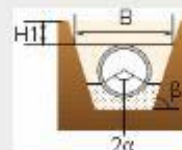
90 [°]

Bedding angle 2α

120° ▼

Soil density ρ

30 [kN/m³]



Soil configuration (backfill and sidewalls)

Backfill installation type

Compacted backfill in all the height of the trench ▼

Backfill soil type

Group 3 - mixed cohesive ▼

Backfill compaction

95% ▼

Sidewalls soil type

Group 1 - non cohesive ▼

Sidewalls compaction

85% ▼

[Advice](#)

Ground water/internal pressure

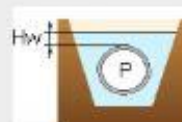
☐ Ignore ground water/internal pressure

Ground water height

2 [m]

Internal pressure

0 [bar]



Traffic

☒ Ignore traffic

Truck

LT 12 - 12 tons, 2 axles ▼

Frequency

Normal ▼

Paving

☒ Ignore paving

h1

0.2 [m]

Ep1

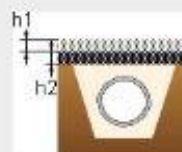
2000 [MPa]

h2

0.2 [m]

Ep2

1000 [MPa]



[Advice](#)

Vertical pressure caused by soil load		Short term	Long term	
Soil load	qv	53.0	39.8	[kN/m ²]
Concentrated surcharges	Pvc	0.000	0.000	[kN/m ²]
Deformation		Short term	Long term	
Displacement	ΔD_v	2.32	2.81	[mm]
Deformation	δ_v	0.988	1.20	[%]
	δ_v	<5%	<5%	
		OK	OK	
Maximum tangential stress		Short term	Long term	
Top	σ	2.20	0.511	[MPa]
Side	σ	1.83	0.159	[MPa]
Base	σ	2.52	0.760	[MPa]
Material strength	σ	35.0	20.0	[MPa]
		OK	OK	
Crack safety coefficient		Short term	Long term	
Top	η_1	15.9	39.1	
Side	η_1	21.4	128	
Base	η_1	13.9	26.3	
Material safety coefficient	η_1	2.00	2.00	
		OK	OK	

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