3.2.3 STATIČNI IZRAČUN CEVI

PP cev DN 200 SN 12, minimalno kritje

Pipe

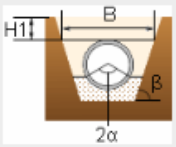
◉ Standard smooth pipe

Material	PP	
Outside diameter	200	[mm]
Wall thickness	7.5	[mm]

○ Pragma pipe

Configuration

B	1.3	[m]
H1	1	[m]
β	90	[°]
Bedding angle 2α	90°	
Soil density ρ	30	[kN/m³]



Soil configuration (backfill and sidewalls)

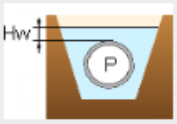
Backfill installation type	Compacted backfill in all the height of the trench
Backfill soil type	Group 1 - non cohesive
Backfill compaction	97%
Sidewalls soil type	Group 1 - non cohesive
Sidewalls compaction	92%

Advice

Ground water/internal pressure

☑ Ignore ground water/internal pressure

Ground water height	1	[m]
Internal pressure	2	[bar]



Traffic

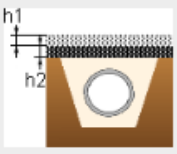
☐ Ignore traffic

Truck	LT 12 - 12 tons, 2 axles
Frequency	Irregular

Paving

☑ Ignore paving

h1	0.2	[m]
Ep1	2000	[MPa]
h2	0.2	[m]
Ep2	1000	[MPa]



Advice

Static calculation of pipes

English

This tool calculates static loads and deformations on smooth pipes, according to **UNE 53331 IN**. Pipelife recommends using the last version of EasyPipe98 from IngSoft GmbH for calculations according the latest version of ATV-DVWK-A 127.

Vertical pressure caused by soil load		Short term	Long term	
Soil load	qv	17.8	14.4	[kN/m²]
Concentrated surcharges	Pvc	15.0	15.0	[kN/m²]

Deformation		Short term	Long term	
Displacement	ΔDv	0.710	1.45	[mm]
Deformation	δv	0.369	0.755	[%]
	δv	<5%	<5%	
		OK	OK	

Maximum tangential stress		Short term	Long term	
Top	σ	4.65	4.56	[MPa]
Side	σ	4.07	4.12	[MPa]
Base	σ	6.06	5.84	[MPa]
Material strength	σ	35.0	20.0	[MPa]
		OK	OK	

Crack safety coefficient		Short term	Long term	
Top	η_1	7.53	4.39	
Side	η_1	8.60	4.86	
Base	η_1	5.77	3.42	
Material safety coefficient	η_1	2.00	2.00	
		OK	OK	