

# Questionnaire on the Structural Sizing of Buried Pipelines in Accordance with DWA A-127

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## Your details

Project: \_\_\_\_\_

Company: \_\_\_\_\_ Contact person: \_\_\_\_\_

Street: \_\_\_\_\_ Town/ZIP: \_\_\_\_\_

Phone no.: \_\_\_\_\_ E-mail: \_\_\_\_\_

## Pipe

Nominal dia. DN: \_\_\_\_\_ Pipe material: \_\_\_\_\_

Outside diameter: d \_\_\_\_\_ [mm] Service temp.: \_\_\_\_\_ [°C]

Wall thickness: e \_\_\_\_\_ [mm] Medium: \_\_\_\_\_

## Perforation

Unperforated       Slotted       Perforated

1/3 perforated (crown)      Slot/hole pitch: \_\_\_\_\_ [mm]

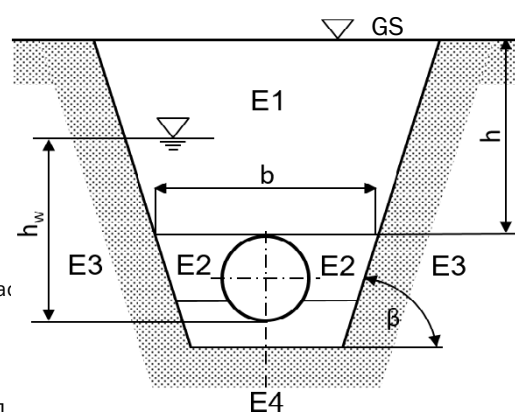
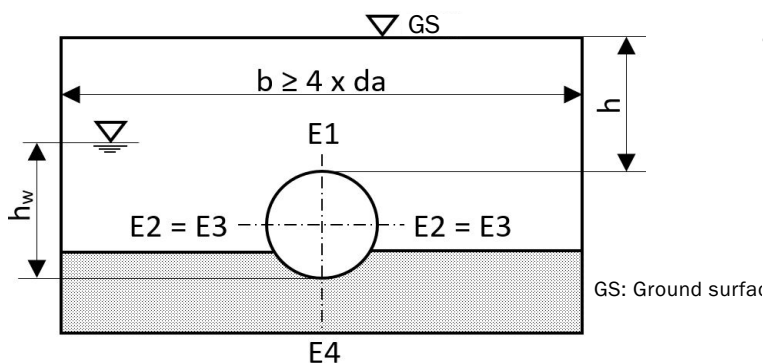
2/3 perforated (crown, side)      Slot width/hole diameter: \_\_\_\_\_ [mm]

Completely perforated      Number of hole rows: \_\_\_\_\_ [pc]

## Laying conditions

Embankment condition

Trench condition



Trench width at pipe crown height b: \_\_\_\_\_ [mm]

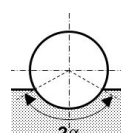
Cover height h: min. \_\_\_\_\_ [mm]  
max. \_\_\_\_\_ [mm]

Spec. weight of covering \_\_\_\_\_ [kN/m<sup>3</sup>]

Angle of slope  $\beta$ :  45°  60°  90°

Type of support:  Gravelly sand  Liquid soil  Natural soil

Support angle  $2\alpha$ :  90°  120°  180°



## Soil characteristics

	Soil group	Proctor density	Modulus of deformation
Cover fill E1	G _____	$D_{Pr}$ _____ [%]	$E_{v1}$ : _____ [N/mm <sup>2</sup> ]
Pipe zone E2	G _____	$D_{Pr}$ _____ [%]	$E_{v2}$ : _____ [N/mm <sup>2</sup> ]
In situ soil E3	G _____	$D_{Pr}$ _____ [%]	$E_{v3}$ : _____ [N/mm <sup>2</sup> ]
Supporting soil E4	G _____	$D_{Pr}$ _____ [%]	$E_{v4}$ : _____ [N/mm <sup>2</sup> ]

G1: non-cohesive soils (GE, GW, GI, SE, SW, SI)

G2: slightly cohesive soils (GU, GT, SU, ST)

G3: cohesive mixed soils, silt (GU\*, GT\*, SU\*, ST\*, UL, UM)

G4: cohesive soils (TL, TM, TA, OU, OT, OH, OK, UA)

DIN 18196
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### Cover fill condition

- A1:** Trench fill compacted against the natural soil in layers (without proof of degree of compaction); also applies to horizontal sheeting (lagging).
- A2:** Vertical sheeting for the trench with trench piling which is only removed after filling. Bracing boards or devices which are removed step by step as the trench is filled. Uncompacted trench fill. Jetting in of fill (only suitable for soils in group G1).
- A3:** Vertical sheeting for the trench with sheet pile walls, light sheet pile walls, planking, bracing boards or devices which are only removed after filling.
- A4:** Trench fill compacted against the natural soil in layers with proof of degree of compaction; also applies to horizontal sheeting (lagging). The A4 cover fill condition does not apply to soils in group G4.

### Embedding condition

- B1:** Embedding compacted against the natural soil in layers or in the embankment fill in layers (without proof of degree of compaction); also applies to horizontal sheeting (lagging).
- B2:** Vertical sheeting within the pipe zone with trench piling which extends to the floor of the trench and is only removed after filling and compaction. Bracing boards or devices, provided compaction of the soil takes place after the sheeting is removed.
- B3:** Vertical sheeting within the pipe zone with sheet pile walls or light sheet pile walls and compaction against the sheeting, which extends below the floor of the trench. Vertical sheeting with planking, bracing boards or devices which are only removed from the pipe zone after filling and compaction; it cannot be included in any reliable computational model.
- B4:** Embedding compacted against the natural soil in layers or in the embankment fill in layers, with proof of the degree of compaction. The B4 embedding condition does not apply to soils in group G4.

### Live loads

- Trucks 12t     Trucks 30t     Trucks 60t     LM1     No live load
- Comment: \_\_\_\_\_

### Groundwater above pipe bottom

- Non-existent
- Existent, with min. \_\_\_\_\_ [mm] max. \_\_\_\_\_ [mm] groundwater  $h_w$  above pipe bottom

Please enclose any other information required for calculation separately!

Place, date: \_\_\_\_\_

Signature: \_\_\_\_\_