

Design and Installation of HDPE Twin Wall Pipe

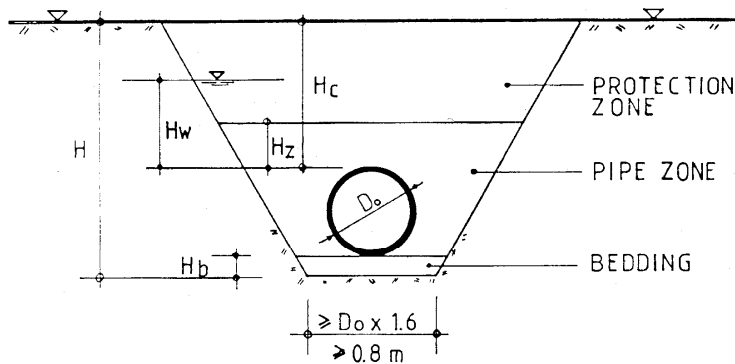
Installation - General

Pipes might be connected pipe by pipe in the trench or as an option connected to length outside the trench and lifted into the final position in one piece, using lifting cranes. This is possible due to the light weight of the pipes.

It has been demonstrated, that pipe stiffness is not the only design factor of buried HDPE pipe systems.

Control of deflection is achieved permanently by control of the earthwork surrounding buried systems. ASTM practice D – 2321 should be followed to achieve this control.

Underground Pipe Installation



$$H_b = 100 \rightarrow 150 \text{ mm}$$

$$H_z = 0.25 \rightarrow 0.50 \text{ m}$$

Bedding zone with minimum 0,1 m thickness, depending on the pipe diameter. Trench width depends on the deepness of the trench and the pipe diameter.

Pipe zone material depending on kind of application.

Calculation of static loads

- ISO 9969
- ATV A 127 (German regulation)

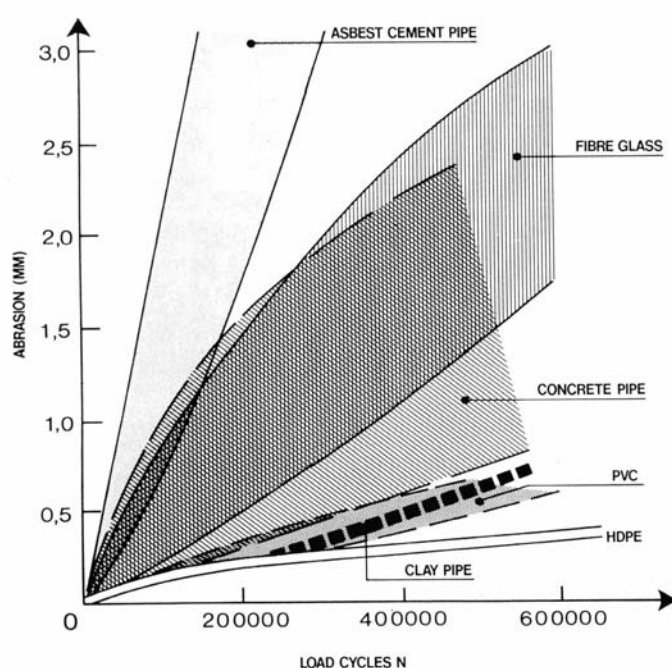
Hydraulic Dimensioning

We propose to use ATV norm A 110 (German regulation) for hydraulic dimensioning.

Wall roughness comparison of several materials

- HDPE 0,007 mm
- Clay 0,05 mm
- Steel 0,5 mm
- Ductile 1,5 mm
- Concrete 3,0 mm

Abrasion Curve



Specific weight comparison

Specific weight comparison of several materials

- HDPE 10 kg/dm³
- PVC 14 kg/dm³
- GRP 18 kg/dm³
- Clay 21 kg/dm³
- Concrete 24 kg/dm³
- Ductile 70 kg/dm³
- Steel 75 kg/dm³

HDPE pipe profile radial elasticity

The perfect elasticity of our pipes can react to settlements in their environment.

Due to the deformation performance, loads are diverted to the pipe surrounding soil and the load acting to the pipe is diminished.

Within a short time the pipe surrounding area will balance and the deformation stops.

Axial elasticity

The outside profile acts as an anchor to the soil. For this reason there are neglectable minor axial extensions of the pipeline. Due to this reason our profile pipes are nearly unaffected by temperature variations.