



**ÚSTÍ NAD ORLICÍ – OBNOVA KANALIZACE
V UL. U HŘIŠTĚ
K.Ú. ÚSTÍ NAD ORLICÍ**

E. 4. Dokladová část – statika potrubí

Zadávací podmínky

Použité potrubí: Ultra Solid Blue Pipe SN 12, DN/OD 500

Krytí nad vrcholem potrubí: 1,5 m

Zatížení provozem: D 400

Hladina spodní vody pod terénem: 1,0 m

Obsypový materiál: lomová prosívka, písek, štěrkopísek

Stupeň zhutnění obsypu: 0,85 ID

Pipeline data

Pipe category: Ultra Solid Blue Pipe

Pipe type: SN12

Nominal pipe diameter (Dn): 500 mm

Internal diameter of pipe (Dw): 467.4 mm

External diameter of pipe (Dz): 500.0 mm

Wall thickness (g): 16,3 mm

Ring stiffness (Sr): 12 kN/m²

Calculation cross-section

Ground level (PT): 0.00 m

Pipe bottom level (PD): -2.00 m

Covering layer (HP): 1.50 m

Pipe installation level (PP): -2.02 m

Ground water level (ZWG): -1.50 m

Geotechnical parameters

Backfill soil type: fine and dusty sands

Soil compaction coefficient (MPD): 0.85

Volumetric weight 17.50 kN/m³

Porosity: 15 %

Secant modulus of strain: 1.09 MPa

Pipe working conditions

Traffic load type: vehicle SLW 60 (acc. DIN)

Solid paving with foundations: NO

Workmanship

Multi-pipeline trench: NO

Heavy construction traffic during installation: NO

Compaction of first layer above the pipe with heavy equipment: NO

Permanent supervision and control of installation: YES

Workmanship quality: NORMAL

Installation factor (If): 0.0 %

Bedding factor (Bf): 2.0 %

PT=0.00

PD=-2.00

ZWG=-1.00

Calculation results

Soil load: 31.24 kPa

Traffic load: 34.79 kPa

Total load: 66.02 kPa

Maximum admissible load: 207.32 kPa

Deflection caused by load: 1.6 %

Deflection caused by bedding and installation 2.0 %

Total deflection: 3.6 %

Maximum admissible deflection: 6.0 %

Max. uplift force: 1.26 kN/m

Min. anchoring force: 8.44 kN/m

Conclusions

The pipe meet structural requirements.

Závěr

Při dodržení zadávacích podmínek potrubí Ultra Solid Blue Pipe, SN 12, DN/OD 500 vyhoví a jeho deformace nepřesáhne hodnotu 3,6 %.

Zadávací podmínky

Použité potrubí: Ultra Solid Blue Pipe SN 12, DN/OD 500

Krytí nad vrcholem potrubí: 1,5 m

Zatížení provozem: D 400

Hladina spodní vody pod terénem: 3,0 m

Obsypový materiál: lomová prosívka, písek, štěrkopísek

Stupeň zhutnění obsypu: 0,85 ID

Pipeline data

Pipe category: Ultra Solid Blue Pipe

Pipe type: SN12

Nominal pipe diameter (Dn): 500 mm

Internal diameter of pipe (Dw): 467.4 mm

External diameter of pipe (Dz): 500.0 mm

Wall thickness (g): 16,3 mm

Ring stiffness (Sr): 12 kN/m²

Calculation cross-section

Ground level (PT): 0.00 m

Pipe bottom level (PD): -2.00 m

Covering layer (HP): 1.50 m

Pipe installation level (PP): -2.02 m

Ground water level (ZWG): -3.00 m

Geotechnical parameters

Backfill soil type: fine and dusty sands

Soil compaction coefficient (MPD): 0.85

Volumetric weight 17.50 kN/m³

Porosity: 15 %

Secant modulus of strain: 1.25 MPa

Pipe working conditions

Traffic load type: vehicle SLW 60 (acc. DIN)

Solid paving with foundations: NO

Workmanship

Multi-pipeline trench: NO

Heavy construction traffic during installation: NO

Compaction of first layer above the pipe with heavy equipment: NO

Permanent supervision and control of installation: YES

Workmanship quality: NORMAL

Installation factor (If): 0.0 %

Bedding factor (Bf): 2.0 %

PT=0.00

PD=-2.00

ZWG=-3.00

Calculation results

Soil load: 28.31 kPa

Traffic load: 34.79 kPa

Total load: 63.10 kPa

Maximum admissible load: 223.05 kPa

Deflection caused by load: 1.5 %

Deflection caused by bedding and installation 2.0 %

Total deflection: 3.5 %

Maximum admissible deflection: 6.0 %

Max. uplift force: 0.00 kN/m

Min. anchoring force: 10.46 kN/m

Conclusions

The pipe meet structural requirements.

Závěr

Při dodržení zadávacích podmínek potrubí Ultra Solid Blue Pipe, SN 12, DN/OD 500 vyhoví a jeho deformace nepřesáhne hodnotu 3,5 %.

Zadávací podmínky

Použité potrubí: Ultra Solid Blue Pipe SN 12, DN/OD 500

Krytí nad vrcholem potrubí: 2,5 m

Zatížení provozem: D 400

Hladina spodní vody pod terénem: 1,0 m

Obsypový materiál: lomová prosívka, písek, štěrkopísek

Stupeň zhutnění obsypu: 0,85 ID

Pipeline data

Pipe category: Ultra Solid Blue Pipe

Pipe type: SN12

Nominal pipe diameter (Dn): 500 mm

Internal diameter of pipe (Dw): 467.4 mm

External diameter of pipe (Dz): 500.0 mm

Wall thickness (g): 16,3 mm

Ring stiffness (Sr): 12 kN/m²

Calculation cross-section

Ground level (PT): 0.00 m

Pipe bottom level (PD): -3.00 m

Covering layer (HP): 2.50 m

Pipe installation level (PP): -3.02 m

Ground water level (ZWG): -1.00 m

Geotechnical parameters

Backfill soil type: fine and dusty sands

Soil compaction coefficient (MPD): 0.85

Volumetric weight 17.50 kN/m³

Porosity: 15 %

Secant modulus of strain: 1.22 MPa

Pipe working conditions

Traffic load type: vehicle SLW 60 (acc. DIN)

Solid paving with foundations: NO

Workmanship

Multi-pipeline trench: NO

Heavy construction traffic during installation: NO

Compaction of first layer above the pipe with heavy equipment: NO

Permanent supervision and control of installation: YES

Workmanship quality: NORMAL

Installation factor (If): 0.0 %

Bedding factor (Bf): 2.0 %

PT=0.00

PD=-3.00

ZWG=-1.00

Calculation results

Soil load: 50.24 kPa

Traffic load: 23.83 kPa

Total load: 74.07 kPa

Maximum admissible load: 218.01 kPa

Deflection caused by load: 1.8 %

Deflection caused by bedding and installation 2.0 %

Total deflection: 3.8 %

Maximum admissible deflection: 6.0 %

Max. uplift force: 1.26 kN/m

Min. anchoring force: 11.68 kN/m

Conclusions

The pipe meet structural requirements.

Závěr

Při dodržení zadávacích podmínek potrubí Ultra Solid Blue Pipe, SN 12, DN/OD 500 vyhoví a jeho deformace nepřesáhne hodnotu 3,8 %.

Zadávací podmínky

Použité potrubí: Ultra Solid Blue Pipe SN 12, DN/OD 500

Krytí nad vrcholem potrubí: 2,5 m

Zatížení provozem: D 400

Hladina spodní vody pod terénem: 1,5 m

Obsypový materiál: lomová prosívka, písek, štěrkopísek

Stupeň zhutnění obsypu: 0,85 ID

Pipeline data

Pipe category: Ultra Solid Blue Pipe

Pipe type: SN12

Nominal pipe diameter (Dn): 500 mm

Internal diameter of pipe (Dw): 467.4 mm

External diameter of pipe (Dz): 500.0 mm

Wall thickness (g): 16,3 mm

Ring stiffness (Sr): 12 kN/m²

Calculation cross-section

Ground level (PT): 0.00 m

Pipe bottom level (PD): -3.00 m

Covering layer (HP): 2.50 m

Pipe installation level (PP): -3.02 m

Ground water level (ZWG): -1.50 m

Geotechnical parameters

Backfill soil type: fine and dusty sands

Soil compaction coefficient (MPD): 0.85

Volumetric weight 17.50 kN/m³

Porosity: 15 %

Secant modulus of strain: 1.22 MPa

Pipe working conditions

Traffic load type: vehicle SLW 60 (acc. DIN)

Solid paving with foundations: NO

Workmanship

Multi-pipeline trench: NO

Heavy construction traffic during installation: NO

Compaction of first layer above the pipe with heavy equipment: NO

Permanent supervision and control of installation: YES

Workmanship quality: NORMAL

Installation factor (If): 0.0 %

Bedding factor (Bf): 2.0 %

PT=0.00

PD=-3.00

ZWG=-1.50

Calculation results

Soil load: 49.49 kPa

Traffic load: 23.83 kPa

Total load: 73.23 kPa

Maximum admissible load: 218.14 kPa

Deflection caused by load: 1.7 %

Deflection caused by bedding and installation 2.0 %

Total deflection: 3.7 %

Maximum admissible deflection: 6.0 %

Max. uplift force: 1.26 kN/m

Min. anchoring force: 13.21 kN/m

Conclusions

The pipe meet structural requirements.

Závěr

Při dodržení zadávacích podmínek potrubí Ultra Solid Blue Pipe, SN 12, DN/OD 500 vyhoví a jeho deformace nepřesáhne hodnotu 3,7 %.

Zadávací podmínky

Použité potrubí: Ultra Solid Blue Pipe SN 12, DN/OD 500

Krytí nad vrcholem potrubí: 2,5 m

Zatížení provozem: D 400

Hladina spodní vody pod terénem: 3,5 m

Obsypový materiál: lomová prosívka, písek, štěrkopísek

Stupeň zhutnění obsypu: 0,85 ID

Pipeline data

Pipe category: Ultra Solid Blue Pipe

Pipe type: SN12

Nominal pipe diameter (Dn): 500 mm

Internal diameter of pipe (Dw): 467.4 mm

External diameter of pipe (Dz): 500.0 mm

Wall thickness (g): 16,3 mm

Ring stiffness (Sr): 12 kN/m²

Calculation cross-section

Ground level (PT): 0.00 m

Pipe bottom level (PD): -3.00 m

Covering layer (HP): 2.50 m

Pipe installation level (PP): -3.02 m

Ground water level (ZWG): -3.50 m

Geotechnical parameters

Backfill soil type: fine and dusty sands

Soil compaction coefficient (MPD): 0.85

Volumetric weight 17.50 kN/m³

Porosity: 15 %

Secant modulus of strain: 1.48 MPa

Pipe working conditions

Traffic load type: vehicle SLW 60 (acc. DIN)

Solid paving with foundations: NO

Workmanship

Multi-pipeline trench: NO

Heavy construction traffic during installation: NO

Compaction of first layer above the pipe with heavy equipment: NO

Permanent supervision and control of installation: YES

Workmanship quality: NORMAL

Installation factor (If): 0.0 %

Bedding factor (Bf): 2.0 %

PT=0.00

PD=-3.00

ZWG=-3.50

Calculation results

Soil load: 45.81 kPa

Traffic load: 23.83 kPa

Total load: 69.64 kPa

Maximum admissible load: 241.95 kPa

Deflection caused by load: 1.5 %

Deflection caused by bedding and installation 2.0 %

Total deflection: 3.5 %

Maximum admissible deflection: 6.0 %

Max. uplift force: 0.00 kN/m

Min. anchoring force: 16.76 kN/m

Conclusions

The pipe meet structural requirements.

Závěr

Při dodržení zadávacích podmínek potrubí Ultra Solid Blue Pipe, SN 12, DN/OD 500 vyhoví a jeho deformace nepřesáhne hodnotu 3,5 %.