

# Static/Live & Dynamic Loading Questionnaire

## Calculation of static, live and dynamic loading for buried pipes according to ATV A127, AS/NZS 2566 and NZ Bridge Manual.

Please complete this document as best you can to assist our engineers with preliminary data for pipe profile selection to ensure short and long term performance requirements of **AS/NZS2566.1:1998 Buried Flexible Pipelines-Structural Design** are met. **Installation to AS/NZS 2566.2 Buried Flexible Pipelines**

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

Location: \_\_\_\_\_

Customer: \_\_\_\_\_

Contact person: \_\_\_\_\_ Tel: \_\_\_\_\_

E-mail: \_\_\_\_\_

Request for  Budgetary / Estimate  Tender  Quotation

Project starting date: \_\_\_\_\_ Project completion date: \_\_\_\_\_

Static analysis return date: \_\_\_\_\_

Pipe ID: \_\_\_\_\_

Application: \_\_\_\_\_

Connection: \_\_\_\_\_

Length of pipeline: \_\_\_\_\_ m

Inner color: \_\_\_\_\_

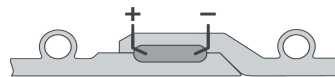
Outer color: \_\_\_\_\_

Desired pipe type: \_\_\_\_\_

*Other sizes may be available depending on project size, scope and lead time*



Double Rubber Ring connection



PKS type Electro-Fusion connection



Profile pipe



PKS Plus™ pipe



Solid wall pipe

Design Specific

SN8 pipe required

SN16 pipe required

### Advantages of Polyethylene

- Less carbon footprint than concrete
- Environmentally friendly and 100% recyclable
- UV resistant
- Light weight
- High ring stiffness
- Leak free
- Smooth antibacterial surface
- Bright inner colour therefore inspection friendly
- Standard 5.8m , effective lengths results super fast installation



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## Loads

Flow medium: \_\_\_\_\_  
 Density: \_\_\_\_\_ kg/m<sup>3</sup>  
 Operating temperature: T<sub>min.</sub>: \_\_\_\_\_ C°  
 T<sub>max.</sub>: \_\_\_\_\_ C°  
 Operating Pressure: \_\_\_\_\_ kPa (otherwise unpressurized)  
 Design life: Temporary Works      50 years      100 years

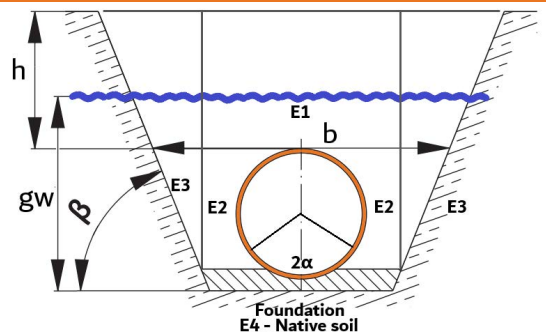
### Vehicle / traffic loading

- No traffic loading
- Class A - Pedestrian - 3.3kN wheel loading
- Class B - Livestock, residential carpark - 26.7kN wheel loading
- Class C - Minor roads - 50 kN wheel loading
- HN - NZ Bridge Manual - Normal loading - 60kN wheel loading
- Class D - Carriageways - 80kN wheel loading
- HN-HO72 - NZ Bridge Manual - Overloading - 120kN wheel loading
- Class E - General docks, aircraft pavements - 137kN wheel loading
- Class F - Docks and aircraft pavements - 200kN wheel loading
- Class G - Docks and aircraft pavements - 300kN wheel loading
- Other - please specify here:

Additional surface or structural loading: \_\_\_\_\_ N/mm<sup>2</sup>

## Trench (open cut) - Installation Option 1 - AS/NZS 2566.2

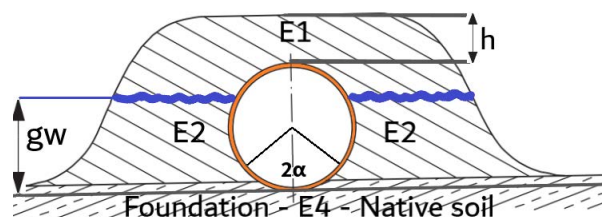
Covering height above crown level (h): \_\_\_\_\_ mm  
 Trench width at crown level (b): \_\_\_\_\_ mm  
 Slope angle (β): \_\_\_\_\_ °  
 Groundwater height above pipe bed (gw): \_\_\_\_\_ mm  
 Bedding support angle (2α):      120°      180°



*Top of E4 to be minimum 10 N/mm<sup>2</sup> Young's Modulus*

## Embankment - Installation Option 2 - AS/NZS 2566.2

Bank covering height (h): \_\_\_\_\_ mm  
 Groundwater height above pipe bed (gw): \_\_\_\_\_ mm  
 Bedding support angle (2α):      120°      180°



*Top of E4 to be minimum 10 N/mm<sup>2</sup> Young's Modulus*

\*Please note: E1, 2, 3 must be the same. E4 is the foundation

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Soil type		E1	E2	E3	E4
<p>Zones:</p> <p>E1-covering above pipe crown E2-pipe zone to the side of the pipe E3-ground adjacent to the trench or soil installed beside the pipe zone E4-ground below pipe</p>	G1 - non-cohesive soils (sand,gravel)	G1	G1	G1	G1
	G2 - slightly cohesive soils (sand,gravel)	G2	G2*	G2	G2
	G3 - cohesive mixed soils, coarse clay	G3	G3*	G3	G3
	G4 - clay, loam	G4	G4*	G4	G4
	<b>Zone E2, G1 should be used!</b>				
	<p><b>Specific weight [kN/m<sup>3</sup>]</b></p> <p><b>*Degree of compaction-Standard Proctor (87%-100%) use 95%</b></p> <p><b>E -Young's modulus [N/mm<sup>2</sup>]</b></p>				

\*AS/NZS 2033:2024 States moderate compaction is 87% - 94% Proctor  
AS/NZS 2033:2024 States well compacted is above 95% Proctor

Group	Specific weight kN/m <sup>3</sup>	Internal friction angle	Elasticity modulus in N/mm <sup>2</sup> with degrees of compaction ratio Dpr					
			85%	90%	92%	95%	97%	100%
G1	20	35	2.0	6	9	16	23	40
G2	20	30	1.2	3	4	8	11	20
G3	20	25	0.8	2	3	5	8	13
G4	20	20	0.6	1.5	2	4	6	10

Notes:

## Security Class

### Security class A

Definition:

Danger to ground water

Impairment of serviceability

Breakdown has considerable economic consequence

### Security class B

Definition:

No danger to ground water

Little impairment of serviceability

Breakdown has little economic consequence

