

## Static/Live & Dynamic Loading Questionnaire for pipelines

### 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: \_\_\_\_\_

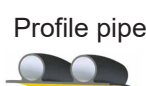
Other sizes may be available depending on project size, scope and lead time



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



AS/NZS 5065:2005  
License Number: 2978



DVS Technical Codes  
on Plastics Joining  
Technologies

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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>

## AS/NZS 2566.1 - TABLE 3.2

EMBEDMENT AND NATIVE SOIL - MATERIALS AND MODULI* - AS/NZS 2566.1 - TABLE 3.2				Moduli E <sub>e</sub> and E <sub>n</sub> (MPa)					
Description	Classification		Uncompacted	R <sub>D</sub> (%) Dry Density Ratio					
				85	90	95	100		
	AS 1726 (appendix a of 2566.1 Supp 1.)			AS 2758.1		I <sub>D</sub> (%) Density Index			
						50	60	70	80
	Standard Penetration Test for native soils only (AS 1289.6.3.2) Number of blows								
≤ 4	> 4 ≤ 14	> 14 ≤ 24	> 24 ≤ 50	> 50					
Gravel - single size	-	Coarse aggregate	5**	7**	7**	10**	14		
Gravel - graded	GW		3**	5**	7**	10**	20		
Sand and coarse-grained soil with less than 12% fines	GP,SW,SP and GM-GL,GC-SC etc.	-	1	3**	5**	7**	14		
Coarse-grained soil with morethan 12% fines	GM,GC,SC,SM and GM-SC,GC-SC	-	NR	1**	3**	5**	10		
Fine-grained soil (LL<50%) with medium to no plasticity and contatining more than 25% coarse-grained particles	CL,ML, mixtures ML-CL and ML-MH	-	NR	1**	3**	5**	10		
Fine-grained soil (LL<50%) with medium to no plasticity and contatining less than 25% coarse-grained particles	CI,CL,ML, mixtures ML-CL, CL-CH and ML-MH	-	NR	NR	1	3	7		
Fine-grained soil (LL>50%) with medium to high plasticity	CH,MH and CH-MH	-	NR	NR	NR	NR	NR		

\*Values apply for covers to 10.0 m and are conservative for greater covers.

\*\* These values are the more commonly used and achieved in practice.

NR = No reliable modulus values for these materials. May be appropriate where external load is nominal or where evaluation permits its use.

#### Notes:

-Recommended 95% Dry Density Ratio (R<sub>D</sub>) at embedment zone

-Values are conservative as they contain a reduction in modulus which occurs when ground water is above the pipe.

Allowance can be made for dry ground conditions. (See AS/NZS 2566.1 Supp 1.)

-Where appropriate, geotextile is to be placed between native soil and embedment material to prevent migration of fines.

-Where stabilized materials are used the designer shall determine values for E<sub>e</sub> for the specified material.

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## Open Cut - Trench Installation to AS/NZS 2566.2

### Necessary parameters:

Backfill zone = E1 : \_\_\_\_\_ MPa

Unit weight of E1 : \_\_\_\_\_ kN/m<sup>3</sup>

Embedment zone = E2 : \_\_\_\_\_ MPa

Unit weight of E2 : \_\_\_\_\_ kN/m<sup>3</sup>

Native soil zone = E3 : \_\_\_\_\_ MPa

Foundation zone = E4 : \_\_\_\_\_ MPa

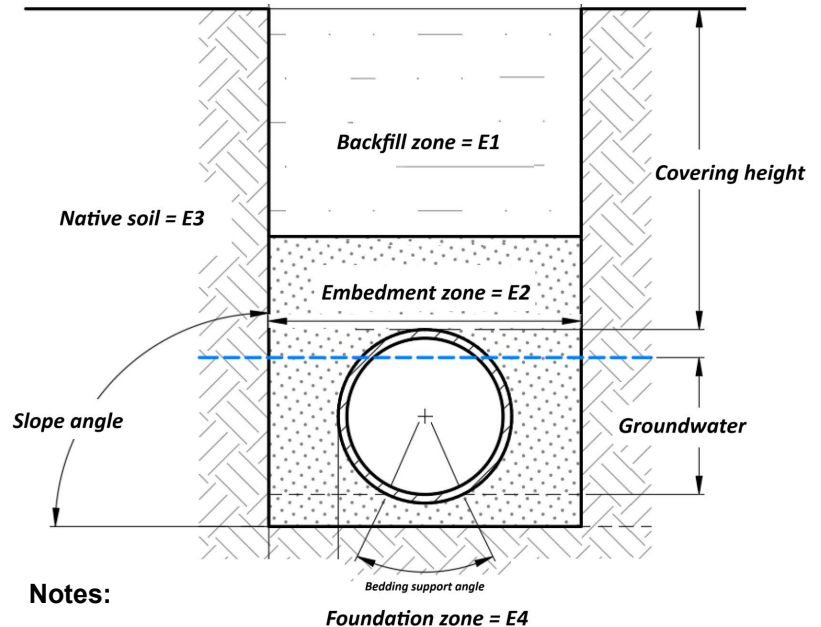
Covering height above crown : \_\_\_\_\_ mm

Slope angle : \_\_\_\_\_ °

Trench width at crown : \_\_\_\_\_ mm

Bedding support angle : 120° 180°

Groundwater above pipe bed : \_\_\_\_\_ mm



## Embankment Installation to AS/NZS 2566.2

### Necessary parameters:

Embedment zone = E2 : \_\_\_\_\_ MPa

Unit weight of E2 : \_\_\_\_\_ kN/m<sup>3</sup>

Foundation zone = E4 : \_\_\_\_\_ MPa

Covering height above crown : \_\_\_\_\_ mm

Bedding support angle: 120° 180°

Groundwater above pipe bed: \_\_\_\_\_ mm

