

Static/Live & Dynamic Loading Questionnaire for buried HDPE chambers and manholes

Calculation of static, live and dynamic loading for buried HDPE chambers and manholes 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: _____

Application: _____

Riser Internal Diameter: _____

Depth to invert at lowest point (h1): _____ mm

Height groundwater (hw): _____ mm

Work space (bA): _____ mm

In-situ (E'n) soil type: _____

In-situ (E'n) soil moduli: _____ MPa

Embedment (E'e) unit weight: _____ kN/m³

Embedment (E'e) soil moduli: _____ MPa

Traffic load on the cover/lid: _____

Traffic load beside the manhole / chamber: _____

Operating temperature Tmin: _____ ° Tmax: _____ °

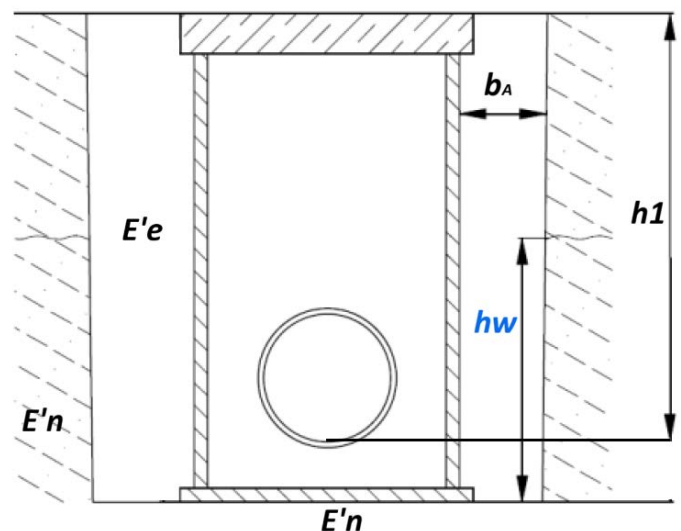
Operating pressure: _____ kPa (otherwise gravity)

Design life:

Temporary 50 years 100 years

sump base/no benching springline benching raised benching symmetrical benching for pump

stainless steel ladder web grate with hinged hatch flow meter brace



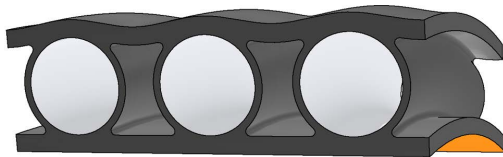
Preliminary list of inlet/outlet sizes and quantities, if drawings are unavailable:

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Vehicle / traffic loading classes

NOTES:

- 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



AS/NZS 2566.1 - TABLE 3.2

EMBEDMENT AND NATIVE SOIL - MATERIALS AND MODULI* - AS/NZS 2566.1 - TABLE 3.2				Moduli E'ₑ and E'ₙ (MPa)					
Description	Classification		Uncompacted	R _D (%) Dry Density Ratio					
				85	90	95	100		
	AS 1726 (appendix a of 2566.1 Supp 1.)			AS 2758.1		I _D (%) 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_D) 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'_e for the specified material.