

IMPORTANCE OF COMPACTION

When installing EUROFLO® pipe

Correct compaction is a key component to a successful EUROFLO installation. Below are general instructions for correct compaction of EUROFLO® pipe including the installation flow chart from the ANZS2566 standard.

For full instructions on installation including excavation and bedding please refer to the EUROFLO SN8 250mm – 1200mm technical document found on www.pandfglobal.com.

It is noted that these instructions are for general reference only and all installations of EUROFLO® products within New Zealand must be performed in compliance with guidelines and prescriptions given in AS/NZS 2566.2-2002



ONSITE COMPACTION INSTRUCTIONS FOR CONTRACTORS

Regardless of the type of pipe to be installed, for a long-lasting and correct installation follow the compaction instructions below:

- 1) choose the correct backfilling: the material must be dry, with low grading, without sharp edges, stones or debris at least in the part which comes in contact with the pipe and at least up to 30cm over the pipe.
- 2) careful compaction: compaction must be carried out in 30cm thick successive layers using suitable equipment at least up to one metre over the upper top of the pipe. A good compaction should have a Proctor index equal to 90-92%. The first side fill layer must be higher than the pipe semidiameter to prevent the pipe from raising or it may be required to block the pipe temporarily during compaction.
- 3) regular compaction: avoid discontinuous compaction to prevent pipe misalignment and excessive strain on the joints or abnormal bending of the pipe body.
- 4) compacting means: up to one metre above the top of the pipe, compaction must be carried out with light-duty means while normal means may be used over 1 metre. Be careful when using heavy-duty vehicles for compaction if the effects of the dynamic load on the underlying pipe have not been calculated.

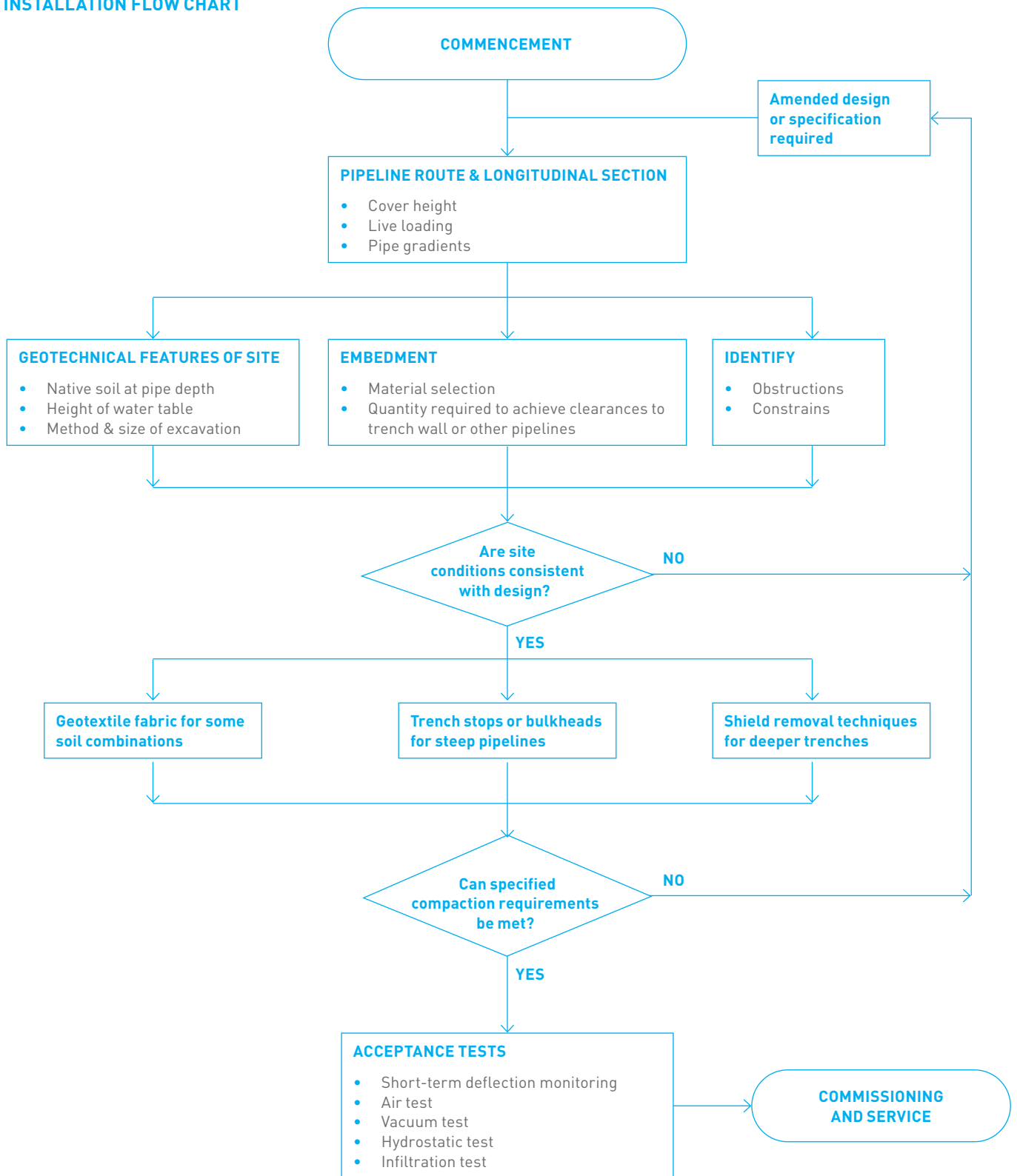
Table 6.3, taken from UNI ENV 1046 standard, shows the maximum thickness values recommended for the layers and the number of passages required to obtain the compaction classes according to the equipment used and the backfilling around the pipe. It also shows the minimum thickness values recommended for covering the pipe before the suitable equipment is used on the pipe.

General compaction requirements are laid out in section 5.6 of AS/NZS 2566.2 which details direct methods as related to soil types, whether cohesionless, cohesive or stabilized. Emphasis is placed on compaction control, which requires direct tests except where indirect tests are permitted. All methods are detailed in Appendix H of the standard.

Compaction method	Number of passages for different compaction classes			Thickness after compaction for different ground classes, m				Groups 1-4
	W (good)	M (medium)	N (without)	Group 1	Group 2	Group 3	Group 4	
Manual sledge								
15 kg	3	1	0	0.15	0.10	0.10	0.10	0.20
Vibrating tube								
70 kg	3	1	0	0.30	0.25	0.20	0.15	0.35
Flat vibrator								
50 kg	4	1	0	0.10	--	--	--	0.15
100 kg	4	1	0	0.15	0.10	--	--	0.20
200 kg	4	1	0	0.20	0.15	0.10	--	0.25
400 kg	4	1	0	0.30	0.25	0.15	0.10	0.35
600 kg	4	1	0	0.40	0.30	0.20	0.15	0.50
Vibrating roll								
15 kN/m	6	2	0	0.35	0.25	0.20	--	0.60
30 kN/m	6	2	0	0.60	0.50	0.30	--	1.20
45 kN/m	6	2	0	1.00	0.75	0.40	--	1.80
65 kN/m	6	2	0	1.50	1.10	0.60	--	2.40
Vibrat. double roll								
5 kN/m	6	2	0	0.15	0.10	--	--	0.20
10 kN/m	6	2	0	0.25	0.20	0.15	--	0.45
20 kN/m	6	2	0	0.35	0.30	0.20	--	0.60
30 kN/m	6	2	0	0.50	0.40	0.30	--	0.85
Heavy triple roll, without vibration								
50 kN/m	6	2	0	0.25	0.20	0.20	--	1.00

Table 6.3: Recommended thickness for layers and number of passages for compaction

**ASNZS2566 STANDARDS
INSTALLATION FLOW CHART**



NOTES:

- 1 Includes gravity sewers, drainage pipelines and air or cable ducts.
- 2 Drainage pipelines, air and cable ducts do not typically require acceptance tests.