

Construction & Installation

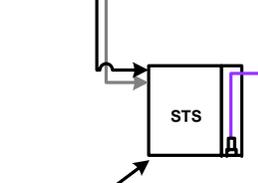
In the first instance, all construction shall be in accordance with Appendix E, VIC EPA Code of Practice (2013) for Wick Trench and Bed System.

1. Peg out the trench and pan areas.
2. Remove the topsoil and stockpile. Where this is a friable, loamy soil it can be reused as the final layer of the Wick Trench and Bed. Otherwise neither the topsoil nor lower soil horizons are to be reused in the system, and suitable clay loam soil must be imported.
3. Excavate the trench to a depth of 600 mm and the adjacent pan to 130 mm for secondary effluent systems.
4. Continuously check the level of the bed of the trench and the pan with a laser level to ensure they are flat.
5. Lay the 'A12 grade' geotextile fabric (with dry pore size 230 µm) in a continuous length across the trench and pan i.e. down the outer side wall of the trench, across the base of the trench, up the inner side wall of the trench, across the base of the pan and up the outer side wall of the pan.
6. Ensure the geotextile extends at least 50 mm further than the top of the side walls.
7. Overlap the edges of the geotextile down the length of the trench and pan system until all bases and side walls are covered.
8. Place the plastic self-supporting arch in sections 410 mm wide and 1500 mm long, into the trench on top of the geotextile.
9. Install inspection ports at trench entry points and the connection points to other trenches.
10. Install a mica-flap vent at the end of each trench to facilitate air being drawn into the trench, up the pipe line into the septic tank, through the pipe line into the house drainage system and up through the roof vent. The mica-flap acts as a marker for the end of each trench length.
11. Spread clean 20 – 30 mm gravel over the arch in the trench and across the pan to a depth of 30 mm. Ensure the top of the gravel layer is level.
12. Lay overlapping lengths of geotextile across the top of the gravel layer, ensuring the geotextile extends at least 50 mm further than the side walls of the trench and pan.
13. Spread good quality friable and permeable loam / clay loam soil over the top of the geotextile to a depth of 100 mm for secondary effluent. Never use soil from lower soil horizons.
14. Slightly mound the surface of the topsoil across the trench and bed to help shed rainwater off the system.
15. Plant the topsoil with a suitable grass or plants that thrive when their roots are continuously wet, especially those with large leaves as they will transpire more water than plants with small leaves.
16. Install stormwater diversion drains to direct stormwater away from the Wick System.

Additional Notes

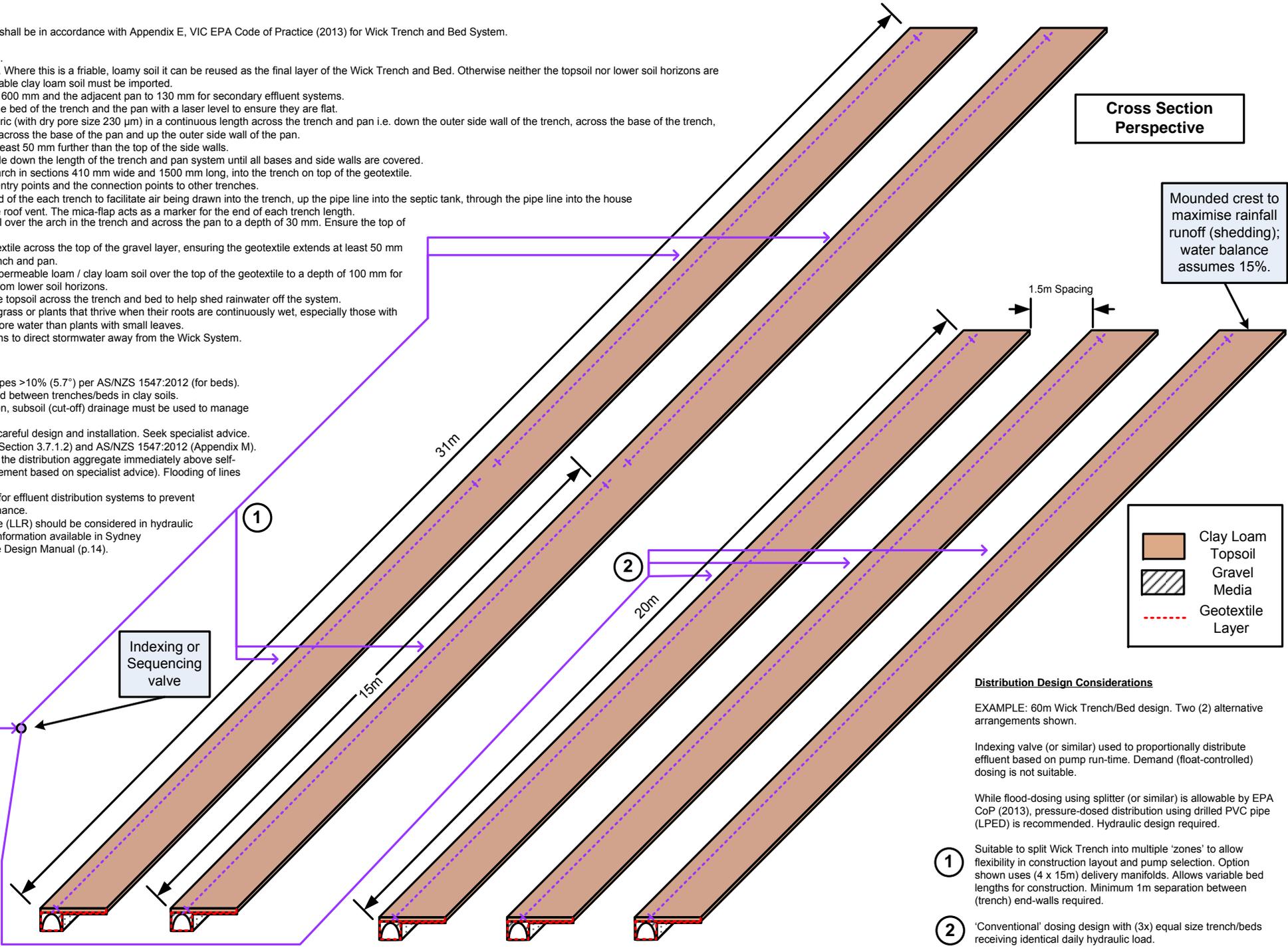
- A. Not suitable for installation on slopes >10% (5.7°) per AS/NZS 1547:2012 (for beds).
- B. 1.5m side-wall separation required between trenches/beds in clay soils.
- C. If terracing is used for construction, subsoil (cut-off) drainage must be used to manage shallow GW infiltration.
- D. Distribution manifold will require careful design and installation. Seek specialist advice. Additional information in EPA CoP (Section 3.7.1.2) and AS/NZS 1547:2012 (Appendix M).
- E. LPED lines may be placed within the distribution aggregate immediately above self-supporting arch (or alternate arrangement based on specialist advice). Flooding of lines should be prevented.
- F. Flush fixtures are recommended for effluent distribution systems to prevent blockage and facilitate easy maintenance.
- G. Linear (across-slope) loading rate (LLR) should be considered in hydraulic design for sloping sites. Additional information available in Sydney Catchment Authority – Best Practice Design Manual (p.14).

Combined (Black/Grey) Waste System



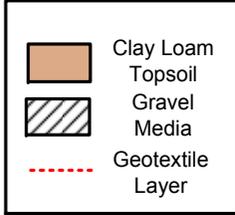
VIC EPA Approved 'secondary' treatment system (AWTS), with disinfection. Integrated pump chamber (or separate collection/pump well).

Indexing or Sequencing valve



Cross Section Perspective

Mounded crest to maximise rainfall runoff (shedding); water balance assumes 15%.



Distribution Design Considerations

EXAMPLE: 60m Wick Trench/Bed design. Two (2) alternative arrangements shown.

Indexing valve (or similar) used to proportionally distribute effluent based on pump run-time. Demand (float-controlled) dosing is not suitable.

While flood-dosing using splitter (or similar) is allowable by EPA CoP (2013), pressure-dosed distribution using drilled PVC pipe (LPED) is recommended. Hydraulic design required.

1 Suitable to split Wick Trench into multiple 'zones' to allow flexibility in construction layout and pump selection. Option shown uses (4 x 15m) delivery manifolds. Allows variable bed lengths for construction. Minimum 1m separation between (trench) end-walls required.

2 'Conventional' dosing design with (3x) equal size trench/beds receiving identical daily hydraulic load.