



**STRUCTURAL SPECIFICATIONS**

- 1.) All materials & workmanship are to be in accordance with AS 3600 (latest issue), 'Concrete structures.'
- 2.) Concrete shall comply with AS 1379. It shall have a characteristic strength of 50 MPa, a slump of 230 mm, and shall contain 7-10 mm aggregate. The water/cement ratio shall be 0.30-0.40.
- 3.) Concrete shall be properly compacted by mechanical vibration.
- 4.) For tanks on ground:
  - a. Remove all vegetative & organic matter. Foundation material to have a min. bearing capacity of 100kPa.
  - b. The design exposure classification is B1, applicable to exposed locations more than 1 km from the coast.
  - c. For exposed locations less than 1 km from the coast, refer to the Engineer.
- 5.) For tanks in-ground or partially in-ground:
  - a. Soils are to be non-aggressive, and only the presence of fresh water is permitted.
  - b. Tanks are not designed to support any lateral loading other than that applied by natural material.
  - c. As required by AS HB230-2006, 'Rainwater tank design & installation handbook', in clay soils either the site must be designed so that sub-soils remain dry, or means must be taken to prevent hydrostatic uplift. Suitable means include:
    - i) Providing slurry back-fill in accordance with Drawing No. VT-03.
    - ii) Designing the tank outlets to ensure that a minimum depth of water remains in the tank at all times, and/or over-topping the tank with a concrete slab or soil. Table 1 gives the thickness of a concrete slab, or, alternatively, the depth of soil required, to restrain a tank, for various minimum depths of water remaining.

- USER NOTES**
- 1.) The weight of the tank is 7.1 tonne.
  - 2.) Lids are designed to support 5.0 kPa vehicle loading in addition to an extra 3.5 kPa applied loading. This means that up to 150mm th. fill may be placed on lid, and light/medium vehicle traffic is acceptable. For pedestrian traffic, only, up to 400mm of fill may be applied to the lid.
  - 3.) For other combinations of lid loadings, special designs are available, and reference should be made to the manufacturer.
  - 4.) Tanks are designed to store liquids in below-ground situations, but they may be also used for other purposes, such as for the storage of dry goods, or as wine cellars, either above- or below-ground. For this purpose, above-ground tanks may be fitted with a door in one wall. Refer to Drawing No. VT-06.
  - 5.) For sub-floor installation, an opening in the lid to allow access from above, is provided (refer to Drawing No. VT-07). The note under para. 5c (ii) of the Structural Specifications is applicable.

TABLE 1		
Min. Depth of Water in Tank mm	Over top of Tank	
	Slab Th. mm	Soil Th. mm
0	370	490
200	300	400
400	230	310
600	160	220
800	90	130
1100	0	40

  

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VERSATILE TANKS		RPEES ref. no. 10010-S	
<b>11700 litre Tank</b>		drawn	
VERSATILE DRAWING No. VT-02		RPEES	
date		09-03-11	
checked		checked	

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**NOTE:**  
A concrete floor slab in a habitable building may not be used to restrain hydrostatic uplift in an underfloor tank.