Tank fittings and accessories

1.86 All metallic parts in contact with water such as panels, bracing, tie rods, angle plates, roof supports etc., shall be of stainless steel grade 316. If other than stainless steel grade 316 is used, a non-metallic plastic shrinkable tube or an approved similar protective material shall be used.

1.87 At least one access cover shall be provided for each water tank. Two access covers shall be allowed for in tanks with a capacity greater than 10,000 litres. The cover shall be an elevated, lockable hinged cover with gasket and locking mechanism. Access holes shall have a suitably-sized clear opening of not less than 600mm in diameter if circular, or 600 x 600mm if square. In small cylindrical tanks, access covers shall be located within reachable distance of float-operated valves for ease of maintenance.

1.88 All connections between panels shall be externally flanged for ease of maintenance, cleaning and hygiene considerations. Bolts and nuts shall be of stainless steel grade 316 (other materials can be used provided that bolt heads are cap-protected by a non-metallic material such as rubber).

1.89 Panel type tanks shall be supplied with at least one concave section bottom panel fitted with an arrangement to drain the tank; alternatively, the panels adjacent to the tank bottom shall be sloped, or so designed that water is effectively channelled to drain the panel, leaving no water accumulated within the tank. The minimum size of the drain shall not be less than the size of the inlet pipe. Cylindrical tanks shall be fitted with a drain connection to allow complete draining of the tank. All tanks shall be located in a well- drained location.

Glass-reinforced plastic (GRP) water storage tanks

Basic design consideration

1.90 Manufacturing and design shall conform to ADWEA standard specification No. W-M-SS-013 or equivalent for glass fibre-reinforced plastic cisterns for cold water storage.

(a) the maximum tank height shall not exceed 4000mm;

(b) the GRP panel safety factor shall be a minimum of 6;

(c) wind velocity shall be based on 22 km/hr;

(d) the roof panels of the tank shall withstand a maximum load of 100 kgf and dead load of structure; and

(e) earth loads shall be determined by the rational soil mechanics method.

1.91 The tanks shall be manufactured from hot-pressed moulded GRP Panels. The tank material shall meet the requirements of the WRc (Water Research Council, UK), the WRAS (Water Regulations Advising Scheme, UK) or equivalent approved standards.