

DEWEY WATERS LIMITED
HERITAGE WORKS, WINTERSTOKE ROAD, WESTON-SUPER-MARE BS24 9AN

OPERATING & MAINTENANCE INSTRUCTIONS

SECTIONAL WATER STORAGE TANKS (CISTERNS)

1. Dewey Waters Limited sectional water storage tanks are manufactured from GRP, which is a non-corrosive material and as a consequence requires little or no specific maintenance other than good housekeeping.
2. The basic tank construction comprises a series of GRP panels bolted together to form the tank size required. The inner surface of the panels, in contact with the water, has a smooth finish and which by its nature does not readily attract or retain dirt.
3. Metal internal supports, ladders or fasteners in contact with the water are manufactured from stainless steel. External fasteners and supports, unless otherwise specified, are galvanised.
4. Once a sectional tank has been successfully commissioned and put into use there is virtually no requirement to attend to its structure. The method of panel jointing means that once an effective joint has been made it will remain watertight unless disturbed.
5. With regard to regular checks and inspections we would refer to the following contained in BS 6700: 2006: para 7.5.
 - 5.1 Tanks storing drinking water should be should be inspected annually or more frequently if contamination is suspected.
 - 5.2 Tanks shall be inspected to ensure that overflow and warning pipes are clear, that covers are adequate and securely fixed and that there are no signs of leakage or deterioration likely to result in leakage.
 - 5.3 Tanks should be drained, any debris removed, disinfected and refilled (see 6.2) Tanks empty for a short while should not leak when refilled. If any leaks occur when the tank is refilled these are rectifiable by tightening the bolts in the immediate area of the leak. The bolts should not be over-tightened – see para 7. Consult with Dewey Waters Limited in the event of any problem.
 - 5.4 Where practicable a check should be made for stagnant water and if found the configuration should be modified so that the flow displaces the whole of the contents continually when the tank is in routine use. This particularly applies to internally flanged tanks.



6. We would also recommend the following points be checked.

- 6.1 Inspect and confirm the effectiveness and operation of the ball valve.
- 6.2 Inspect and ascertain the cleanliness of the tank. Sediment may be drawn into the tank via the inlet and may collect in the tank. This should be removed by using the washout facility (drain), accompanied by, in the case of heavy deposition, a thorough washing down. **NO** abrasive cleaners or equipment must be used. Where this cleaning has been necessary the tank will be required to be re-chlorinated prior to re-commissioning.

(where no washout facility is provided then the tank should be drained by any other means available. Residues of water remaining in internally flanged base panels should be pumped out.)

7. Inspect the tank externally for any signs of dampness around the tank base which may be due to

- a) Leaking connections
- b) Condensation
- c) Slackened fastenings

With particular reference to c), if the operation of the tank involves frequent filling and/or emptying, or large variations in water levels, it is recommended that a check on bolt tightness is carried out as a precautionary measure even though no leaks are evident at the time of inspection. Bolt fastenings should not be over-tightened as this can cause panels to crack – hot press panel bolting should be tightened to no more than 44 N m (33 ft lbs) and contact moulded tank panel bolting should be tightened to no more than 75 N m (55 ft lbs). If it is thought that these values will be exceeded please consult with Dewey Waters Limited.

8. Inspect all the tank fittings and connections to ensure that

- a) All air vents, overflow and warning pipe screen filters are clean and unobstructed
- b) The manway access and ball valve covers are secure and sealed.
- c) No stagnant water is found
- d) Any fitted access ladders / tank top hand-railing are (is) securely fixed

9. Some of the above activities will mean inspection / maintenance personnel requiring either:

- for lid mounted manways - access up to the height of the tank lid or onto it
- for side access manways - access through the manway

For both options a safe system of work should be risk assessed and implemented by the owner of the tank or persons conducting the work.

10. Where a tank (or in the case of partitioned tanks a section of the tank) has remained empty for a prolonged period, it will be necessary to check all fastenings and seals prior to re-filling to prevent leaks occurring due to the relaxation of the fasteners and the seals.



- 11. Please note that when undertaking maintenance, personnel should not, under any circumstances, stand on the tie bars as this may cause the seals where they pass through the side panels to be damaged and cause leaks.**

12. ACCESS UP TO BUT NOT ON TO LID OF TANK

12.1 Where permanent external access ladders have been supplied as part of the tank package by Dewey Waters Limited, then a safe system of work, utilizing the permanent ladder, and as determined by risk assessment, should be implemented by the client / user.

12.2 Where a ladder step is supplied by DWL for use with a supplied ladder, as defined in the risk assessment as described in 12.1 then DWL recommend that the step is located elsewhere until it is required to be used as part of the risk assessed safe system of work.

13. ACCESS ON TO THE LID OF THE TANK

13.1 Access to the height of the lid should be by risk assessed means as above. Where access onto the lid of the tank is also required then the safe system of work should also cover this. If a DWL supplied ladder step is to be used then the recommendation as 12.2 applies. If permanent hand-railing is fitted the safe system of work should incorporate its use. If no permanent hand-railing is fitted then the safe system of work should determine other means of operating safely on the tank roof. These means, for example, could include the use of safety harnesses, other fall arrest equipment or edge protection.

14. MAINTENANCE INSPECTIONS

14.1 Should it be required, Dewey Waters Limited would be pleased to carry out maintenance inspections either on a one off basis or as part of a regular scheduled maintenance programme. The Sales Department would be pleased to give you full details and a quotation for this service.

