

# CWST operations & maintenance manual

## Operation and maintenance manual

**Document Title: Purewater CWST O&M**

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**This manual is to be used in conjunction with the following products manufactured by Purewater Storage Ltd:**

- One Piece cold water storage tanks
- Two Piece cold water storage tanks
- Sectional water storage tanks
- Combination Units

# CWST operations & maintenance manual



## General safety Information

- A)** It is essential that correct and safe working practices are adhered to at all times when installing, operating and or maintaining any piece of equipment. Always consult all safety data sheets, operating and maintenance manuals, Health & Safety legislation and recommendations and specific requirements of any equipment manufacturer, client company, site controller, building manager or any other person or organisation relating to the procurement, installation, operation and or maintenance of any piece of equipment associated or in conjunction with any water storage tank provided by Purewater Storage Ltd.
- B)** This document is intended for all installers, operators, users and persons carrying out maintenance of this equipment and must be kept with the equipment, for the life of the equipment and made available to all persons at all times. Prior to carrying out any work associated with the tank it is essential that this document is read, fully understood and adhered to at all times.
- C)** The tank must only be installed, operated, used and or maintained by a competent person; A competent person is someone who is technically competent and familiar with all safety practices and all of the hazards involved.
- D)** Failure to install, operate, use or maintain the equipment in accordance with the information contained within this document could cause damage to the equipment and any other equipment subsequently connected to it, invalidating any warranties provided by Purewater Storage Ltd to the buyer.
- E)** Any damage caused to any equipment by misapplication, mishandling or misuse could lead to risk of electrocution, burns, flooding, death or injury to people and or damage to property dependent upon the circumstances involved.
- F)** Purewater Storage Ltd accepts no responsibility or liability for any damage, losses, injury, fatalities or consequences of any kind due to misapplication, mishandling, or misuse of any equipment, or as a result of failure to comply with this manual.
- G)** Water storage tanks contain water and as such represent a risk of injury or death as a result of drowning and or flooding and or injury or death as a result of structural failure of the tank.
- H)** Failure to adhere to the conditions, recommendations and general information contained within this manual may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.

# CWST operations & maintenance manual



## Warnings

- A)** The tank must be inspected upon delivery to site, and prior to any site positioning and or installation. Any damage to, and or unsuitability of the tank must be identified prior to installation. Failure to do so may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- B)** Unless otherwise stated the foundation on which the tanks is to be positioned must be inspected to ensure suitability for the purpose. The foundation must be no smaller than the gross external dimensions of the tank. The foundation must be solid & continuous and be level and flat being no more than + or - 2mm over any given metre and no greater than + or - 6mm over the total area taken by the tank. The foundation area must be free of local high and or low spots and be free from debris of any kind. Positioning and or commissioning of the tank on an unsuitable foundation may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- C)** It is essential that any base, foundation, plinth, wall or other supporting structure to which the tank and or any associated equipment is to be positioned and or attached is designed, engineered and fabricated to carry the entire mass of the equipment including the water that the tank will contain under worst-case fault conditions Eg. Tank filled to maximum nominal capacity at overflow condition. Failure to observe this may result in death or serious injury and or serious damage to equipment and or property.
- D)** The tank is not suitable for use as a working platform or designed to support the weight of man traffic. Standing on, walking across, and or use of the tank as a support may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- E)** It is essential that the tank is correctly connected to all incoming, outgoing, drain and overflow and or any other related pipework and or electrical equipment of any kind before the tank is filled. Failure to do so may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- F)** Do not remove the main lid of the tank without first draining the tank. The lid is a structural part of the tank and **MUST** remain correctly fitted and fixed down at all times whether water is contained within the tank, or whether the tank is empty. Removal of the main lid of the tank when water is contained within the tank may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- G)** Do not lean over or reach into any access hatch or attempt to enter the tank when water is contained within the tank. Accidental or deliberate entering of the tank may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.

# CWST operations & maintenance manual



## Warnings

- H)** Do not attempt to enter the tank when the tank has been drained and water is not contained within the tank, Water storage tanks represent a confined space working environment. Only persons fully trained and correctly equipped to carry out work in a confined space environment should enter the tank. Failure to adhere to correct safe operating procedures when working in a confined space may result in death and serious injury.
- I)** Purewater tanks are designed to operate at atmospheric pressure only and must not be pressurised or be subjected to vacuum. Should any tank be subjected to pressurisation and or vacuum this may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.
- J)** Purewater tanks are designed to operate within a specific temperature range between 0°C & 30°C, unless specifically stated, otherwise the temperature of the tank and or water contained within must not fall below 0°C or exceed 30°C. Should such a condition arise, this may result in structural failure of the tank resulting in death or serious injury and or serious damage to equipment and or property.
- K)** Purewater tanks are designed to contain clean, wholesome water only, and are not suitable to be in contact with water containing additives of any kind other than those included by any local water authority for the purpose of maintaining water hygiene and within standards and to concentrations allowing such water to remain as of a potable standard, being fit for drinking purposes.
- L)** Cleaning and sterilisation of the tank should take place using only chemicals and materials which are deemed suitable for use in contact with Grp tanks, Chemicals must be at concentrations which will not cause damage to the tank. Contact time for such materials should be no more than 1 hour duration and should be thoroughly flushed from the tank after use. Any unsuitable abrasive or aggressive chemical products and or materials may cause damage to the structure of the tank.
- M)** Any damage to equipment which is attached and or connected to any tank, for example pump sets, vessels, valves and pipework or any system components or similar items, which are damaged as a result of misapplication, mishandling, incorrect installation of any kind or misuse could lead to electric shock hazard, burns hazard, fire hazard, flooding hazard and cause death or injury to people, and or serious damage to equipment and or property.



# CWST operations & maintenance manual



## Cautions for installation

- A)** The unit should only be installed and or operated by a competent person; A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.
- B)** When positioning, the tank **MUST** be lifted. The tank **MUST NOT** under any circumstances be dragged. The tank should be lifted using a suitable pallet to the underside and by using a pallet/ forklift or crane by passing straps underneath the tank and or pallet using a spreader bar. Any pallet must be no smaller than the overall external length and width dimensions of the tank. It is essential that no load is placed by pallets, supports, fork lift truck forks or similar, to the unsupported single skin base of any tank. Failure to utilise these correct lifting and or movement procedures will result in damage to the base of the tank.
- C)** Any storage of the tank should be inside in a dry place to avoid deterioration of the tank caused by general weather conditions.
- D)** Protect the tank against debris, dirt, damage and frost. It is absolutely essential that foreign matter such as pipe thread swarf, welding slag, grit, stones or any other debris are not allowed to enter the tank. Debris of this type can cause severe damage to the tank and or associated equipment.
- E)** Prior to initial commissioning of the tank or if the tank is to be stored or taken out of service for a period of time (e.g. 1 week or more), then we would recommend draining the tank followed by pre-storage cleaning of the inside of the tank. When recommissioning it is our recommendation that the advice and recommendations of the local water authority and or water hygiene facilities services provider is sought prior to re-commissioning of the tank and or system.
- F)** Ensure that any base, foundation, plinth wall or support of any kind to which the equipment is to be attached has sufficient mass compared to the equipment, in order to avoid noise/ vibration transmission.
- G)** The tank is not suitable for use as a working platform or designed to support the weight of man traffic. Standing on, walking across, or use of the tank as a support of any kind and for any purpose may result in death or serious injury and or structural failure of the tank resulting in serious damage to equipment and or property.

# CWST operations & maintenance manual



## Cautions for installation

- H)** When entering, exiting or generally working on the tank it is essential that no part of the tank is used as a support of any kind. Any internal or external flanges, fixings, bracing or connections are NOT suitable as hand or foot holds or suitable for bearing weight. If internal bracing is used to provide support for persons entering or exiting the tank this will result in leaks at the point at which any threaded bar passes through any tank panel(s).
- I)** The installer and or user is responsible for the installation of the correct earthing and protection according to valid national and local standards. All operations must be carried out by a suitably qualified person.
- J)** Where the fitting of connections to the tank is to be carried out on site it is essential that the operator carrying out such work is fully trained and familiar with carrying out an operation of this type. IF IN DOUBT PLEASE PHONE 0121 323 4000 AND ASK FOR SERVICE SHEET "**On-site connection fitting instructions**" before attempting to fit connections to the tank.
- K)** During the process of on site fitting of connections, the cutting of the tank body and or lid may result in the production GRP dust, swarf, shards and or splinters. It is essential that any person carrying out such work are fully protected from these hazards by use of correct Personal protection equipment. If in doubt please telephone 0121 323 4000 for further advice.
- L)** During the process of the on site fitting of connections and or any other work requiring the use of hand tools or powered tools and or equipment of any type it is essential that any operator is fully conversant with the correct use of equipment and is fully protected by the use of the correct personal protection equipment. Always consult tool/ equipment manufacturer's user manuals prior to use.
- M)** When installing water storage tanks always consult the current water regulations and local water authority regulations and requirements to ensure that the installation of the tank is suitable for the application, correctly carried out and does not contravene such regulations.
- N)** Any connections, pipe work and or equipment of any kind connected to or in association with the tank must be fully supported by independent brackets and or similar structures and fixings. It is essential that the tank body and or lid are NOT used to provide support of any kind for equipment or items of any kind.
- O)** Drain cocks and or valves which are fitted to the tank and or pipe work must not be left open as this could cause flooding.

# CWST operations & maintenance manual



## Cautions for maintenance and general use

- A)** Prior to carrying out maintenance work of any kind and prior to general use of the tank it is essential that the following sheets are read, fully understood and adhered to at all times.
- General safety information
  - Warnings
  - Cautions for installation
  - Cautions for maintenance and general use
  - Protecting the environment
- B)** The unit should only be operated and or maintained by a competent person; A competent person is someone who is technically competent and familiar with safety practices and the hazards involved.
- C)** The tank should be inspected on a weekly basis to ensure that no leaks are present and that no damage or deterioration to the tank structure and associated connection and or pipe work has taken place.
- D)** Any float valves, overflow and or warning pipes should be inspected on a weekly basis to ensure that the tank is not in an overflow condition. Tanks which are in an overflow condition are a source of considerable waste of water. Water is an expensive and often scarce natural resource, it's wastage comprises a threat to the environment and contributes to global climate change.
- E)** It is a requirement of current water regulations that water storage tanks should be thoroughly inspected at an interval not exceeding one year; in order to determine the state of hygiene inside the tank. If present, any dirt or debris, foreign matter, growths or contamination of any kind should be thoroughly cleaned from the inside of the tank and the tank sterilised prior to re-commissioning.
- F)** All screen units which are fitted to any vents, overflows and or warning pipes should be inspected and if necessary removed, cleaned and re-fitted prior to re-commissioning - please refer to **"HSE Approved Code of Practice (ACOP) L8"**.
- G)** It is essential that tank inspection and cleaning and any other water hygiene work is carried out by the building water hygiene facilities services provider or similar specialists.
- H)** During any cleaning, and or sterilisation of the tank, only chemicals and materials which are deemed suitable for use in contact with Grp should be used. Chemicals must be at concentrations which will not cause damage to the tank. Contact time for such materials should be no more than 1 hour duration. Any abrasive or aggressive chemical products and or materials may cause damage to the structure of the tank.
- I)** If the tank is to be stored or taken out of service for a period of time (e.g. 1 week or more), it is our recommendation that the tank is drained followed by pre-storage cleaning of the inside of the tank. When re-commissioning. It is recommended that the tank be cleaned thoroughly and sterilised/ chlorinated prior to commissioning. It is our recommendation that the advice and recommendations of the local water authority and or water hygiene facilities services provider is sought prior to re-commissioning of the tank and or system.
- J)** Where the tank and or associated equipment is fitted with Building Management Services (BMS) interconnections, always notify the appropriate persons before switching OFF for maintenance or adjustments, to avoid unnecessary alarm conditions occurring. **WARNING:** Any restriction of water supply from either supply to the tank or supply from the tank to any other equipment may result in failure of that equipment.

# CWST operations & maintenance manual



## Protecting the environment

When selecting, procuring, installing, operating and using any water storage tanks always consider the environment.

The correct selection of water storage tank for any application will help provide the most cost effective solution to water storage requirements and ensure a minimum impact of the environment.

Always ensure that tanks and associated equipment are correctly designed and installed to reduce wastage of water. Regular inspection of float valves, overflows and warning pipes will reduce the possibility of an overflow condition occurring. Water wastage is costly to the equipment user and to the environment and contributes to global climate change.

## Disposal information

When disposing of water storage tanks, the tank should first be isolated and the contents contained within should be-sterilised prior to draining off.

Purewater tanks and tank panels are manufactured from GRP materials which are, at the time of the issue of this document, unsuitable for recycling.

Tanks, tank panels and associated components which were originally manufactured by Purewater Storage Ltd should be taken to any local public waste disposal site for disposal.

Any metallic items such as fixings, connections and bracing should be disposed of to any local or public recycling facility.

Details of the location of local waste disposable facilities can be found in any local telephone directory or by contacting the waste disposal office of the local council.

In the event of the above detailed waste disposal facilities being unavailable please contact Purewater Storage Ltd on 0121 323 4000 to arrange to deliver the items to our works for disposal.