

# Cold Water Storage Tanks

UK water supply companies ensure that plumbing systems (such as water fittings and equipment) which are supplied with water from the public water supply, comply with the high standards set out in the Water Supply (Water Fittings) Regulations 1999 (<http://www.legislation.gov.uk/ukxi/1999/1148/made>) and either hold the Water Regulations Advisory Scheme (WRAS) conformance mark or are approved to a similar demonstrable level.

Cold water storage tanks should be:

1. Installed in appropriate and suitable locations to allow easy and safe access for inspection and maintenance.
2. Easy to clean, for example external assembly flanges and self-draining profiles on Sectional Cold Water Storage tanks makes it easier to clean internal surfaces.
3. Protected from environmental conditions, particularly from local high ambient temperatures.
4. Properly maintained. They should be kept in a good, clean condition – free from excessive corrosion, sludge deposition and scale deposition and this should be checked at least annually.
5. Fitted with tight-fitting lids and air vents to prevent anything from contaminating the water (eg light, insects and birds) and to avoid build-up of sludge, scale and rust.
6. Protected from freezing.
7. Designed to keep the volume of water stored to a minimum – there should be just enough for one day's usage (24 hours should be the maximum retention time). And if there are multiple tanks it's important to make sure they are linked together so that water flows through them all and doesn't stagnate in any one tank.
8. Monitored periodically – for temperature and physical inspection. If a physical inspection indicates the need then they must be cleaned and disinfected.
9. Water fittings should be made of suitable materials which are immune to contamination and are made of materials of "such strength and thickness to resist damage from any external load, vibration, stress or settlement, pressure surges, or temperature fluctuations to which it is likely to be subjected."

Temperature:

1. It's important to make sure that incoming and stored water remains at a temperature of less than 20°C.
2. Temperature at the ball valve outlet should be checked every 6 months and any findings should be recorded. The best place to check the temperature is usually at the ball valve outlet to the cold water storage tank. Watch this video from the HSE - <http://www.hse.gov.uk/legionnaires/cold-water-video.htm>.
3. Water temperature should be checked at sentinel outlets on a monthly basis. Watch this HSE video - <http://www.hse.gov.uk/legionnaires/sentinel-cold-water-video.htm>
4. After running for two minutes at sentinel taps the temperature should be below 20°C.

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## Further Information

All associated pipework and valves shall be adequately insulated and clearly labelled to identify their purpose.

Cold water storage tanks shall be subjected to a periodic “need” test which requires the user to question the presence of each unit and consider its removal if the services it supplies can be, equally well, supplied by converting the systems to domestic Mains fed only.

Each unit shall be subjected to a periodic “drop-test” designed to ascertain the capacity and demand requirements of each system, in order to ensure that excessive volumes of water are not unnecessarily stored. Eliminating storage within a system would also allow the negation of the necessary PPM Programme tasks and their replacement with much less onerous, more infrequent and less costly tasks to be carried out.

Delayed-action ball valves shall be fitted (where practicable) in order to help avoid stagnation of water.

Where Cold water storage tanks are linked “in parallel”, the feed to each tank shall be fitted with a water meter in order to allow for confirmation of equal and uniform usage from all tanks in the configuration.

Various arrangements of pumping systems are indicated in BS6700:2006. Where booster pumps are to be installed, a break cistern will be required between the mains supply pipe and the pumps. This is required in order to comply with the Water Supply (Water Fittings) Regulations 1999 with regard to prevention of backflow. Control of the pump(s) shall be fully automatic in operation and controlled by pressure sensors. Where two or more pumps are installed, the design flow shall be achieved with one pump stationary (or out of service). Automatic control shall be provided to cyclically and sequentially control all pumps to ensure that each is regularly brought into service. If this is not possible, documented procedures shall be in place to ensure equal usage is achieved.

Where indicated and when it is deemed necessary and practicable, Cold Water Storage Tanks shall be upgraded, refurbished, modified or replaced so that they may comply with current Water Supply (Water Fittings) Regulations 1999 . Following these works, each tank shall be cleaned and disinfected in accordance with BS6700:2006 and L8 prior to it being allowed back into service.