**TRINITY HOUSE**

Safe Code of Practice

Management and Use of Water

**1. Purpose**

This code outlines how water within Trinity House (TH) will be managed to ensure that bacterial and chemical content is kept within safe limits; and that all water supplied as drinking water is wholesome and safe to drink.

**2. Scope**

This code applies to all properties and vessels owned or operated by TH and all activities where water treatment or usage takes place, or where water may be consumed. This applies to all TH employees, it agents, contractors and where applicable, the public.

3. **References**

The following documents either are referred to, or have been used in the preparation of this procedure, or may be used as a source of further information:

3.1 The Control of legionella bacteria in water systems – Approved Code of Practice and Guidance; HSE –L8.

3.2 SI 2009; 3101 - The Private Water Supply Regulations 2009

3.3 SI 1999; 1148 – The Water Supply (Water Fittings) Regulations 1999

3.4 SI 2000; 3184 – The Water Supply (Water Quality) Regulations 2000

3.5 SI 2010; 994 – The Water Supply (Water Quality) Regulations 2010 (Wales)

3.6 SI 2010; 991 – The Water Supply Regulations 2010 (in preparation)

3.7 SI 1997; 1508 - The Merchant Shipping (Crew Accommodation) Regulations 1997

3.8 SI 1989; 102 - The Merchant Shipping (Provisions and Water) Regulations 1989

3.10 MCA MGN 397 – Guidelines for the Provision of Food and Fresh Water on Merchant Ships and Fishing Vessels.

**4. Introduction**

Trinity House as the duty-holder recognises that in the fulfilment of its statutory duties to provide aids to navigation and ensure the safety of the mariner, that those who work to ensure the reliability of the equipment to achieve this, must have reasonable working conditions, access to provisions as deemed suitable and this includes potable water. As such, potable water used for drinking and other purposes will, so far as is reasonably practicable be supplied wholesome for drinking purposes and in all cases without risks to health.

Likewise, where non – potable (grey) water is used and where water is used in, or with machinery processes, it shall be maintained in a safe condition and without risks to health.

**5. Responsibilities**

Those appointed to ensure the management and control of any identified bacterial, chemical or thermal risks; will ensure adequate resources are provided to design and maintain water provisions throughout the Service.

***5.1 Depots and Lighthouses***

The Engineering and Operations Manager has responsibility for the design, installation and maintenance of all water storage and supply systems for properties owned and operated by the Service and this includes the land-based provision of water to the ships from Trinity House Depots.

Through the Lighthouse Manager, the Technical Managers will be the designated persons to ensure the day to day control of water systems at lighthouses and undertake any maintenance schedules, as prescribed in the relevant operating procedure manuals, for lighthouses within each designated coastal area.

Depots will be the responsibility of the Buoy Yard Manager and those designated locally will be the Supplies Manager at Swansea; the Facilities Coordinator at Harwich and the Technical Manager at St Just.

The Planning and Performance Manager will be responsible for the maintenance of all water storage and supply systems under TH jurisdiction within the commercial estate and the Commercial Manager is the designated person to ensure that day to day maintenance schedules, as prescribed in the relevant operating manuals for all holiday cottages, are contractually performed by the housekeepers.

***5.2 Vessels and Marine***

The Marine Operations Manager has responsibility under The Merchant Shipping (Provisions and Water) Regulations 1989, for the design, installation and maintenance of all water storage and supply systems for all Trinity House vessels and those operated under contract.

Ships captains are the designated persons on board and are responsible to ensure the day to day control of water systems and undertake any maintenance schedules, as prescribed in the relevant operating procedure manuals. This further extends to water supplied to and from the ship for transfer; in as much as all transfer hoses and tanks must be maintained to ensure wholesome water.

**6. Record Keeping**

Those designated above must ensure records and maintenance logs for all water systems that fall within the scope of this document are maintained.

**7. Mains Water**

Mains water where provided by water authorities will be deemed suitable and safe for drinking at the authorities point of supply. All UK water from water authorities is chlorinated and as such it can be assumed it should remain drinkable for 14 days, provided it is stored in clean tanks or containers, away from UV light and the temperature kept below 20 0C. After this time, water used for drinking should be re-dosed, or replaced with fresh water.

**8. Water Treatment**

If potable water is to be used after 14 days, it must be kept below 20oC and one of the following must be used to ensure safe drinking water;

* re- chlorination;
* 5 micron filtration or better;
* UV filtration
* disinfection dosing (Elsil or Chlorine Dioxide)
* Silver pellets

In some circumstances a combination of the above may have to be used, but it is imperative when chlorinating or dosing with other chemicals, the correct dosing rate is used. Where practicable, dose concentration should be monitored regularly with proprietary measuring devices.

**9. Water Quality and Legislation**

Water quality standards should be maintained to European and UK National Standards for drinking water as defined by The Water Supply (Water Quality) Regulations 2000 and where water is sourced from bore holes and supplied (and in particular to the public), The Private Water Supplies Regulations apply. *See Appendix 1 for water quality standards.*

Where a requirement exists to test potable water samples, this should done by submitting the sample to a biological oxygen demand test (BOD). All sampling tests must be undertaken by a UKAS certified laboratory.

Water collected for testing must consist of 1 litre of water contained in a clean glass or non-permeable plastic container ideally obtained from a UKAS laboratory or a UKAS approved supplier. For accurate analysis, the sample must be kept at less than 20oC where possible and contained in an outer package to prevent the ingress of UV light.

**10. Domestic Water Management Plans**

All Depots and vessels must have a risk assessment, along with schematic diagrams of the system, identifying how and where bacteria might contaminate water their supply systems. In addition, a standard operating procedure which includes controls based on the procedures as stated in Appendix 2 must also be produced, implemented, maintained up to date. These risk assessments and standard operating procedures must be reviewed every two years to monitor any changes and to identify any potential risks to the quality of water supplied. Due to the complexity of water supply systems at depots the aforementioned risk assessment review should be undertaken by independent consultants registered with the Legionella Control Association or similarly registered qualified person.

The water supplies at Lighthouses will vary dependant on location, storage facilities and access. However, a management plan along with water system schematics, must be drawn up, stating how drinking water will be managed at each station, or class of station as appropriate. All risk water management risk assessments and schematics must be reviewed every five years, or when modifications are made.

**11. Potable Water at Lighthouses**

Water to TH lighthouses is supplied by a number of methods depending on location. With land based lighthouses, water may be supplied via main water supplies from local water authorities or water from local boreholes. Rock and island stations are generally supplied via helicopter under-slung pillow tanks, or water transferred from vessels via a combination of tanks and transfer hoses. In some circumstances and in particular for short day visits, bottled spring water may be taken out to station by individuals.

**12. Boreholes and Artesian Wells**

These, along with associated pipe work; header and storage tanks and pumps must be maintained at least annually to ensure they are clean and free from adverse sludge and other contamination.

Where practicable, the system must be designed in such a manner as to prevent the ingress of wildlife and their excrement. Particular attention must be made to header and storage tanks and transfer/coupling points that have the potential for such contamination.

Where private water supplies are involved and it supplies water to less than 50 people at any one time, water samples must be taken for analysis at least once a year to ensure water quality standards are being maintained. Such samples must be taken at source, within header and storage tanks and at consumer outlets.

**13. Pillow Tanks**

Pillow tanks must be clearly labelled or marked, or have different couplings from other chemical or fuel tanks to ensure they cannot be incorrectly filled or discharged.

All tanks must be flushed with a disinfectant solution after use and at least six monthly whether in use or not. As such bags must be stored in a position whereby they can drain. When in storage, stop bungs must be cracked open slightly to allow drainage but not sufficient to allow the ingress of insects or vermin. Some consideration might be given to covering inlets with muslin or similar nylon during storage.

Any transfer of water at a lighthouse should take place away from areas contaminated by guano where possible. Where this is not possible other steps must be taken to prevent cross contamination that may lead to the ingress of e.coli and other coliforms. Such steps might include laying down plastic sheeting where pipeline coupling takes place.

Delivery of pillow tanks to stations should be made as close to the time of occupancy as possible. The maximum storage of water in pillow tanks without post filling treatments (ie silver elements etc) is two weeks. However, this storage time diminishes drastically if the temperature exceeds 20 0C. It is therefore essential that delivery in expected warm weather by vessel or helicopter is not made more than 48 hours prior to the station being manned.

When personnel arrive on station, water must be discharged to storage tanks as a priority in warm weather.

**14. Delivery Hose Systems and Transfer Hoses**

Where transfer pipelines are stored on lighthouses, the coupling should be washed or dipped in disinfectant or a bleach solution, before coupling and transfer of water is made.

Every six months transfer hoses and delivery hoses on ships must be flushed, filled with a 50ppm chlorine solution and left for one hour. After being emptid they should be hung to dry where possible.

Ideally, all hoses should be flushed through with water before water transferred is made.

**15. Masonry Collection and Storage Tanks**

Stone and concrete water collection and storage tanks that are in operational use must be maintained to ensure cleanliness. Such tanks must be regularly inspected and where necessary drained, cleaned and lime washed or similarly coated where possible.

**16. Desalination Systems**

The desalination systems used in TH falls in two categories, portable units for brackish/seawater and fixed installations for brackish only.

*Portable units*

The portable unit is a self contained manufactured unit comprising of the following major components:

* Pre-filter
* R.O. (Reverse Osmosis) Filter
* High pressure pump
* U.V. Filtration

The operating, maintaining and storage of this unit must be adhered to as laid down by the manufactures guidelines to ensure safe operation and water quality.

*Fixed installations*

The fixed desalination installation is designed by TH and incorporates the above major components from different manufactures to suit the station requirements.

The operating, maintaining, storage and testing procedures of these installations will be laid down by TH design authority.

**17. Cold Water Systems**

All storage tanks must be designed to European and British Standards, where they exist and in such a manner as to enable draining. Where quality or thermal monitoring is required, instruments fitted in such a fashion so as to ensure monitoring can be performed without entering the tank. Where possible, storage tanks should not be positioned where they are subject to thermal warming from artificial or natural sources. Where this is not possible they must be adequately insulated and the temperature monitored to ensure water temperature is maintained below 200 C. All water tanks in buildings must be covered and insulated where necessary to protect from thermal changes.

Storage tanks must be clean, free from contamination and sludge. Ideally such tanks should be made of non-permeable materials or lined as such.

All storage tanks must be subject to a regular inspection regime to ensure the maintenance of hygiene standards and integrity. At depots and cottages, storage tanks must be inspected annually and at lighthouses every five years. See Appendix 2.

Water temperature in storage tanks should be measured every six months and at lighthouses, on arrival. Ideally thermal testing should be at a point furthest from the ball valve if possible and at the ball valve flow where fitted. Where maximum temperatures are indicated by fixed thermometers, this should be recorded. See Appendix 2.

For merchant ships there exists specific duties with regards to water storage tanks and these must be followed. Procedures and dose rates can be found in Marine Guidance Note MGN 397; ‘Guidelines for the provision of food and fresh water on merchant shipping ships and fishing vessels’.

All toilet cisterns must have lids or be enclosed and all toilet seats must be fitted with lids. Users should be encouraged to close lids before flushing.

Where lighthouses are being evacuated and left un-manned for more than three months, the pipework systems shall be drained down where possible.

**18. Hot Water Systems**

At depots, samples must be taken from hot water heaters annually and its condition noted. The water should be checked for colour, smell and transparency. Where possible, a visual check must be made on all internal surfaces of water heaters for scale and sludge. At Lighthouses, samples must be taken on arrival. Any suspicion that the water quality is not good, the heater and pipe work must be flushed through with disinfectant.

All hot water taps must be checked monthly for one minute to ensure the temperature reaches at least 50oC. Again, this must be checked at lighthouses on manning up and giving time for hot waters systems to energise.

Hot water system thermostats must be set to ensure the above temperatures can be achieved at all hot water outlets. However, at thermostatic mixer valves and showers, temperatures should be between 37oC and 46oC. See Appendix 2.

**19. Pipe Work (General)**

All pipe work must be designed and installed to meet current British and European standards, but in the main will ensure;

* water used for drinking cannot be cross contaminated by untreated or treated rain water (grey water) collection or waste water systems;
* all supply inlets will be protected by backflow valves;
* pipe runs for hot and cold water systems do not touch or cross within [60mm] of each other, or insulated where possibe;
* no dead legs are in the system where water may stagnate;
* the system can be efficiently drained.

Where Lead pipes exist prior to December 2013 the Lead content within the water should not exceed 25 ugPB/l. After December 2013 the standard is 10 ugPB/l and TH should strive to achieve this within all their premises where possible. Where no Lead pipe work exits the level must not exceed 5 ugPB/l.

**20. Fire Hose-Reels and Emergency Showers.**

Hose reels and emergency showers are not often used and as such subject to water stagnation. Even in systems that are not maintained in a charged state, some pooling will remain in the supply system, in the case of hoses, within the coils of the hose itself. All hose reels should be flushed through at least annually and ‘walk in’ emergency showers must be tested and flushed through every six months.

**21. Shower Heads**

Shower heads are an identified source for Legionella, particularly if not used regularly.

All shower heads at depots and holiday cottages must be dismantled (where possible) on a quarterly basis. They should be cleaned by immersing in a descaler as per the manufacturer’s instructions, bleach or disinfectant solution for 60 minutes. On board ships 50ppm of chlorine solution is recommended. At lighthouses, this cleansing should be undertaken soon after arrival on station, or the shower heads replaced, if showers are to be used.

**22. Water Filter Dispensers**

All water filter dispensers must be maintained to the manufacturer’s specification for cleaning and disinfection. Unless otherwise stated more frequent by the manufacturer or supplier, such dispensers must be dismantled, cleaned and disinfected every six months, or on arrival at lighthouses. Any filters installed must be changed also.

**23. Ultra Violet Germicidal Irradiation Water Treatment**

Except in regular cyclical irradiation storage systems, all UVGI units fitted at final outlets shall be combined with a 5 (maximum) micron pre- filter system also to remove suspended solids. See below.

UV lamps must be maintained to ensure the surface of the lamp is kept clean and as such they should be cleaned every six months. Lenses should be cleaned on UV units at lighthouses on arrival, if it has not been undertaken in the preceding six months. Unless otherwise stated by the manufacturer, lamps must be changed after approximately 9,000 hours use. This is approximately 12 months of constant use.

**24. Micron Water Filters**

Micron water filters are a very efficient way of removing the larger of the micro-organisms and particulates in water. However, if not changed regularly and especially in systems not used frequently, the filters themselves will become a breeding ground for bacteria.

Micron filters must be changed every six months on installed systems at depots. Where more than a day visit is anticipated at lighthouses, the micron filters must be changed on arrival and before charging the water system. Filters must be removed from the system on departure and be disposed.

**25. Pressure Washers**

Where pressure washers are used every week, they are unlikely to give rise to being a source of infection. However, washers not in frequent use, may harbour and breed harmful bacteria if left in a charged state, as water within the system will not only stagnate but may also react with metals and other components of the washer itself.

Where pressure washers are used infrequently, they must be dosed or disinfected with Elsil prior to use and after use be drained and left with valves open.

It is also recommended that where there is a risk of spray being breathed, a suitable disposable respirator mask, with an aqueous mist protection rating is worn. Use TH Stock Item 013899 – Moldex 2405 disposable mask.

**26. Water cooled engines**

In general, water cooled engines use an enclosed system and not likely to give rise to

Legionella, or the development of other harmful micro-organisms, particularly if a coolant additive has been used. All water cooled engines must be maintained regularly and the coolant changed annually, or to manufacturer specification. A summer/winter coolant (Ethylene or Propylene Glycol) should be used, as this will inhibit bacterial growth.

**27. Machine cutting fluids**

Under suitable conditions, bacteria and fungi can grow well in metalworking fluids. Inhalation of these bacteria, fungi or toxic by-products can cause irritation of the respiratory tract or flu-like symptoms, as well as making existing asthma symptoms worse. Workers exposed to metalworking fluid mist and vapour have an increased risk of developing work-related asthma, bronchitis, irritation of the respiratory tract and breathing difficulties. It can also cause extrinsic allergic alveolitis, which can cause increasingly severe breathing difficulties in recurrent episodes, following repeated exposure. Exposure may also cause irritation to the eyes, nose and throat.

All types of metalworking fluids can cause irritation of the skin or dermatitis. Neat oils in regular and prolonged contact with the skin can cause irritation of the hair roots. Also, fine microscopic metal particles, which are generated during machining, can damage the skin and make any existing irritation worse.

Where cutting and drilling machines are used regularly and such machines have installed fluid supply systems, they must be checked once a week after at least one hour of running. The fluid should be checked for smell (Hydrogen Sulphide [bad eggs]) which is an indication of bacterial growth. Tramp oil should be skimmed off and pH levels checked along with a refractor meter test to ensure compliance to manufacturer’s specification. Bactericide should be added in accordance with the manufacturer’s recommendations.

APPENDIX 1

**EUROPEAN WATER QUALITY STANDARDS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Microbiological standards** | | | | | |
| *Parameters* | | *Concentration or Value maximum)* | | *Units of Measurement* | *Point of compliance* |
| Enterococci | | 0 | | number/100ml | Consumer taps |
| *Escherichia coli (E. coli)* | | 0 | | number/100ml | Consumer taps  and service reservoirs\* and water treatment works |
| Coliform bacteria | 0 | | number/100ml | | Service reservoirs\* and water treatment works |

*Note:* \*Compliance required as to 95% of samples from each service reservoir

|  |  |  |  |
| --- | --- | --- | --- |
| **Chemical Standards** | | | |
| *Parameters* | *Concentration or Value maximum)* | *Units of Measurement* | *Point of compliance* |
| Acrylamide | 0.10 | μg/l | (i) |
| Antimony | 5.0 | μgSb/l | Consumers’ taps |
| Arsenic | 10 | μgAs/l | Consumers' taps |
| Benzene | 1.0 | μg/l | Consumers' taps |
| Benzo(a)pyrene | 0.010 | μg/l | Consumers' taps |
| Boron | 1.0 | mgB/l | Consumers' taps |
| Bromate | 10 | μgBrO3/l | Consumers' taps |
| Cadmium | 5.0 | μgCd/l | Consumers' taps |
| Chromium | 50 | μgCr/l | Consumers' taps |
| Copper(ii) | 2.0 | mgCu/l | Consumers' taps |
| Cyanide | 50 | μgCN/l | Consumers' taps |
| 1, 2 dichloroethane | 3.0 | μg/l | Consumers' taps |
| Epichlorohydrin | 0.10 | μg/l | (i) |
| Fluoride | 1.5 | mgF/l | Consumers' taps |
| Lead | (a) until December 2013 – 25 | μgPb/l | Consumers' taps |
|  | (b) after December 2013 – 10 | μgPb/l | Consumers' taps |
| Mercury | 1.0 | μgHg/l | Consumers' taps |
| Nickel (ii) | 20 | μgNi/l | Consumers' taps |
| Nitrate (iii) | 50 | mgNO3/l | Consumers' taps |
| Nitrite (iii) | 0.50 | mgNO2/l | Consumers' taps |
| 0.10 | | Treatment works | |
| Pesticides (iv)(v) | | | |
| Aldrin | 0.030 | μg/l | Consumers' taps |
| Dieldrin | 0.030 | μg/l | Consumers' taps |
| Heptachlor | 0.030 | μg/l | Consumers' taps |
| Heptachlor epoxide | 0.030 | μg/l | Consumers' taps |
| other pesticides | 0.10 | μg/l | Consumers' taps |
| Pesticides: Total (vi) | 0.50 | μg/l | Consumers' taps |
| Polycyclic aromatic hydrocarbons (vii) | 0.10 | μg/l | Consumers' taps |
| Selenium | 10 | μgSe/l | Consumers' taps |
| Tetrachloroethene and Trichloroethene (viii) | 10 | μg/l | Consumers' taps |
| Trihalomethanes: Total (ix) | 100 | μg/l | Consumers' taps |
| Vinyl chloride | 0.50 | μg/l | (i) |

Notes:

i) The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. This is controlled by product specification.

ii) After leaving the relevant supplier’s pipes

iii) That the water satisfies the formula [nitrate]/50 + [nitrite]/3 ≤ 1, where the square brackets signify the concentrations in mg/l for nitrate (NO3) and nitrite (NO2).

iv) See the definition of “pesticides and related products” in regulation 2

v) The parametric value applies to each individual pesticide.

vi) "Pesticides: Total" means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring procedure.

vii) The specified compounds are:

- benzo(b)fluoranthene - benzo(k)fluoranthene - benzo(ghi)perylene - indeno(1,2,3-cd)pyrene.

viii) The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

ix) The specified compounds are:

- chloroform - bromoform

APPENDIX 2

**Potable and Non-Potable Water System Maintenance**

*A= annually; 6M = six monthly; Q = quarterly; M = monthly; W = weekly;*

*OA = on arrival; OD = on departure; EW = each change of watch; PTU = Prior to use.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Service** | **Task** | **Frequency** | | | |
| Depot/  office | LHs | SVS | Hol  Cots |
| Hot water services | Samples to be taken from hot water heaters, heat exchangers and calorifiers to note condition of water. | A | OA | A | A |
| Water heaters/calorifiers. Prior to draining raise temperature to 70oC if possible. Cool, drain and open up and where possible visually check on all internal surfaces for scale and sludge. Clean and disinfect accordingly. | A | N/A | A | A |
| Check temperature and settings on heaters/calorifiers where possible. | M | OA | EW | M |
| Check water temperature at furthest tap from heater (or random sample) for up to one minute to ensure it reaches 50oC | M | OA | EW | M |
| Check water temperature at thermostatic mixer valves to ensure they reach between 37 oC and 46oC | M | OA | EW | M |
| Check water temperature at showers to ensure they reach between 37oC and 46oC | M | OA | EW | M |
| Cold Water Services | Visually inspect cold water storage tanks and carry out remedial work where necessary. Check representative taps for temperature as below on a rotational basis | A | OA | 6M | A |
| Check tank water temperature remote from ball valve and mains temperature at ball valve. Note maximum temperatures recorded by fixed max/min thermometers where fitted | 6M | OA | 6M | A |
| Check that temperature is below 20°C after running the water for up to two minutes in the taps | M | OA | EW | M |
| Check drip trays on humidifiers and air exchangers to prevent evaporation into system. Ensure drainage is efficient and disinfect. (N.B portable units – weekly) | A | N/A | EW | N/A |
| Replace all micron filters and flush through from filter chamber. | 6M | OA | 6M | 6M |
| Check efficiency of UVGI lamps; check hours of use counter where fitted. Allow to cool and clean outer glass/lens. Replace lamp as necessary. | 6M | As per  TI | 6M | A |
| Taps | Where taps have obvious scale these must be descaled either using proprietary descaler or bleach solution. | 6M | PTU | 6M | 6M |
| Where any property is left unoccupied, or tap unused for more than a month all taps must be opened and flushed for at least one minute. Keep away from any spray caused. | As req | As req | As req | As req |
| Shower heads | Dismantle, clean and descale shower heads and hoses as necessary. Submerge shower head in bleach/disinfectant 30 mins | Q | OA | EW | Q |
| Spray humidifiers, air washers and wet scrubbers | Clean and disinfect spray humidifiers/air washers and make-up tanks including all wetted surfaces, descaling as necessary | 6M | N/A | N/A | N/A |
| Confirm the operation of non-chemical water treatment (if present) | W | N/A | N/A | N/A |
| Water softeners | Clean and disinfect resin and brine tank - check with manufacturer what chemicals can be used to disinfect resin bed | As recommended by manufacturer | | | |
| Drinking water (filtered) dispensers | Machine should be stripped down, cleaned and flushed and descaled as necessary.  All micron filters replaced | 6M | OA | 6M | 6M |
| Emergency showers and eye wash stations | Flush through and purge to drain | 6M | N/A | 6M | N/A |
| Sprinkler and hose reel systems | Open valve and flush through. External hose reels must be drained after. | A | N/A | A | N/A |
| Pressure washers | Those not in daily/weekly use must be flushed through with disinfectant solution | 6M | PTU | 6M | N/A |
| Lathe and machine tool coolants systems | Clean and disinfect storage and distribution system.  Change coolant as required | 6M | N/A | 6M | N/A |
| Water cooled engines/generators | Water must be changed regularly and coolant additives used to prevent sludge and bacteria | As recommended by manufacturer | | | |
| Pillow tanks | Part filled and flushed with disinfectant or 50ppm chlorine solution and hang to drain. Tanks should also be flushed before use. | 6M | 6M | 6M | N/A |
| Portable tanks | Clean and flushed with disinfectant and drained. Tanks should also be flushed before use. | 6M | 6M | 6M | N/A |
| FW Transfer hoses | Flush and fill with disinfectant solution or 50ppm chlorine solution for 1 hour. Empty and hang to drain where possible. Hoses should also be flushed before use. | 6M | PTU | 6M | N/A |
| Couplings on hoses stored where contamination might occur must be washed/dipped with a bleach solution | PTU | PTU | PTU | PTU |