PUB

Water for All : Conserve, Value, Enjoy

Your Ref :

Our Ref : WSN 92802/49

Date : 20 Mar 15

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To Relevant Professional Institutes, Associations, Societies, Statutory Boards, Government Organisations, Developers, Qualified Persons, Professional Engineers, Licensed Water Service Plumbers, Suppliers, Testing Laboratories.

Dear Sir/Madam

SINGAPORE STANDARD CP 48:2005 – CODE OF PRACTICE FOR WATER SERVICES - AMENDMENT NO. 4

This circular is to inform you of the latest amendments to the Singapore Standard CP 48:2005 – Code of Practice for Water Services.

2 The amendments (cited as "Amendment No. 4, December 2014") have been uploaded by SPRING Singapore at the Singapore Standards eShop website. You can access the amendments at the following link: http://www.singaporestandardseshop.sg/Search/DownloadFile.aspx?fn=1502041443 50CP%2048-2005_Amd%204.pdf. A copy of the amendments is also attached.

3 In addition, we will also like to highlight Section 7.2(i) of SS CP 48:2005, which outlines the requirement of installation of private water meters to measure water consumption at various water usage areas to monitor and track the water consumption at these areas for water usage and leakage control management.

4 All Professional Engineers and Licensed Water Service Plumbers are reminded to take note of the amendments to SS CP:48 and ensure compliance.

5 I would appreciate it very much if you could bring the contents of this circular to the attention of your members/staff. Please do not hesitate to contact Mr Christopher Chua at 67313669 or email christopher_chua@pub.gov.sg if you need further clarification.

Thank you.

Yours faithfully

RAMAHAD SINGH
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for DIRECTOR
WATER SUPPLY (NETWORK) DEPARTMENT
Encs.

Singapore Standard CP 48 : 2005

Code of practice for water services

AMENDMENT NO. 4

December 2014

1. Page 8, 1.2.11 NEWater

Replace the definition with:

High grade reclaimed water produced by the Authority from treated used water by advanced water purification technologies such as microfiltration, reverse osmosis and ultraviolet disinfection for non-potable usage.

2. Page 8, 1.2.13 Potable water

Replace the definition with:

Water supplied by the Authority for human consumption.

3. Page 8, 1.2.17 Spill-over level

Delete the definition.

4. Page 10, 1.3.3 NEWater

Replace the entire subclause with:

NEWater is presently supplied to commercial and industrial premises, where available, for non-potable uses such as for cooling towers, suitable process uses, general washing and irrigation, etc.

All new non-domestic (including commercial, industrial, etc) development proposals, including existing non-domestic premises undergoing addition/alteration (A&A) works, with cooling towers and/or processes, are required to provide a dedicated NEWater pipe system during planning and construction/A&A works stage to take in NEWater for such usage when it becomes available in future.

For the above mentioned proposals, provisions shall be made to receive PUB water as alternate source to NEWater in the event of an interruption due to urgent repairs, construction of new works, alteration to or maintenance of existing works. Examples of these include the provision of a spool piece with double check valves to facilitate switching over from NEWater to PUB water or via dual feed pipes supplying PUB water and NEWater to the NEWater break tank. There shall be no cross connection between the PUB and NEWater supply pipelines.

5. Page 17, 2.6 Mode of water supply

Insert the following new paragraph at the end of the subclause:

To ensure a continuous and reliable supply of NEWater to the development, provision shall also be made for a NEWater storage tank to be installed within the premises with its level of the highest fitting not higher than 115 m reduced level and a capacity equivalent to the 1 day's non-potable water requirement.

6. Page 19, 3.1.6

Insert the following new sentence at the end of the subclause:

A warning alarm shall also be provided to indicate when the water level in the water tank reaches its predetermined low level.

7. Page 20, 3.1.13

Replace the entire subclause with:

The air vents and overflow and warning pipes of a storage tank shall be:

- made of non-corrodible or corrosion-resistant material;
- integrated with the tank or otherwise fastened onto the tank with non-corrodible or corrosion-resistant fasteners; and
- properly screened with non-corrodible or corrosion-resistant stainless steel mosquito-proof netting of aperture size not exceeding 0.65 mm to prevent ingress of any animal, insect or foreign material.

8. Page 21, 3.1.19

Replace the entire subclause with:

For water tanks in developments other than landed residential premises:

- the water tanks and their ancillary equipment shall be housed in an adequately secured and locked dedicated tank/pump room or located within an adequately secured and locked enclosure. The room/enclosure housing the water tanks and their ancillary equipment shall be segregated from other services such as services for telecommunications, lifts or fire-fighting.
- all water tank covers and access doors and openings to the rooms/enclosures housing the water tanks and their ancillary equipment shall be securely locked with high-quality, strong and durable hinges, latches and locks with non-duplicable keys (i.e. patented keys that cannot be duplicated without proper authorisation).
- all water tank covers shall be adequately secured by bolting or fastening with stainless steel brackets/fasteners that are integrated with the tanks or otherwise fastened onto the tanks with non-corrodible or corrosion-resistant tapered round nuts.
- where a fencing enclosure is used to house the water tanks and/or its ancillary equipment, the material for the fencing enclosure shall be of welded-mesh or expanded-mesh with mesh openings no larger than 75 mm (height) x 25 mm (width). The height of the fencing enclosure shall not be less than 2.5 m above the highest ground level and shall be reinforced with 300 mm outriggers. Where a ceiling exists over the enclosure, the enclosure shall extend from floor to ceiling.
- the discharge of the overflow pipes from water tanks shall be within the secured and locked dedicated tank/pump room or enclosure and the overflow pipes shall not protrude outside the secured and locked room or enclosure. Proper drainage and facilities shall be provided to cater for overflow to ensure no ponding of water or flooding.
- any overflow warning alarm shall be installed for the water tanks. A warning pipe is not required.

9. Page 22, 3.3.4

Insert the following new sentence at the end of the subclause:

Any ventilation window shall be fitted with non-corrodible or corrosion-resistant metal grill to prevent unauthorised entry into the room.

10. Page 22, 3.3.5

Replace the entire subclause with:

Proper permanent access to the storage tank shall be provided. The water tank inspection manhole shall be located as close to or within two tank panels away from the access ladder to the tank. Where a tank is fixed in the roof space, sufficient provision shall be made by a trapdoor or otherwise, sufficiently large for access to the tank and to enable it to be inspected, cleaned and repaired or replaced.

11. Page 23, Table 1

Replace Table 1 with:

Table 1 – Flow rates at various fittings or appliances

Fitting or appliance	Maximum flow rate (cold water or hot water) Litres per minute	Best water conservation flow rate Litres per minute
Wash basin tap	6	2
Shower	9	5
Sink / Kitchen and other taps (except bathtub taps)	8	4
Bib tap	8	4

12. Page 23, 4.2.1 Float-operated valves

Replace the entire subclause with:

Float-operated valves installed in storage tanks shall be fitted in such a position as to discharge at a level higher than the overflowing level by not less than the diameter of the overflow pipe unless there is an effective means of preventing the siphonage of water back through the valve.

The float-operated valves when installed, shall not compromise the water tightness of the storage tanks or their security and safety against unauthorised access, ingress of any animal, insect or foreign material into the tanks or the contamination or pollution of the water contained in the tanks.

13. Page 23, 4.2.2 Draw-off taps

Replace the entire subclause with:

4.2.2 Draw-off taps and appliances with submersible inlets

Draw-off taps supplied from tanks should have their washer-plates secured so as to lift with the spindle since a loose washer-plate might impede the flow of the water where the pressure is low.

The point of discharge of water from a draw-off tap or other fitting on any pipe supplying a bath, wash basin, sink, bidet or similar appliance should not be submersible and not be less than 15 mm above the top edge of the appliance. All other appliances with submersible inlets should be supplied with water by a method which involves no danger of contamination by backflow or back-siphonage.

The hot water tap and cold water tap shall be distinguished by colour identification rather than by lettering; the hot water tap should be clearly marked in RED and when hot and cold water taps are provided together, the hot water tap shall be on the left-hand side.

14. Page 23, 4.2.3 Self-closing delayed action taps

Replace the entire subclause with:

The maximum allowable flow rates and timing for self-closing delayed action taps are shown in Table 2.

Table 2 – Maximum allowable flow rates and timing for self-closing delayed-action taps

Usage	Flow rate	Timing
i) Basin	6 L/min	2 - 3 seconds
ii) Shower	9 L/min	13 - 15 seconds

Sensor self-closing delayed action basin taps with a flow rate of 2 litres/minute* are allowed a maximum preset timing of not more than 60 seconds provided water supply from the tap is automatically cut off when the hand is moved away from beneath the tap.

All wash hand basin taps in public toilets and outside toilet facilities in food retail outlets shall be self-closing delayed action mechanical or self-closing delayed action sensor type taps with flow rate of 2 litres/minute* and timing of between 2 to 3 seconds. If the sensor self-closing delayed action basin tap is of the type where water supply from the tap is automatically cut off when the hand is moved away from beneath the tap, a maximum preset timing of not more than 60 seconds is allowed.

* With allowable tolerance of ± 0.2 litres/minute i.e. allowable flow rate of between 1.8 litres/minute to 2.2 litres/minute inclusive.

15. Page 24, 4.2.6 Flush valve

(a) *Replace* item 4 with:

– All flush valves shall be so adjusted as to give a flush of not more than 1.5 litres, 1 litre and 0.5 litre of water per flush for large (width size > 450 mm), medium (300 mm < width size ≤ 450 mm) and small (width size ≤ 300 mm) size urinals respectively or not more than 4.5 litres of water per flush for water closets.

(b) *Replace* item 15 with:

– For sensor-operated flush valves with manual by-pass or override, the flushing shall take place immediately and the automatic flushing shall be overridden to prevent double flushing when manual by-pass or override flushing is activated. The volume of water discharged per flush shall continue to be not more than 1.5 litres, 1 litre and 0.5 litre of water per flush for large (width size > 450 mm), medium (300 mm < width size ≤ 450 mm) and small (width size ≤ 300 mm) size urinals respectively or not more than 4.5 litres for water closets notwithstanding that the operating member continues to be held activated.

16. Page 25, 4.3.2 Appliances with submersible inlets

Delete the entire subclause.

17. Page 26, 4.3.4 Boilers and other water heaters

Replace item 4 with:

– the water is discharged from the apparatus into the air not less than 15 mm above the top edge of the appliance supplied therefrom.

18. Page 26, 4.3.7 Drinking bowls and troughs

Replace the 2nd sentence with:

Field drinking troughs may be supplied from a service pipe through a float-operated valve which is protected from damage, contamination and unauthorised interference and if the points of discharge are not less than 15 mm above the top edge of the trough.

19. Page 34, 6.4 Maintenance

(a) *Replace* 6.4.11 with:

All vents and pipe ends shall be properly covered with non-corrodible or corrosion-resistant stainless steel nettings to prevent the ingress of any animal, insect or foreign matter into the tanks. These nettings shall be in good condition and not tampered with.

(b) *Insert* the following new subclauses:

6.4.20 There shall be separate and different keys for tank cover, access door to rooftop tank, access door to intermediate tank and access door to low level tank. The keys for the tank covers shall be kept separate from other keys with access to the tank cover keys strictly controlled by authorised persons and restricted to only authorised persons. Keys to the tank covers and the rooms/enclosures housing the water tanks shall be restricted to only authorised town council/MCST/managing agent and emergency personnel.

6.4.21 There shall be separate master keys for access doors to rooftop tanks, access doors to intermediate tanks, access doors to low level tanks and water tank covers. The master keys to the access doors to the rooftop, intermediate and low level tanks shall be limited to no more than 100 blocks or buildings. The master key for the water tank covers shall be limited to no more than 20 blocks or buildings. The master keys for access doors and tank covers in the different groupings (i.e. group of no more than 100 blocks/buildings for access doors to rooftop, intermediate and low level tanks and group of no more than 20 blocks/buildings for water tank covers) shall be different. If a master key is lost, all corresponding locks shall be replaced.

6.4.22 Personnel authorised to work at rooftops where water tanks are located, pump/tank rooms and enclosures and tanks shall be properly attired (e.g. identification vests, badges, etc) for easy identification as authorised personnel for work in these designated areas.

6.4.23 Spot checks shall be conducted on works carried out at rooftops where water tanks are located, pump/tank rooms and enclosures and tanks. Proper records shall be kept of such checks.

6.4.24 For work involving tanks or within pump/tank rooms and enclosures, checks shall be conducted to ensure that all access doors (i.e. access doors to rooftop where the tanks are located or access doors to pump/tank rooms and enclosures, whichever are applicable) and tank covers are properly and securely locked at the end of each day and upon completion of work. Proper records of these checks shall also be kept.

6.4.25 In the event of suspected contamination of the water in water tanks, the following shall be carried out immediately:

- notify the Authority.
- isolate water supply and collect water samples.
- notify verbally, followed by written notice, all consumers not to consume or use water due to possible contamination.
- shut off stopcock at meter position of each unit to stop water supply to unit.

20. Page 36, 7.2

(a) *Insert* the following for item (i):

- Water recirculation system shall be incorporated into any water feature/water play area and shall comply with NEA's public health requirements.
- Common area taps shall be of threaded types to allow for proper hose connection to prevent water leakage/wastage and shall be properly secured and locked to prevent pilferage and unauthorised use of water.

(b) *Replace* Note 2 with:

NOTE 2 – All water fittings provisions for persons with disabilities shall be in accordance with the requirements stipulated in BCA's Code on Accessibility in the Built Environment. For accessible toilets in all non-domestic premises (including the common amenities of condominiums) where the wash basins designated for persons with disabilities are grouped together with wash basins for general use, the wash basins designated for persons with disabilities shall only have self-closing delayed-action sensor type taps.

21. Page 38, A.1.1.11

Replace the entire subclause with:

The licensed water service plumber shall ensure that all workers involved in the cleaning work are not feeling unwell before carrying out the cleaning work. All workers involved in the cleaning work shall wash, clean and disinfect themselves thoroughly before entering the tank.