

PLEASE ADDRESS ANY CORRESPONDENCE TO WATER SUPPLY (NETWORK) DEPARTMENT

Your Ref :

Our Ref : WSN 92802/50

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Date : 1 Dec 2021

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

Dear Sir/Madam

SINGAPORE STANDARD SS 636:2018 – CODE OF PRACTICE FOR WATER SERVICES – AMENDMENT NO. 4

This circular is to inform you of the latest amendments to the Singapore Standard SS 636:2018 – Code of Practice for Water Services.

2 The amendments (cited as “Amendments No. 4, July 2021”) have been uploaded by Enterprise Singapore at the Singapore Standards eShop website. You can access the amendments by scanning the QR code below. A copy of the amendments is also attached.



3 We would like to highlight Section **7.1.19 b) of SS 636:2018**, which outlines the requirement of the installation of an intelligent access / locking system with facial recognition and remote surveillance capabilities at the access doors and openings to the rooms / enclosures housing the water tanks to further strengthen its security against unauthorized access. Please note that the above requirement strictly applies to **projects where the Notification of Water Service Installation (WSI) Works By Professional Engineer (PUBWTR-0-WSW01) is submitted after 1 April 2022.**

4 All Professional Engineers and Licensed Plumbers are reminded to take note of the amendments to SS 636:2018 and ensure compliance.

5 We would appreciate it if you could bring the contents of this circular to the attention of your members/staff. Please do not hesitate to contact Mr Zhafri at 6885 2416 or muhd_zhafri_mohd_shaharuddin@pub.gov.sg if you need further clarification.

Yours faithfully

A handwritten signature in black ink, appearing to be 'Roland Chan', written in a cursive style.

ROLAND CHAN
PRINCIPAL ENGINEER (WATER DEMAND MANAGEMENT & INSPECTORATE)
for DIRECTOR
WATER SUPPLY (NETWORK) DEPARTMENT

Enclosed

Code of practice for water services

AMENDMENT NO. 4

July 2021

1. Page 26, 7.1.13

Replace clause 7.1.13 c) with:

- c) 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. The netting shall be properly secured using a stainless steel clip.

2. Page 26, 7.1.14

Replace clause 7.1.14 with:

Every isolated compartment of a storage tank shall be fitted with a tap for sampling purposes located anywhere between the top water level and the outlet pipe level or on the outlet pipe from the compartment of the storage tanks. If the sampling tap is fitted on the outlet pipe, it shall be fitted upstream of the valve. The sampling tap shall be under lock and key and accessible only to authorised persons.

3. Page 27, 7.1.17

Replace clause 7.1.17 with:

Every wash-out pipe from the bottom of the storage tank shall be fitted with a tap before the valve for sampling purposes and such a tap shall be under lock and key and accessible only to authorised persons.

4. Page 27, 7.1.19

Replace clause 7.1.19 b) with:

- b) The access door at each tank enclosure (e.g. fencing gate) and its ancillary equipment including all water tank covers 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). Alternatively, smart / intelligent biometric locking systems affording equivalent level of security shall be provided.

For access doors and openings to the rooms / enclosures housing the water tanks, an intelligent access / locking system with facial recognition and remote surveillance capabilities shall be provided, and this can replace the mechanical lock and key system. Where multiple roof tanks enclosures are provided at the rooftop, the intelligent access / locking system shall be provided only for access to roof, as a first line of security. The locking system shall detect and send alerts to a backend monitoring station in the event of abnormal events such as forced entry, access by unauthorised personnel and tampering of the system. This locking system shall have a comprehensive audit trail.

Singapore Standard SS 636 : 2018
Amendment No. 4

5. Page 29, 7.3.9

Insert the following new clause 7.3.9 after 7.3.8:

The manufacturer's or supplier's specifications and instructions of all water fittings and materials shall be strictly followed during installation, maintenance, inspection, replacement and repairs.

6. Page 52, 10.4.11

Replace clause 10.4.11 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 properly secured using stainless steel clips that are in good condition and have not been tampered with.



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Background

Intent: To Enhance Water Tank Security

- Water tank security is critical as it has a direct impact on the quality of water supply to consumers
- PUB collaborated with HDB to explore technological solutions such as Facial Recognition System (FRS) to mitigate the risk of unauthorized access into the restricted areas within HDB blocks given existing measures
- Following a successful pilot trial at Punggol Northshore, HDB has implemented FRS for new HDB BTOs launched from Nov 2020
- SS 636 (Code of Practice for Water Services) amended to make it mandatory for FRS to be installed at all buildings with water tanks except landed residential properties

HDB Pump Room
(housing low level tank)

PUB

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Singapore Standard SS 636 - Amendment No. 4 July 2021

Replacement of clause 7.1.19 (b)

7.1.19 For water tanks in developments other than landed residential premises:

(a) 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 equipment for telecommunications, lifts, firefighting or ACMV. The enclosure for water storage tanks shall not be used for storage of items such as flammable liquids or chemicals.

(b) 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).

(c) 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.

4. Page 27, 7.1.19
Replace clause 7.1.19 (b) with:
(b) The access door at each tank enclosure (e.g. fencing gate) and its ancillary equipment including all water tank covers 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). Alternatively, smart / intelligent biometric locking systems affording equivalent level of security shall be provided.

For access doors and openings to the rooms / enclosures housing the water tanks, an intelligent access / locking system with facial recognition and remote surveillance capabilities shall be provided, and this can replace the mechanical lock and key system. Where multiple roof tanks enclosures are provided at the rooftop, the intelligent access / locking system shall be provided only for access to roof, as a first line of security. The locking system shall detect and send alerts to a backend monitoring station in the event of abnormal events such as forced entry, access by unauthorised personnel and tampering of the system. This locking system shall have a comprehensive audit trail.

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Enhanced Security Measures for Water Tanks

A Facial Recognition System (FRS) shall be provided to enhance the security of potable water tanks. The FRS shall include (but not limited to) the following functionalities:-

- Enable secure access control via facial authentication
- Detect and send real-time alerts to a backend monitoring station in the event of abnormal activities such as:
 - a. Forced entry
 - b. Access by unauthorized personnel
 - c. Tampering of system
- Provide a comprehensive audit trail

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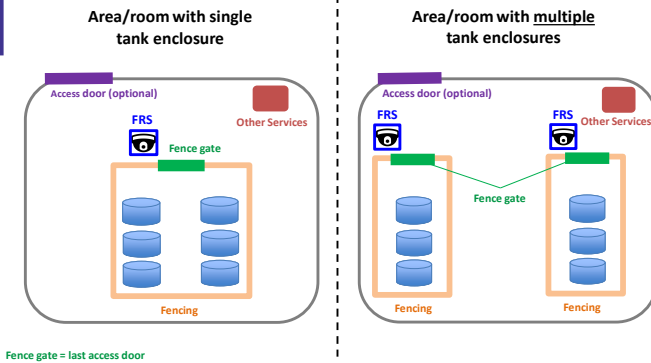
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Where shall FRS be installed? Which access door?

Tanks level	Are there multiple enclosures housing the water tanks?	Where shall FRS be installed?
Low level tanks	No (e.g. HDB Pump Room)	FRS shall be installed at the last access door leading to the low level tanks.
	Yes (e.g. 3 x tank clusters at Condo basement carpark)	FRS shall be installed at each of the last access door leading to the low level tanks (i.e. each tank cluster)
High level tanks	No (e.g. rooftop with 1 tank enclosure typically at small private buildings)	FRS shall be installed at the last access door leading to the high level tanks.
	Yes (e.g. most HDB rooftops)	FRS can be provided at the common access door to the roof . Not compulsory to install FRS at each of the last access door to the high level tanks.

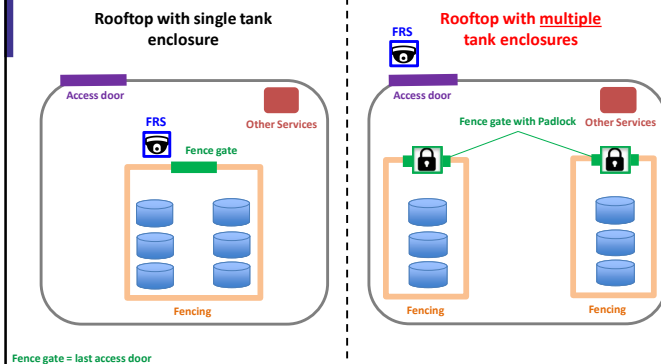
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Schematic for Low level tanks



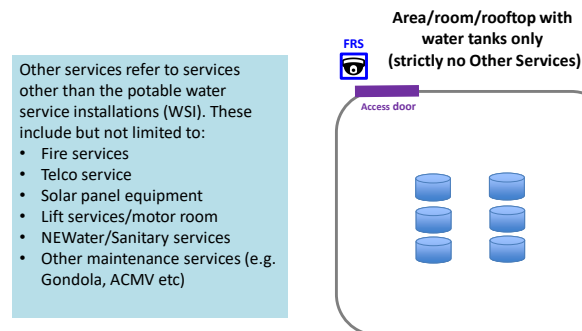
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Schematic for High level tanks



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What if there are no Other Services?



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FAQs

1. When will the new security requirements (i.e. FRS) be enforced?

The requirements strictly apply to projects where the Notification of Water Service Installation (WSI) Works By Professional Engineer is submitted after **1 April 2022**. We will issue a circular in Dec 2021 to notify the industry on the new requirements.

2. Where shall FRS be installed for Intermediate level tanks?

Same as Low level tanks. FRS shall be installed at the last access door leading to the intermediate level tanks. If there are **multiple enclosures, each of the last access door** shall be provided with FRS.

3. Why are there different requirements for low level and high level tanks?

Low level tanks and intermediate tanks are generally more accessible compared to high level tanks. For example, low level tanks are typically located at the basement carpark whereas high level tanks are housed within the rooftop with limited access (accessible by maintenance personnel only).

4. Who maintains the FRS?

It is the legal responsibility of the Town Councils, MCSTs and building owners to ensure proper security of the water tanks including the maintenance of the FRS within their premises.

FAQs

5. "Alternatively, smart / intelligent biometric locking systems affording equivalent level of security shall be provided." Is biometric only limited to fingerprint access?

If there are multiple water tank enclosures provided at the rooftop, FRS can be provided at the common access to roof, as a first line of security. In this case, the access door at each tank enclosure can be secured using conventional mechanical locking system OR other forms of biometric security solutions such as fingerprint, iris or even facial recognition technology.

Similarly, biometric locks can also be installed at all water tank covers (i.e. replace conventional padlock).

6. Does this mean that no more conventional mechanical locking system is allowed?

If there are multiple water tank enclosures provided at the rooftop, FRS can be provided at the common access to roof, as a first line of security. It is **not compulsory** to install FRS at each water tank enclosure (i.e. conventional mechanical locking system is still allowed at fence gates).

7. Are there any specific locations where the FRS cannot be installed? Can the FRS be installed at any part of the common access to the roof?

To comply with the Fire Code, the FRS should NOT be installed directly in front or adjacent to the exit door which leads to the common corridor. Instead, it should be installed at a higher position, as close to the rooftop level as possible. If in doubt, please approach SCDF Fire Safety Department (FSD) for clarification.

FAQs

8. Must be FRS record video footage at times even when it is not in use? How long must the footage be kept?

While recommended, it is not compulsory for the FRS to function as a live CCTV. The FRS should only capture the essential moments with the necessary date/time stamps (e.g. short video clips during point of access, abnormal events such as brute forced entry, when the access door is open etc.).

Should the FRS double as a live CCTV, the CCTV footage should be kept for a month (i.e. 30 days), which is the standard industry practice.

Notwithstanding, the backend system should keep all access records (in soft copy written format) of persons granted access to the restricted areas housing the water tanks for a minimum period of 1 year.

Summary of Water Tank Security Measures

Security Components	Measures
Detect & Respond (Infrastructural & Operational)	<ul style="list-style-type: none"> FRS at access doors housing water tanks (NEW) Building owners to timely respond and investigate into alerts of abnormal events triggered by FRS
Deter & Delay (Infrastructural)	<ul style="list-style-type: none"> Locks with non-duplicable keys at access doors & tank covers Stainless steel brackets at tank covers Dedicated fencing enclosure to segregate water tanks (Notification submitted after March 2015)
Deter & Delay (Operational)	<ul style="list-style-type: none"> Building owners to keep proper access records (e.g. key movement book) Building owners to conduct regular checks at water tank areas

