

PLEASE ADDRESS ANY CORRESPONDENCE TO WATER SUPPLY (NETWORK) DEPARTMENT

Your Ref :

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Date : 21 Nov 2019 E-mail : noryati_abdullah@pub.gov.sg

To all relevant water fittings suppliers, water tank suppliers, test laboratories, certification bodies for WELS, Singapore Sanitary Ware Importers & Exporters' Association (SSWIEA), Singapore Plumbing Society (SPS), Licensed Plumbers, Professional Engineers and relevant Government Agencies, Statutory Board, M&E Consultants, Associations and Organisations.

Dear Sir/Madam

UPDATED STIPULATED STANDARDS AND REQUIREMENTS FOR STAINLESS STEEL SECTIONAL WATER STORAGE TANKS FOR POTABLE WATER USE

This circular updates the industry on the latest standards for the supply of stainless steel sectional potable water tank in Singapore, and the phasing out of the use of corrugated tank roof cover used on stainless steel water tanks in view of the lapses found during PUB's water tank inspections.

2 Our inspections revealed that there were corrosions found on the corrugated epoxy-bonded galvanised tank roof covers used on stainless steel water tanks (refer to **Annex A** on the photos), despite these tanks being recently certified by Licensed Plumbers as fit for use. PUB takes a serious view on this, as the gaps on the corroded tank roof covers may lead to the ingress of foreign matters into the water tank with potential impact on water quality. With immediate effect, corrugated epoxy-bonded galvanised tank roof cover used on stainless steel water tanks are not allowed for supply and installation in Singapore.

3 **With effect from 1 Jan 2020 (date of test report)**, only stainless steel sectional water storage tanks which have been tested for compliance with BS EN 10088:Part 2:2014 (for stainless steel material) and have met all requirements stated in the attached **Annex C** shall be allowed for supply for potable water use in Singapore. The stainless steel sectional water tanks shall be in full stainless steel material (i.e. tank body, bottom panel and tank roof-cover shall be of stainless steel). All stainless steel water tank material tested to BS EN BS EN 10088 Part 2:1995 shall no longer be allowed for supply and installation in Singapore. Please be reminded that stainless steel material shall be of grade 316 or better. (Refer to **Annex B** on a sample picture of a full stainless steel water tank).

4 Suppliers shall ensure due diligence to disseminate the contents in this circular to their distributors, retailers, wholesalers, manufacturers, members and other industry partners for their compliance. A copy of this circular can be downloaded from PUB's website at www.pub.gov.sg.

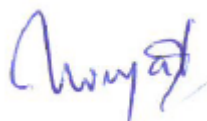
5 An updated copy of "PUB's Stipulation of Standards & Requirements of Water Fittings for Use in Potable Water Service Installation" booklet is also available for downloading at www.pub.gov.sg.

6 PUB conducts surveillance check and will not hesitate to take enforcement actions on the responsible parties for non-compliance with PUB's requirements.

7 If you have any queries concerning this circular or need further clarification or assistance, please do not hesitate to contact any of the officers listed below.

Name of officer	Email	Contact no.
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Yours faithfully



NORYATI ABDULLAH
SENIOR ENGINEER (INSPECTORATE)
for DIRECTOR
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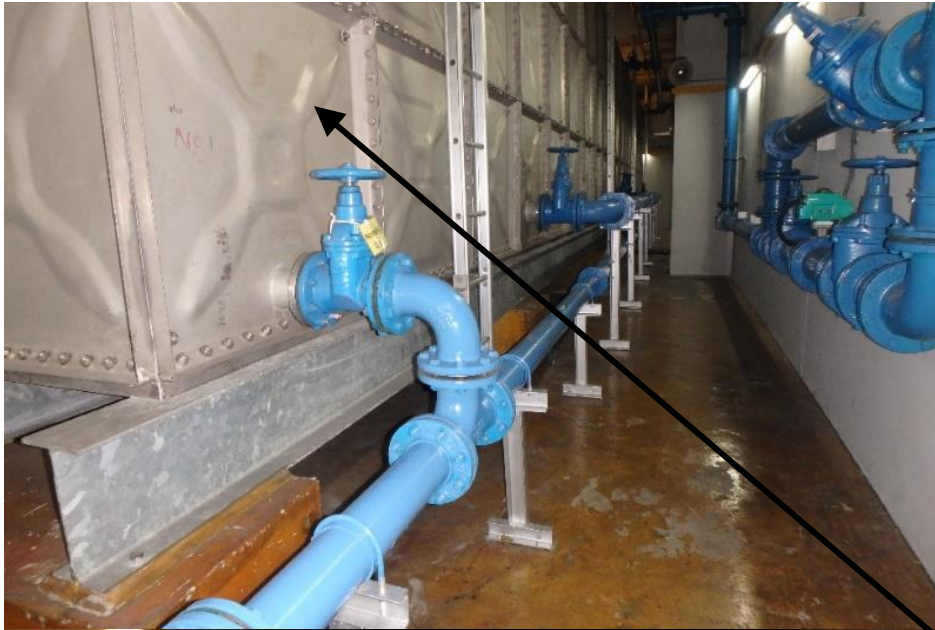
Enclosed.

Annex A



Corroded corrugated epoxy-bonded galvanised roof cover with gaps of stainless steel water tank body.

Annex B



Full stainless steel water tank (i.e. tank body, drainage panel, bottom panel and tank roof cover shall be of grade 316 or better).

Annex C

PUB's Stipulated Standards and Requirements for Stainless Steel Sectional Water Storage Tank

Standards to comply with for stainless steel sectional water tanks	Requirements and test methods
BS EN 10088 Part 2 : 2014 (for stainless steel panel material)	Clause 7.4.1 – Chemical composition Clause 7.4.2 – Tensile strength at room temperature (EN ISO 6892-1:2016) Clause 7.4.4 – Impact test (EN ISO 148-1:2016) Clause 7.4.5 – Hardness test (EN 6507-1:2005, EN ISO 6508-1:2016, or EN 6506-1:2014) Clause 7.4.6 – Resistance to intergranular corrosion test (EN ISO 3651-2: 1998) Clause 7.4.7 – Dimension test
<p>Additionally, the supply and installation of the stainless steel water tank shall also comply with the following:</p> <ol style="list-style-type: none"> 1) Stainless steel water tank material shall be of grade 316 or better. The water tank shall be in full stainless steel material including, but not limited to the tank body, drainage panel, bottom panel and tank roof cover shall be of stainless steel. 2) Every stainless steel panel including, but not limited to, the tank body, drainage panel, bottom panel and tank roof cover shall be tested to the above standards, where applicable, if they are not identical (e.g. different in panel thickness, size, weight, design or material composition of panels, etc.). 3) Suppliers are also required to ensure the traceability of the stainless steel water tanks they supply for potable water use, and are required to maintain and keep proper records of the distributors, retailers, sellers, plumbing companies and any other persons/companies and the batch identification of the stainless steel water tanks. As part of ensuring the traceability, suppliers who are submitting their stainless steel water tank panels to accredited test laboratory for testing shall submit a written declaration to the accredited test laboratory on the following information /items: <ol style="list-style-type: none"> a) brand and/or model of the water tank; b) grade of stainless steel; c) manufacturer's name and country of origin; d) year of manufacture; e) clear and colour photographs of the stainless steel panel; f) panel size, nominal thickness (with tolerance) and weight for every tier including the drainage and the bottom panel, if applicable. <p>All of the above information shall be included in the test reports.</p> <ol style="list-style-type: none"> 4) Additionally, the stainless steel water tank including, but not limited to its associated parts, components, bolts and nuts, joints, tie rods, ball floats, valves, elastomeric seals, rubber gaskets, etc. shall also comply with the prevailing standards and requirements, where applicable, which is published in PUB's website at www.pub.gov.sg under Fittings & Standards Webpage. 	

Standards to comply with for stainless steel sectional water tanks	Requirements and test methods
	<p>5) Professional Engineers (PEs) for the specific projects shall ensure the following:</p> <ul style="list-style-type: none"> a) The water storage tanks are structurally sound with regards to hydrostatic, deflection and leakage, and shall also ensure that the water service installation (WSI) design works and the WSI works are done in compliance with the following: <ul style="list-style-type: none"> i. Public Utilities Act; ii. Public Utilities (Water Supply) Regulations; iii. Singapore Standards SS 636:2018 – Code of Practice for Water Services; and iv. PUB’s Stipulated Standards & Requirements for Water Fittings. b) Besides using compliant water fittings, you are also expected to work closely with your suppliers/installers to ensure proper onsite construction /installation amongst others, to ensure that the water tank is fit and safe for use. This will require you to inspect the water tanks when supplied to site, as well as to inspect/supervise the onsite installation work, amongst others, before submitting the Certificate of Satisfactory Completion for the projects. <p>6) Every stainless steel water tank supplied and installed shall be permanently and legibly marked as follows:</p> <ul style="list-style-type: none"> a) Manufacturer’s name; b) Manufacturer’s serial number; c) Date of manufacture; d) Tank depth; e) Gross capacity in cubic metres of tonnage; f) Effective capacity in cubic metres of tonnage; and g) Application of water tank (i.e. potable or non-potable, etc.). <p>Please also see PUB’s Circular dated 21 Nov 19 - Updated Stipulated Standards for Stainless Steel Water Tank” which is downloadable from PUB’s website at www.pub.gov.sg.</p>
