Guidelines for the Installation, Operation, and Maintenance of Strainers in Building Developments

1.0 Purpose

1.1 This document establishes guidelines for the installation, operation, and maintenance of strainers within fresh water plumbing systems of building developments.

1.2 The installation of 0.1mm strainers at strategic locations is recommended for all new buildings to enhance protection against sediment. For existing buildings, their installation is advised if visible particles are present in the internal plumbing, subject to site conditions.

1.3 These guidelines are designed to ensure the effective performance of strainers, safeguard water quality, and protect downstream equipment such as meters and pumps.

2.0 Installation

2.1 Strategic Location

Strainers should be installed at either of the following critical points:

(a) Before sump tanks: To protect the tanks from incoming sediment; or

(b) After sump tanks and before roof tanks: To capture sediment prior to the distribution system.

2.2 Technical Requirements

2.2.1 ***Sizing***: To mitigate pressure loss from potential clogging, the strainer is recommended to be sized at least one standard nominal size larger[1] than the upstream pipe diameter.

2.2.2 ***Maintenance Access***: Models with quick-opening covers are recommended to simplify and expedite routine maintenance.

2.2.3 ***Installation and Testing***:

(a) The strainer must be installed in accordance with the flow direction indicated on its body.

(b) Particular care must be taken to ensure the convex surface of the strainer basket faces the incoming flow (if applicable).

[1] Please refer to the category of the strainers for details.

(c) Upon installation, the strainer shell shall be pressure-tested to 1.5 times its nominal working pressure[2].

2.2.4 ***Bypass***: A bypass arrangement is recommended to maintain water supply during strainer maintenance.

2.2.5 ***Approval***: Strainers installed shall hold a valid WSD General Acceptance (GA). A list of GA-approved products is available on the WSD website[3].

2.2.6 Detailed technical specifications for 0.1mm aperture strainers are provided in the **Annex**.

2.3 Professional Advice

If in doubt regarding any aspect of the installation, consult and engage a licensed plumber. Their engagement is necessary for ensuring compliance and obtaining the required approvals from the authorities.

3.0 Operation and Maintenance

3.1 Maintenance Principle

To prevent clogging, hydraulic loss, and potential cross-contamination, responsible parties must maintain strainers in accordance with the manufacturer's instructions. Regular flushing is essential. Coordinating strainer cleansing with scheduled sump tank maintenance is recommended to minimise disruption to residents[4].

3.2 Cleansing Frequency

A general flushing frequency of every 3 to 6 months is recommended. However, more frequent cleansing may be necessary, depending on water quality conditions and the accumulated particulars collected at the fine aperture of the 0.1mm mesh.

3.3 Cleansing Procedures

The standard procedure for cleansing a strainer is as follows:

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[2] For example, for pressure rating of PN16, the testing pressure should be 16 bars × 1.5 = 24 bars.

[3] Please refer to the list: *https://www.wsd.gov.hk/en/plumbing-engineering/pipes-and-fittings-to-be-used-in-inside-service-or/general-acceptance/index.html*

[4] Please refer to "Fresh Water Plumbing Maintenance Guide" uploaded to the WSD website: *https://www.wsd.gov.hk/filemanager/en/share/pdf/FWPMGe.pdf*

1. Isolate the water supply using the upstream and downstream isolation valves.
2. Open the strainer cover and carefully remove the strainer basket.
3. Cleanse the basket thoroughly using high-pressure water.
4. Critically inspect the mesh for any damage (e.g. tearing, deformation) or residual debris.
5. If the mesh is damaged or cannot be fully cleansed, it must be replaced. A compromised mesh must not be reinstalled.
6. If the mesh is intact and clean, reassemble it carefully, ensuring all seals are properly seated.
7. Restore the water supply and check for leaks. Monitor water quality; if particles persist, drain and refill the relevant storage tank.

3.4 Mesh Replacement

The 0.1mm aperture mesh is a consumable item due to its fine nature and possibility to clogging and physical damage during operation. Responsible pearties shall ensure replacement meshes are readily available. As per section 3.3, any damaged mesh must be replaced immediately.

Table B2.1.1.3 Fitting materials for inside service and fire service

Valve/Strainer component materials	**Fresh water inside service**		**Salt water inside service**	**Fire service**	
	Cold water	**Hot water**		**Fresh water**	**Salt water**
G. Screen (strainers)					
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
H. Drain plug (strainers)					
Copper alloy – brass**	✓	✓	✓	✓	✓
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓
Copper alloy – bronze (gunmetal)	✓	✓	✓	✓	✓
Malleable iron (with coating)*	✓	✓	✓	✓	✓
I. Lever (ball float valve)					
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Copper alloy – brass**	✓	✓	✓	✓	✓
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓
Copper alloy – bronze (gunmetal)	✓	✓	✓	✓	✓

Category	Others
Type	Strainer
Prescribed Specification in WWR	BS EN 12266-1:2012 Industrial valves. Testing of metallic valves Pressure tests, test procedures and acceptance criteria. Mandatory requirements
Test item(s)	• Dimensions - (Based on Manufacturer Requirement) • Shell tightness to internal pressure - (BS EN 12266-1:2012) • Coating thickness - (WIS 4-52 -01 Appendix B) • Tensile test - (BS EN 1563:2011 for Spheroidal graphite cast irons / BS EN 1561:2011 for Grey cast irons) • Chemical composition - (for components: body, inner sleeve where applicable)