

<b>5</b>	<b>WATER USE</b>	<b>5.P PREREQUISITE</b>
		<b>WU P1 WATER QUALITY SURVEY</b>
	<b>EXCLUSIONS</b>	None.
	<b>OBJECTIVE</b>	Ensure that the quality of potable water delivered to building users is satisfactory.
	<b>REQUIREMENT</b>	Demonstrating that the quality of potable water meets the referenced drinking water quality standards at all points of use.
	<b>ASSESSMENT</b>	<p>The Client shall provide details of the analysis of samples taken from a selection of potable water outlets used to supply human consumption. Sampling should be systematic, such as described in ISO 5667 [1], but as a minimum samples shall be taken at all the farthest point(s) of use in the distribution system from the storage tank, and shall include sampling for each water supply tank used in the building. If water quality at all sample points meets with Water Supplies Department (WSD) Guidelines the requirement shall be fulfilled.</p>
	<b>BACKGROUND</b>	According to the agreement between Guangdong and Hong Kong, "all water supplies to Hong Kong will meet the water quality standard of Guangdong Province currently in force and will not be inferior to the Class II water quality standard stipulated in the Environmental Quality Standard for Surface Water GB 3838-83 published by the People's Republic of China in 1983" [2].
	<b>QUALITY OF WATER SUPPLIED FROM THE MAINLAND</b>	It is closely monitored by WSD on entering Hong Kong at reception points at Muk Wu Pumping Stations at the border and again at all treatment works receiving the raw water. Laboratory tests are performed daily on various parameters such as ammonia and manganese for monitoring because their levels in the raw water are useful reference for dosing of treatment chemicals. The sampling and testing frequencies of individual parameters vary from 4-monthly to three times per day, and if necessary as frequently as hourly. All raw water is delivered to water treatment works where it is treated to comply chemically and bacteriologically with the WHO Guidelines for Drinking-water Quality (2006) before being supplied to consumers.
	<b>SUPPLY QUALITY</b>	According to WSD [3] Hong Kong's water is of the safest quality and among the best in the world. However, it is affected in some instances by the inadequate maintenance of internal plumbing systems before it reaches customers' taps and this can cause discolouration of the water. To encourage building owners to maintain their plumbing systems properly and with the endorsement of the Advisory Committee on the Quality of Water Supplies (ACQWS), the Water Supplies Department launched the Fresh Water Plumbing Quality Maintenance Recognition Scheme [4] in 2002. Since 1 January 2008, the Scheme has been renamed the Quality Water Recognition Scheme for Buildings. Successful applicants will be awarded a Certificate to recognise proper maintenance of the plumbing systems inside a building for keeping the good quality of government-supplied water throughout the inside service up to the consumers' taps.

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- 1 ISO 5667-5: 1991. Water quality — Part 6: Sampling — Section 6.5 Guidance on sampling of drinking water and water used for food and beverage processing.
- 2 Water Supplies Department. ACQWS Paper No. 5. Raw Water Quality Monitoring in Hong Kong.
- 3 Water Supplies Department. Annual Report.  
[http://www.wsd.gov.hk/filemanager/en/share/annual\\_reports/rpt0203/pdf/08\\_water\\_quality.pdf](http://www.wsd.gov.hk/filemanager/en/share/annual_reports/rpt0203/pdf/08_water_quality.pdf)
- 4 Water Supplies Department. Fresh Water Plumbing Maintenance Guide.  
<http://www.wsd.gov.hk/filemanager/en/share/pdf/FWPMGe.pdf>

**PLUMBING  
INSTALLATIONS**

Section 14(3) of the Waterworks Ordinance (Chapter 102) empowers the Water Authority to prescribe the manner of construction or installation and the nature, size and quality of the pipes and fittings of an inside service or fire service for water supplies. All plumbing proposals for inside service and fire service are therefore subject to the approval of the Water Authority [5]. The Hong Kong Waterworks Standard Requirements is a set of normal requirements which are applicable to the installation of inside service and fire service in addition to the requirements that are set out in Schedule 2 of the Waterworks Regulations (Chapter 102) or modified under Regulation 25(1). Where necessary, additional requirements may also be imposed on an individual application for water supply, depending on the nature and type of the plumbing installations.

**SAMPLING**

Part 6 of ISO 5667 [2] establishes detailed principles to be applied to the design of sampling programmes, to sampling techniques and to the handling and preservation of samples of drinking water and water used for food and beverage processing (drinking water). It is important that the sampling purpose be defined as accurately as possible and that the measurements provide the required information in the most efficient and statistically representative manner.

5 Water Supplies Department. Hong Kong Waterworks Standards for Plumbing Installations in Buildings.  
[http://www.wsd.gov.hk/filemanager/en/content\\_149/hkwsre.pdf](http://www.wsd.gov.hk/filemanager/en/content_149/hkwsre.pdf)

## EU 1 Reduction of CO2 Emissions

### EU 1 - Option 2 Alternative Route: Passive Design

### EU 2 Peak electricity demand reduction

### EU 3 Embodied energy in building structural elements

### EU 6 Renewable Energy System

### EU 7 Air-conditioning units

### EU 9 Energy efficient appliances

### EU 10 Testing and Commissioning

### EU 11 Operation and Maintenance

### EU 12 Metering and monitoring

## Water Use

### WU P1 Water Quality Survey

#### #73. WU P1, Is water sample necessary to be taken from the supply point of WSD for water quality analysis under WU P1?

No, it is not necessary to take water sample from the supply point of WSD for water quality analysis under WU P1.

#### #74. WU P1, WU P2/WU 1, For BEAM Plus New Buildings / Existing Buildings Version 1.1 and 1.2, is a conceptual plumbing sketch satisfactory for PA stage?

No. The BEAM Plus requirement stipulates Main Contract documentation shall be provided, that means for PA tender stage, Contract specification, Plumbing Schematic, Plumbing layout drawings shall be submitted.

The standard for the schematic drawings (including vertical plumbing line diagrams (VPLD)) and layout drawings shall be at least WSD submission standard.

The Applicant shall provide clear and concise substantiation for every credit claimed, the submission shall be explained, comprehensive, with pertinent information highlighted and fully cross-referenced to all written submission. For example:

- Under the WU P1 - Water Quality Survey criteria should include the narrative, quality test parameters, the WSD standard plumbing schematic drawing and layout plans highlighting the water sampling locations, and clearly cross referenced to the submission;
- Under WU P2/WU 1 - Annual Water Consumption should include a descriptive narrative for the water saving philosophy, WSD standard plumbing schematic drawing (s) and plumbing layout drawings, highlighting tanks, pump(s), PRV(s), flow controllers, mpd level, operating pressure per floor, primary piping routes, and cross-referenced with all equipment schedules, sample technical catalogues, and calculations.

Conceptual documentation, and outline sketch type information does not meet the criteria.

(Released on 25 June 2015).

#### #148. WU P1, For BEAM Plus New Buildings Version 1.1 and 1.2 / WU P3, For BEAM Plus Existing Buildings Version 2.0 Comprehensive Scheme / WU 6, For BEAM Plus Existing Buildings Version 2.0 Selective Scheme, if any result(s) of the water sampling test(s) fails to comply with any of the acceptance criteria, what shall be the retesting arrangement for demonstrate compliance of the prerequisite / credit requirement?

The retesting arrangement shall follow the latest requirement / guideline from WSD. For instance, referring to the Guide to Application for Water Supply (November 2020 version):

- If any result(s) of metal parameter(s) at certain sampling location(s) fails to comply with the acceptance criteria, retesting of all parameters (i.e. metal, bacteriological, physical and chemical) at the same location(s) is required.
- For any failed sample(s) other than metal parameters, retesting for all parameters other than metal is required at the same location(s).

(Released on 28 January 2022)

### WU P2 Minimum water saving performance

### WU 1 Annual water use

### WU 3 Water Efficient Irrigation

### WU 5 Water efficient appliances



Circular Letter No.: 2016.130

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Application: BEAM Plus NB Version 1.1  
BEAM Plus NB Version 1.2

Effective Date: ALL BEAM Plus submissions after 25 January 2016

### Water Use (WU)

For the BEAM Plus Final Assessment, the Applicant shall demonstrate that the Plumbing System is complete, including but not limited to the following:

- 1) Declaration of compliance with the governing utility requirements including but not limited to the Waterworks Ordinance, Plumbing Regulations, Water Services Application Procedure and Circular Letters.

- 2) All government utility water meters and sub meters where fitted, are installed and operational.

- 3) All water storage tanks are installed, filled and operational.

- 4) All water fixtures shall be documented, installed and shall comply with the governing utility regulations, including but not limited to:

- i. All faucets/ taps for washbasin, kitchen sinks, bathroom sinks and janitor sinks;
- ii. All shower valves, shower heads and rain showers;
- iii. All flow controllers/ flow limiters;
- iv. All isolation valves, stop cocks and pressure reducing valves.

- 5) The plumbing system has been inspected and disinfected before the building is occupied.

- 6) All 'As-Built' plumbing schematic and layout drawings are provided.

Note: The governing utility in Hong Kong SAR shall be Water Supplies Department (WSD).

Signed: \_\_\_\_\_

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Vice Chairperson of Technical Review Committee