

## 服務範圍 Scope of Services

- 水質測試  
Water Quality Testing
- 空氣質素測試  
Air Quality Testing
- 抗菌劑效能測試  
Anti-microbial Effectiveness Test
- 拭子測試  
Swab Test



## 關於我們 About Us

「專業化驗有限公司」於2015年成立，榮獲由「香港認可處」所頒發之「香港實驗所認可計劃」認證資格。

我司為獨立私營實驗室，致力為客戶提供可靠、精準及優質的檢測服務。服務範疇涵括多項環境衛生，如水質化驗、空氣質素監測、抗菌能力測試、實地採樣等..... 為配合市場趨勢，實驗室各部門更增設先進儀器，並持續培訓技術專才。今年更得到同行及業界肯定，並獲由香港檢測和認證局所頒發之「2021-22年度檢測認證人力發展機構獎」。

Quality Pro Test-Consult Limited was established in 2015, and qualified the Hong Kong Laboratory Accreditation Scheme" certification by the "Hong Kong accreditation Service (HKAS).

As an independent commercial laboratory, QPT is committed to high-quality services with providing reliable and accurate testing results for our customers. We specialize on Public Hygiene such as Water Quality, Air Monitoring, Anti-microbial testing and field sampling etc....

In line with market trends, QPT has equipped advanced instruments and pursuing professional development by acquiring new skills and qualification of our technical professionals. This year, it has been recognized in the industry, and honourably as one of the recipients of "2021-2022 Testing and Certification Manpower Development Corporate Award" issued by the Hong Kong Council for Testing and Certification.

認證編號  
Certification No.  
HOKLAS 259



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## 簡介 Introduction



## 拭子測試 Swab Tests

### 抗菌效能測試 Anti-microbial Effectiveness Test



實驗會使用試驗組（含有抗菌劑）及對照組樣本（不含有抗菌劑），然後在微生物培養基上接種不同種類的細菌，經培養特定溫和及時間後，測量表面細菌的生長情況。

可檢測微生物：

- 金黃葡萄球菌 *Staphylococcus Aureus*
- 退伍軍人菌 *Legionella Pneumophila*
- 酵母&黴菌 *Yeast & Mould*
- 克雷伯氏肺炎桿菌 *Kiebsiella Pnemoniae*
- 綠膿桿菌 *Pseudomonas Aeruginosa*
- 大腸桿菌 *Escherichia coli*

## 水質測試 Water Quality Testing

食水	Portable Water
水沖廁及消防水	Non-potable Water
水塔水	Cooling Tower Water
泳池水	Pool Water
排放水	Effluent
污水	Wastewater

## 空氣質素測試 Air Quality Testing

- 香港辦公室及公眾場所室內空氣質素管理指引(2019年)
- 澳門一般公眾場所室內空氣質素指引
- 澳門娛樂場吸煙區應遵要求的規範  
第七條【空氣質量監測】  
(第296/2012號行政長官批示)  
及衛生局 第16/SS/2021號批示 附件二

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# 飲用水 Drinking Water

水務署應用了一套全面的水質監測系統，通過一系列檢測（共13個參數），涵蓋了香港飲用水標準。適用於新建及現有樓宇的淡水供應系統。

The Water Supplies Department has developed a comprehensive quality monitoring programme, HKWSD with 13 parameters in total for water quality surveillance. It's applicable to newly installed or replaced inside services for freshwater supply in occupied or unoccupied buildings.

參數 Parameter	飲用水(水務署) Drinking Water (WSD)	綠建環評 BEAM Plus 2.0
化學及物理測試 Chemical & Physical		
混濁度 Turbidity	●	●
色度 Colour	●	●
酸鹼值 pH Value	●	●
游離剩餘氯 Free Residual Chlorine	●	●
電導率 Conductivity	●	●
金屬測試 Metals		
鉛 Lead	●	●
鉻 Chromium	●	●
鎳 Nickel	●	●
鎘 Cadmium	●	●
銅 Copper	●	●
銻 Antimony	●	●
鐵 Iron		●
微生物測試 Bacteriological		
總菌數 HPC	●	●
埃希氏大腸桿菌 E.coli	●	●
總大腸桿菌 Total Coliform		●

# 綠建環評 BEAM Plus 2.0

綠建環評是香港針對綠色建築的評估工具。當中強調節約用水和提高飲用水質素。擁有綠色建築標籤的建築物，不論在規劃，設計，施工，管理，運作和維修上，建築對環境保護及質量更勝一籌。

The BEAM (Building Environmental Assessment Method) which is the Hong Kong assessment tool for green building. A building with a BEAM PLUS green label is a recognition of building with good practices in planning, design, consruction, management, operation and maintenance that turn in higher water quality and saving water.

準則建議根據  
 Guidelines aligned by  


 水務署  
 Water Supplies Department

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# 飲用水 Drinking Water



WSD, BEAM Plus, WELL v2



## 健康建築標準 WELL v2

由International WELL Building Institute (IWBI) 管理的《WELL建築標》是全球首個融合建築及身心健康的建築認證體系，從而提升可持續發展。檢測及監察建築物內影響身心健康的10個主要概念，包括空氣、水質、營養、光線、運動、熱舒適、聲環境、材料、精神及社區等多項元素。

當中有W01屬於基本日常用水及W02飲用水水質測試，主要量度對人體健康之有害物，包括：細菌、物理化學、化學、農藥及有機物污染物。

參數 Parameter
W01 Water Quality Indicator 基本水質
Turbidity
Coliform
W02 Drinking Water Quality (Chemical) 飲用水水質 (化驗測試)
Arsenic
Cadmium
Chromium
Copper
Fluoride
Lead
Mercury (total)
Nickel
Nitrate
Nitrite
Total chlorine
Residual (free) chlorine
Total trihalomethanes (TTHM, sum of dibromochloromethane, bromodichloromethane, chloroform and bromoform)
Haloacetic acids (HAA5, sum of chloroacetic, dichloroacetic, trichloroacetic, bromoacetic and dibromoacetic acids)

The WELL Building Standard is the world's first architectural benchmark focusing exclusively on human health and wellness to improve sustainability. It monitors features within ten key concepts of the built environment that impact human health and well-being. It includes air, water, nourishment, light, movement, thermal comfort, sound, materials, mind and community.

WELL WATER W01 and W02 features address the contaminant thresholds of Water quality for human contact and Drinking water that complies with health-base limit on chemical, physiochemical, pesticides and organics components.

參數 Parameter
W02 Drinking Water Quality (Pesticides) 飲用水水質 (農藥測試)
Aldrin and Dieldrin (combined)
Atrazine
Carbofuran
Chlordane
2,4-Dichlorophenoxyacetic acid (2,4-D)
Dichlorodiphenyltrichloroethane (DDT) and metabolites
Lindane
Pentachlorophenol (PCP)
W02 Drinking Water Quality (Organics) 飲用水水質 (有機污染物測試)
Benzene
Benzo[a]pyrene
Carbon tetrachloride
1,2-Dichloroethane
Tetrachloroethene
Toluene
Trichloroethene
2,4,6-Trichlorophenol
Vinyl Chloride
Xylenes (o-, m- and p-)

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# 冷卻水塔水

## Cooling Tower Water

冷卻塔是空調及工業使用的散熱設備。一般冷卻過程會產生霧氣，而冷卻水的溫度十分又適合退伍軍人桿菌滋長，如冷卻塔處理不當，將會是散播病菌的主要源頭。為保障公眾健康，機電工程處要求冷卻水及排放水須定期進行測試。

### 冷卻水水質指標

#### Cooling Water Quality

參數 Parameter
每月檢驗 Monthly sampling
水溫 Water Temperature
異養菌濃度 HCC *
電導率 Conductivity
總溶解物 Total dissolved solids
懸浮固體 Suspended solids
鈣硬度 Calcium hardness
酸鹼度 pH Value
Residual biocide concentration / Residual inhibitor concentration 游離殘餘殺菌劑濃度/ 游離殘餘抑制劑濃度
每季檢驗 Quarterly sampling
退伍軍人桿菌總濃度 * Total legionella count Sg1, Sg2-14, other species 其他物種
氯化物 Chloride
硫酸鹽 Sulphate
總含鐵量 Total iron
總鹼度 Total alkalinity

Cooling towers are commonly used for air conditioning and industrial cooling processes. However, the operation temperature of the coolant water is optimal to the growth of legionellae. If the fresh water-cooling towers are not properly operated, it could be sources of spreading air borne disease. For assure publichealth, regular testing of cooling water and bleed-off effluent should be carried out.

### 泄放水水質指標

#### Bleed off Water Quality

參數 Parameter
每季檢驗 Quarterly sampling
色度 Colour
混濁度 Turbidity
氣味值 Threshold Odour No
氨氮 Ammoniacal Nitrogen
懸浮固體 Suspended Solids
溶解氧 Dissolved Oxygen
五天生化需氧量 5-day Biochemical Oxygen Demand
化學需氧量 Chemical Oxygen Demand
合成洗滌劑 Synthetic Detergents
埃希氏大腸桿菌 E. coli

\* 異養菌和退伍軍人桿菌必須分別每個月及每三個月進行檢驗一次。  
HCC should be tested every month and legionella should be tested every three (3) months respectively.

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## 非飲用水

## Non-Drinking Water



Cooling Tower Water, Fresh Water Flushing,  
Fire Service, Pool Water and Effluent

## 泳池水 Pool Water

游泳池及浸浴池經常被視為傳播疾病的原頭。為保障使用者的健康，水質必須定期檢測以確保符合標準。根據香港游泳池條例(第132章CA)，游泳池持牌者須確保水質合乎要求。

Swimming and spa pools have often been cited as causes of water borne disease. According to the Hong Kong Swimming Pools Regulation (Chapter 132CA), the licensee of a swimming pool should make sure the water quality could meet the requirements and check regularly to safeguard the health of the users.

參數 Parameter
清澈標準 Standard of Clarity
混濁度 Turbidity
色度 Colour
酸鹼值 pH Value
細菌含量 Standard of Bacteriological quality
總菌數 HPC
埃希氏大腸桿菌 <i>E. coli</i>

## 食水沖廁和消防系統 Fresh Water Flushing and Fire Service Supply

根據水務署的指引，消防水和非飲用水需通過水質測試要求。該測試重於物理、化學和細菌一共七項參數。

In accordance with WSD's guideline, fire service supply and non-potable water are requested to fulfill the requirement on water quality testing. It's mainly focused on the analysis of Physical, Chemical and Bacteriological parameters only.

## 排放水 Effluent

除了住宅以外，所有污水排放，均須向環保署申領牌照及受管制。根據《水污染管制條例》(第358章)第21條《流出物標準技術備忘錄》，環保署對流出物排入穢水渠、雨水渠、內陸及海岸水域已制定了可接受限度。持牌人須按牌照內列明的條款例，定期採集樣本及進行物理、化學及微生物項目檢測，確保污水符合可排效要求。

All kinds of wastewater discharge are subject to control in HK, except domestic sewage into sewers. The technical memorandum section 21 of the Water Pollution Control Ordinance (Cap.358) sets the limits that make the effluent acceptable into foul sewers, storm water drains, inland and coastal waters. Discharger has to apply a licence from EPD and impose the standards requiring on controlling physical, chemical and microbial quality of effluent.

管制區的4個排放類別標準

Four types effluents discharge standards

- 排入穢水渠的流出物標準  
Standards for effluents discharged into foul sewers
- 排入穢水渠的流出物標準  
(有微生物處理程序的污水處理裝置)  
Standards for effluents discharged into foul sewers  
(leading into microbial sewage treatment plants)
- 排入內陸水域的流出物標準  
Standards for effluents discharged into inland waters
- 排入海岸水域的流出物標準  
Standards for effluents discharged into coastal waters

參數 Parameter
化學及物理測試 Chemical & Physical tests
混濁度 Turbidity
色度 Colour
酸鹼值 pH Value
游離剩餘氯 Free Residual Chlorine
電導率 Conductivity
細菌含量 Bacteriological tests
總菌數 HPC
埃希氏大腸桿菌 <i>E. coli</i>

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## 抗菌效能測試

# Incorporated Antimicrobial Activity Testing

隨著全球疫情爆發，大眾對環境衛生的意識大大提高。在各行各業中，尤其物業管理機構，為了管理公共環境衛生的同時，更要花不少心力在選購抗菌產品，才能為公共衛生把關。產品抗菌效能測試，是透過測試數據，讓用家可安心選擇產品。

On account of global outbreak, personal hygiene becomes hot topic. No matter brand owners, commercials and property managements play an important role for public health. Whether choosing the correct product for a better clean environment? We need data with scientific support. Antimicrobial activity testing will be a solution.



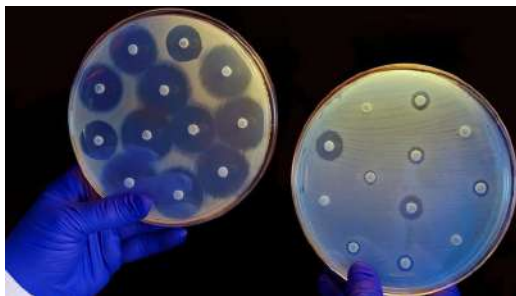
一般常見可作為檢測對象的微生物：

Common microorganisms can be used as detection:

- 金黃葡萄球菌 Staphylococcus Aureus
- 退伍軍人菌 Legionella Pneumophila
- 酵母&黴菌 Yeast & Mould
- 克雷伯氏肺炎桿菌 Klebsiella Pneumoniae
- 綠膿桿菌 Pseudomonas Aeruginosa
- 大腸桿菌 Escherichia coli

抗菌效能測試為定量測試，在特定的時間和條件下，比較試驗組(含有抗菌劑)與對照組(不含抗菌劑)的殘留菌量。經過計算，從而得出細菌減少的百分比，可評估抗菌產品的成效。測試可針對單一菌種，而被測試的產品則可以是液態或塗料等。

By comparison two groups of bacterial colonies between samples of treated and untreated antimicrobial agents, the antimicrobial ability can be revealed after incubation. The percent reduction of bacteria will be calculated. In general, the test can be performed on different disinfection product such as liquids or coatings.



測試前，可考慮以下產品應用特點：

Antimicrobial activity test variables:

- 抗菌劑的抗菌活性 Intrinsic biocidal activity
- 抗菌劑濃度 Concentration of the disinfectant
- 抗菌劑與細菌接觸時間 Contact time
- 抗菌劑接觸表面的材質和性質 Nature of the surface disinfected

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## 微生物測試 Microbiology Testing



Incorporated Antimicrobial Activity Testing,  
Swab Test, Indoor Air Quality

## 空氣質素 Air Quality (IAQ)

防患於未然，了解工作環境的空氣質素，有助減低細菌/疫情爆發，及時採取控制措施，並截斷源頭。良好的工作環境不僅可提高我們的舒適度、更可提升工作效率。

Prevention is better than remediation. By understanding air quality, we can create evidence-based infection control practices during pandemic. Good environment quality in working places not only enhance comfort level of the occupants but also increase their productivity.

### 空氣質測試項目 Air Quality Testing Items

參數 Parameter
一氧化碳 Carbon Monoxide (CO)
二氧化碳 Carbon Dioxide (CO2)
二氧化氮 Nitrogen Dioxide (NO2)
可吸入懸浮粒子(PM10) Respirable Suspended Particulates (PM10)
可吸入懸浮粒子 (PM2.5) Respirable Suspended Particulates (PM2.5)
總揮發性有機化合物 Total Volatile Organic Compounds (TVOC)
臭氧 Ozone(O3)
甲醛 Formaldehyde (HCHO)
氡氣 Radon (Rn)
空氣中細菌 Airborne Bacteria
霉菌 Mould (實地觀察評估) (Assessment in the form of walkthrough inspection)

## 拭子測試 Swab Test



「拭子測試」可用作定期監察表面細菌的殘留量，判斷出實際的環境衛生情況。及早發現問題所在，便可選取更有效的消毒方案，達致安全衛生管理目的。

Effective hygiene control is urgently need to all sectors in our community. The routine disinfection implemented does safeguard our health to against bacteria? Environmental swabbing would be an effective way to estimate the amount of microorganism existence in the areas we exposed. It does helps to monitor and evaluate the effectiveness of existing cleansing procedure whilst identify the problems at earliest stage.

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