

Supplementary Materials: Indoor Air Quality (IAQ) Management in Hong Kong: The Way Forward

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Table S1: Recommended measurement methods for IAQ parameters in reviewed IAQ management policies and standards.

Minimum number of sampling points

Place	IAQ management policies	Total floor area (m ²)	Minimum number of sampling points
Hong Kong	IAQ Certification Scheme	< 3,000	1 per 500 m ²
		3,000 - < 5,000	8
		5,000 - < 10,000	12
		10,000 - < 15,000	15
		15,000 - < 20,000	18
		20,000 - < 30,000	21
		≥ 30,000	1 per 1,200 m ²
South Korea	Indoor Air Quality Control Act	≤10,000	2
		> 10,000 - ≤ 20,000	3
		> 20,000	4
Taiwan	Indoor Air Quality Management Act	≤ 5,000	1
		> 5,000 - ≤ 15,000	2
		> 15,000 - ≤ 30,000	3
		> 30,000	4

Sampling collection location and conditions

Place	IAQ management policies	Requirement
Finland	Classification of Indoor Climate, Construction Cleanliness, and Finishing Materials	<p>The target values apply to the zone of occupancy of a room which usually extends from the floor surface up to 1.8 m from it. It begins 0.6 m from the walls.</p> <hr/> <p>Sampling points should in general be chosen using the following criteria:</p> <ul style="list-style-type: none"> • Distributed among individual MVAC zones; • Include areas under complaints; and • Cover areas with both high and low occupant density. <hr/> <p>During field data collection, monitors should be placed at the selected sampling locations using the following general guidelines:</p> <ul style="list-style-type: none"> • Representing the primary workstation layout and work activities; • Of minimal disturbance of work activities within the study area; • At least 0.5 m from corners or windows; • At least 0.5 m from walls, partitions, and other vertical surfaces (e.g. file cabinets);
Hong Kong	IAQ Certification Scheme	<ul style="list-style-type: none"> • Not directly in front of air supply diffusers, induction units, floor fans, or heaters, or the exhaled breath of the operator, etc.; • Not under direct sunlight that may impact instrumentation; • Preferably not in hallways or passageways; • At least 1 m away from localised IAQ pollutant sources such as photocopies, printers, etc.; • Not within 3 m of an elevator if sampled at a corridor/lobby; • Not within 2 m of doors; • Not obstructive to, or interfering with, occupant egresses from the study area under normal or emergency situations; • Not at the junction connected to stations of public transport facilities; and • Placing inlets of samplers/monitors at a height of about 1.1 m above the floor. <hr/> <p>A place that can represent the pollution level of the target facility and where there are many people using the facility.</p> <hr/> <p>There should be no direct source of pollutants in the adjacent area, and the sample is collected at a height of 1.2 to 1.5 m from the floor at the centre point of the sampling point.</p> <hr/> <p>A place as far away as possible from natural ventilation or mechanical ventilation equipment.</p> <hr/> <p>Conducted in an actual operating environment within the time the facility is actually operating.</p> <hr/>
South Korea	Indoor Air Quality Control Act	<hr/> <p>Areas with large occupancy and traffic.</p> <hr/> <p>At least 3 m away from the doorway, elevator, or the vent of the external air intake facility and the openable window.</p> <hr/> <p>At a distance of 1.5 to 3 m from the floor.</p> <hr/>
Taiwan	Indoor Air Quality Management Act	

Detection method

Detection method											
Place	IAQ management policies	PM ₁₀ & PM _{2.5}	CO ₂	CO	HCHO	NO ₂	O ₃	Rn	TVOC	bacteria	mould
Australia	National Construction Code	Gravimetric, optical, or microbalance principles	Infrared analysers	Infrared analysers	Handheld instruments, or laboratory analysis	Infrared analysers	-	-	Handheld instruments, or laboratory analysis	-	-
China	Hygiene Indicators and Limits for Public Places	Impact weighting method	Non-dispersive infrared method	Non-dispersive infrared method	AHMT spectrophotometry, MBTH spectrophotometry, or high-performance liquid chromatography	Saltzman method, or chemiluminescence	Indigo disulfonate spectrophotometry, or UV-Vis Spectroscopy	Alpha trail detection method, continuous measurement, or charcoal canister	Tenax GR thermal desorption-gas chromatography mass spectrometry	Collision law	Collision law
Hong Kong	IAQ Certification Scheme	Gravimetric, optical, or piezoelectric	Non-dispersive infrared method, or electrochemical	-	High-performance liquid chromatography	Absorbent filter containing triethanolamine followed by spectrophotometry, or real-time portable analyser	Heated metal oxide semiconductor, electrochemical, UV photometric, or chemiluminescence	Alpha trail detection method, or charcoal canister	Whole air sampling followed by direct flame ionization detection, PID, or FID detector	Andersen multi-hole impactor, Reuter Centrifugal Sample, Surface Air System bioaerosol sampler, or cyclone scrubber	Checklist
South Korea	Indoor Air Quality Control Act	Weight method	Non-dispersive infrared method	Non-dispersive infrared method	2,4 DNPH cartridge and liquid chromatographic method	Chemiluminescence	-	Alpha trail detection method	Solid adsorption tube and gas chromatography (MS/FID)	Collision law	Collision law