

INSPECTION OF VENTILATION SYSTEMS: NON-EUROPEAN

Max Sherman

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OBJECTIVE

Review regulations regarding inspection of stand-alone ventilation systems outside of Europe

Consider residential and commercial building types during whole life cycle

Countries covered: Australia, Canada, Korea, New Zealand, Singapore, USA

Results to be used by AIVC and EPBD Feasibility Study 19a

OVERVIEW OF FINDINGS

Intention: Virtually no regulation on inspection of ventilation systems (outside of Europe).

Advice: Several countries offer suggestion, guidance, options that can be used, but are not legally required.

Approach: Penetration of stand-alone, designed ventilation systems is low.

ASHRAE COMMONALITY

ASHRAE Standards are not regulations, but represent *standard of care* and can be met: Standard 62 series deals with ventilation: Standards 202 & 111 with HVAC commissioning.

ASHRAE Guidelines and Guides offer options and advice: *ASHRAE IAQ Guide*, guidelines 24, 42p deal with ventilation.

ASHRAE is most common source of HVAC standards and guidelines outside of Europe. Some are required, but none nationally.

ASHRAE VENTILATION STANDARDS

- Commercial/institutional buildings: 62.1
- Requirements for start-up commissioning (initial inspection)
- Requirement that there be an Operations and Maintenance manual (on-going inspection)
- Companion guideline 42p
- Dwellings/Residential: 62.2
- Requires air flow rates be verified
- Requires that ventilation equipment meet certain standards (e.g. HVI 915, 916, 920; AMCA 300)
- Companion guideline 24

COUNTRIES

AUSTRALIA

Strong dependence on natural ventilation; few stand-alone ventilation systems otherwise

Standard AUS/NZ 1668 & 3666 includes mechanical ventilation; not mandatory and does not address inspection.

Commissioning is encouraged but not required; references to ASHRAE, CIBSE (Code A) and AIRAH (DA 27, 28)

CANADA

Regulations are local not national. International Code Council documents used as model codes in addition to National Building Code of Canada

Commercial-Institutional buildings usually use ASHRAE Standard 62.1

Residential buildings use Guideline F326 on residential mechanical ventilation systems, but may allow use of ASHRAE 62.2 as well.

REPUBLIC OF KOREA

Ventilation systems are mandated in many cases, particularly in large residential or commercial buildings, but inspection is not part of the requirement.

No requirements for small dwellings

In 2020 "The Act on the Building Mechanical System" will require ventilation system inspection, but the requirements are still being debated

NEW ZEALAND

Strong dependence on natural ventilation; few stand-alone ventilation systems. NZS 4303 provides guidance on rates.

Standard AUS/NZ 1668 & 3666 includes mechanical ventilation; not mandatory and does not address inspection.

New Zealand Building Code (Clause G4) regulates ventilation including several Acceptable Solutions. Suggests that CIBSE (Code A) can be used for compliance testing.

SINGAPORE

No specific requirements for inspection or commissioning of ventilation systems

Recommends appropriate ASHRAE Standards be used.

UNITED STATES

No national requirements—regulations (codes) are local. International Code Council provides model codes for jurisdictions to use. Few stand-alone ventilation systems.

Most commercial-institutional buildings designed to meet ASHRAE Standard 62.1. Might include inspection requirements

Some dwelling required to meet ASHRAE Standard 62.2, which is stand-alone. Commissioning, but not routine inspection is required.

SIMILARITIES

Stand-alone mechanical ventilation systems rare, except in high-rise dwellings; ASHRAE used for guidance. No direct use of (CEN or) ISO.

AUS & NZ are similar; fewest requirements, most use of natural ventilation; some CIBSE backup

CA & USA are similar: local codes; use of ICC model codes; references to ASHRAE

FUTURE POSSIBILITIES

Korea developing regulations for 2020 that should require inspections of ventilation systems

ASHRAE 62.1 improving Indoor Air Quality procedure, which will entail improvements to system inspections

ASHRAE 62.2 considering operations and maintenance procedures that could include inspection procedures

QUESTIONS

Thank You