

6

IEQ

6.4

VENTILATION

IEQ 9

INCREASED VENTILATION

EXCLUSIONS

Residential and similar buildings without central air conditioning.

OBJECTIVE

Ensure that ventilation systems provide for effective delivery to support the well being and comfort of occupants in normally occupied spaces.

CREDITS ATTAINABLE

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PREREQUISITES

Compliance with CAP 123J Building (Ventilating Systems) Regulations.

CREDIT REQUIREMENT

1 credit for demonstrating an outdoor ventilation rate that exceeds ASHRAE 62.1:2007 [1] requirements by at least 30%.

ASSESSMENT

The Client shall provide evidence in the form of a report prepared by a suitably qualified person detailing that the Client's specified criteria has been adopted for each category of space included in the project, through the submission of calculations and/or measurements in the specified sample of premises to demonstrate compliance.

Calculations should be based on the following table.

Spaces Identification ⁽¹⁾	Space Type ⁽²⁾	Occupant Density People/sq. m	Ventilation Rate/Person L/s	Rate/m ² L/s	Zone Air Distribution Effectiveness ⁽³⁾	System Ventilation Efficiency ⁽⁴⁾	Class of Air ⁽⁵⁾

1: List number or name of each ventilation zone, such as office number or name, retail space name, classroom number, etc

2: List occupancy category of the space from ASHRAE 62.1: 2007 Table 6-1 (Minimum ventilation rates in breathing zone) such as office space, retail sales, classroom, etc.

3: ASHRAE 62.1: 2007 Table 6-2 (Zone Air Distribution Effectiveness)

4: ASHRAE 62.1: 2007 Table 6-3 (System Ventilation Efficiency) or Appendix A

5: ASHRAE 62.1: 2007 Tables 5-2 (Airstreams) or 6-1; include justification for classification if not in these tables

The outcome of measurements shall demonstrate that the required amount of outdoor air corresponding to the corrected design ventilation rate is actually provided. Air flow measurements may be made using conventional procedures, such as described in ASHRAE 111 [2], or by tracer gas techniques in accordance with ASTM E 741 [3] or equivalent.

BACKGROUND

The purpose of this credit is to demonstrate the potential for improving indoor air quality through increased outdoor ventilation.

The current version of ASHRAE 62.1 [1] is considered a “code – minimum” standard [4]. There is concern that the ventilation rates calculated under the standard will have a negative impact on productivity and occupant well being. As an example, consider a typical Hong Kong

- 1 American Society of Heating Refrigeration and Air Conditioning Engineers. ASHRAE Standard 62.1-2007 Ventilation for Acceptable Indoor Air Quality, Atlanta 2007.
- 2 American Society of Heating Refrigeration and Air Conditioning Engineers. ASHRAE Standard 111. Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air Conditioning and Refrigeration Systems, Atlanta 1998
- 3 American Society for Testing and Materials. ASTM Standard E 741-00, Standard Test Methods for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution. Philadelphia, 2000.
- 4 Taylor, S.T., LEED and Standard 62.1, ASHRAE Journal, Vol. 47, No. 9, September 2005.

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

WU P2 Minimum water saving performance

WU 1 Annual water use

WU 3 Water Efficient Irrigation

WU 5 Water efficient appliances

Indoor Environmental Quality

IEQ P1 Minimum ventilation performance

IEQ 1 Security

IEQ 2 Plumbing and Drainage

IEQ 4 Waste Disposal Facilities

IEQ 5 Construction IAQ Management

IEQ 6 Outdoor Sources of Air Pollution

IEQ 7 Indoor Sources of Air Pollution

IEQ 9 Increased ventilation

#82. If a clubhouse is provided with VRV or split type units but with fresh air provided by PAU or fresh air fans, are IEQ P1 and IEQ 9 (NB) / IEQ 10 (EB) applicable?

If fresh air is provided to the clubhouse area:

i) Under Version 1.1, clubhouse is applicable unless the total CFA of the clubhouse is less than 10% of the total assessed area.

ii) Under Version 1.2, IEQ P1 and IEQ 9 (NB) / IEQ 10 (EB) are applicable and cannot be excluded from the assessment.

(Released on 26 February 2016)

#83. IEQ P1, IEQ 9 and IEQ 12a, For BEAM Plus New Buildings Version 1.1 and 1.2, should T&C records showing the measured flow rate of the Fresh Air Equipment such as Fresh Air Fan (FAF) or Primary Air Handling Unit (PAU) be submitted in the Final Assessment (FA) stage?

Yes. T&C records should be submitted to show that the Fresh Air Equipment has sufficient measured flow rate in compliance with the prescribed standard in BEAM Plus manual. In case that the fresh air flow rate cannot be ascertained from the outlet of the air diffusers, the measured flow rate at the nearest maintenance point in the premises/room can be accepted as an alternative.

(Released on 29 November 2019)

#150. IEQ 9 & 12a, For BEAM Plus New Buildings Version 1.1 and 1.2/ HWB 4, For BEAM Plus New Buildings Version 2.0, for development with bare shell spaces, can credit compliance be achieved through provision of fresh air louver?

No. Credit IEQ 9, IEQ 12a and HWB 4 cannot be achieved by the provision of fresh air louvre. The ventilation requirement of these credits can only be achieved through provision of fresh air equipment (such as PAU, AHU, FAF etc.) or by natural ventilation, subject to the credit requirement.

(Released on 28 January 2022)

IEQ 10 Background Ventilation

IEQ 11 Localised Ventilation

IEQ 12 Ventilation in Common Areas

IEQ 14 Thermal Comfort in Naturally Ventilated Premises

IEQ 15 Natural Lighting

IEQ 16 Interior Lighting in Normally Occupied Areas

IEQ 17 Interior Lighting in Areas not Normally Occupied

IEQ 18 Room Acoustics

IEQ 19 Noise Isolation

IEQ 20 Background Noise

IEQ 21 Indoor Vibration

IEQ 22 Access for Persons with Disability

IEQ 23 Amenity Features