

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

1

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

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

- American Society of Heating Refrigeration and Air Conditioning Engineers. ASHRAE Standard 62.1-2007 Ventilation for Acceptable Indoor Air Quality, Atlanta 2007.
- 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
- 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.
- Taylor, S.T., LEED and Standard 62.1, ASHRAE Journal, Vol. 47, No. 9, September 2005.