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IEQ

6.4 VENTILATION

IEQ 12 VENTILATION IN COMMON AREAS

EXCLUSIONS

Spaces covered under the section on IEQ 11 Localised Ventilation.

OBJECTIVE

Ensure adequate ventilation in common areas and circulation routes within premises and to avoid cross-contamination between areas.

CREDITS ATTAINABLE

1 + 1 BONUS

PREREQUISITES

Compliance with applicable regulations covering ventilation provisions in buildings.

CREDIT REQUIREMENT

a) Ventilation by any means

1 credit for demonstrating that all enclosed common areas in a building are provided with adequate ventilation.

b) Use of natural ventilation

1 BONUS credit where the provision for ventilation is by natural means.

Assessment

The Client shall provide evidence in form of a report prepared by a suitably qualified person detailing the design criteria that have been adopted for each type of common area included in the development, and the results of calculations, simulations and/or measurements in the specified sample of spaces to demonstrate compliance with the assessment criteria. Common areas include corridors, lift lobbies, entrance lobbies, etc. Staircases shall be excluded from the assessment.

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a) Ventilation by any means

Design ventilation rates shall be defined by the Client, but should comply with recommendations from recognised authorities, e.g. BS 5925 [1], ASHRAE 62 [2] or equivalent. Compliance shall be demonstrated by measurements on a representative sample of each type of space, including worst cases, under average wind conditions.

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b) Use of natural ventilation

Where natural ventilation is employed it shall demonstrate that the ventilation rate (a ACH of higher than 0.5) is achieved under average wind conditions in at least 80% of the common areas, aggregated by floor area. Compliance may be demonstrated by suitable commissioning measurements such as a tracer gas test [3] on a representative sample of spaces, including worst cases, or by appropriate modelling techniques, such as wind tunnel test, CFD or other computer models [4, 5].

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Outside air brought into common areas should be free from known or potential localised sources of pollution (e.g. motor vehicle exhaust, workshops, etc), and exhausted air should not contaminate public areas or occupied areas.

BACKGROUND

The Buildings Department seeks to improve building design in the

- 1 BS 5929: 1991 (Amendment No. 1) Code of practice for Ventilation Principles and designing for Natural Ventilation. British Standards Institute, London, 1995.
- 2 American Society of Heating, Refrigerating and Air Conditioning Engineers. ASHRAE 62-2007. Ventilation for Acceptable Indoor Air Quality. American Society of Heating, Refrigerating and Air Conditioning Engineers. Atlanta, 2007.
- 3 ASTM International. E 741-00. Standard Test Method for Determining Air Change in a Single Zone by means of a tracer Gas Dilution. 2000
- 4 ASTM International. ASTM E 2267-03. Specifying and Evaluating Performances of Single Family Attached and detached Dwellings – Indoor Air Quality. 2003.
- 5 American Society of Heating, Refrigerating and Air Conditioning Engineers. ASHRAE Fundamentals Handbook Chapter 26. Atlanta 2001.

- 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
- IEQ 10 Background Ventilation
- IEQ 11 Localised Ventilation
- IEQ 12 Ventilation in Common Areas

#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)

#97. IEQ 12, For BEAM Plus New Buildings Version 1.1 and 1.2, can lift lobby served by firemen's lift be exempted from the assessment?

Yes, provided that the firemen lift lobby is not located in the main circulation route of the building.

(Released on 2 June 2017)

#98. IEQ 12a, For BEAM Plus New Buildings Version 1.1 and 1.2, is enclosed common areas ventilated via "fresh air louver + EAF" / "transfer air duct" comply with BEAM Plus requirement?

Only main circulation areas, such as main entrance lobby and corridor at the front of house, need to be included in the assessment. These areas shall be provided with fresh air through fresh air equipment such as Fresh Air

Fan (FAF) or Primary Air Handling unit (PAU). "Fresh air louver + EAF" / "transfer air duct" are not acceptable since the fresh air quantity cannot be guaranteed.

(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 louver. 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 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



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Application: BEAM Plus NB Version 1.1 and 1.2

Effective Date: 28 January 2022

Updated Exclusion Clauses for IEQ Credits

1. **Technical Circular Letter No. 2016.134 dated 09 August 2016 will be withdrawn on the effective date.**
2. This Circular Letter clarifies the exclusion clause for the following credits:

Credits	New Exclusions
IEQ P1 IEQ 9	Residential premises, or Premises designed to utilise natural ventilation and without any fresh air provision ¹ .
IEQ 3	Residential premises, or Premises without any provision of air-conditioning equipment.
IEQ 5	Residential premises, or Premises without HVAC system.
IEQ 6	Residential premises, or Premises without any fresh air provision ¹ .
IEQ 7a IEQ 7b	Residential premises without any interior decoration, or Premises without any fresh air provision ¹ and interior decoration.
IEQ 10	Premises with fresh air provision ¹ .
IEQ 11b	Residential premises, or Premises without any future tenant (for example, single owner occupier premises).
IEQ 12	Premises without any enclosed common area in the main circulation route.
IEQ 13a	Normally occupied premises ² without any air-conditioning equipment installed and provided by the project proponent, or without any fresh air provision ¹ .
IEQ 13b	Normally occupied premises ² without any installation of air diffuser in the air-conditioning system.

¹ Fresh air provision means any fresh air equipment such as PAU, AHU, FAU, FAP, FAF, etc.; and/or premises with fresh air louvers, etc.

² Normally occupied premises are enclosed spaces / areas where people normally stay there for more than 1 hour per person per day on average.

Credits	New Exclusions
IEQ 14a	Normally occupied premises ² with fresh air provision ¹ .
IEQ 14b	Normally occupied premises ² with fresh air provision ¹ , or without any air-conditioning equipment installed and provided by the project proponent.
IEQ 16	Residential premises, hotels, apartment and premises where lighting installation will be provided by future tenant such as Retail and F&B ³ .
IEQ 21	Not normally occupied premises ² .



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Chairperson of Standards Sub-committee

³ The clause “For premises to be fitted out by tenants, compliance shall be confirmed if the technical details and contractual arrangements with tenants in respect of lighting installation are deemed to meet the assessment criteria.” in BEAM Plus Manual IEQ 16 becomes not applicable.