

6

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.

1

2

3

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.

4

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].

5

6

7

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.

Q21. EU 10e, For BEAM Plus New Buildings Version 1.1 & 1.2, What should be submitted to demonstrate credit compliance in the Provisional Assessment (PA) stage?

Q22. EU 12, For BEAM Plus New Buildings Version 1.1 & 1.2, What are the requirements for metering and monitoring for clubhouse and carpark?

Water Use

Q1. WU P1 & WU 1, Do I need to consider the water pressure indicated in the baseline figures for different water appliances when predicting the water consumption?

Q2. WU P1, Is water sample necessary to be taken from the supply point of WSD for water quality analysis under WU P1?

Q3. WU P1, WU P2/WU 1, For BEAM Plus New Buildings / Existing Buildings Version 1.1 and 1.2, is a conceptual plumbing sketch satisfactory for PA stage?

Q4. WU 5, For BEAM Plus New Buildings Version 1.2, how is WU 5 applied to different building types?

Q5. WU 5, For BEAM Plus New Buildings Version 1.1, how is WU 5 applied to different building types?

Q6. WU 5, For BEAM Plus New Buildings Version 1.1 & 1.2, how is WU 5 applied to different building types?

Q7. WU 5, For BEAM Plus New Buildings Version 1.1 & 1.2, what type of appliances shall be included into the assessment of this credit?

Q8. WU 5, For BEAM Plus New Buildings Version 1.1 & 1.2, what type of washing machine would meet the credit requirement and what type of substantiations shall be provided to justify for the performances of the washing machine?

Indoor Environmental Quality

Q1. IEQ P1, How to achieve the outdoor air quality standard in local context of Hong Kong?

Q2. IEQ P1, IEQ 6 and IEQ 7, For BEAM Plus New Buildings Version 1.2, please clarify the assessment criteria under the new Indoor Air Quality (IAQ) objectives (IAQ Objective 2019) under the Indoor Air Quality Certification Scheme for Offices and Public Places

Q3. 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?

Q4. 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)

Q5. IEQ 2, For BEAM Plus New Buildings Version 1.1 and 1.2, sub-item 7 “maintenance of water seals”, are water seal traps required for all floor drains?

Q6. Should the noise level of the ventilation system or de-odourising system be considered under IEQ 4 (NB and EB)?

Q7. IEQ 5, For BEAM Plus New Buildings Version 1.1 and 1.2, how frequent should the records/evidence be submitted to demonstrate the implementation of IAQ management practice during construction?

Q8. IEQ 6 & 7, For BEAM Plus New Buildings Version 1.1 and 1.2, is HOKLAS accredited laboratory considered as acceptable to conduct the measurement of airborne contaminants?

Q11. IEQ 7, For BEAM Plus New Buildings Version 1.1 and 1.2, is it necessary to demonstrate that the measurement is taken at background mode?

Q12. IEQ 8 (second Bonus credit), for BEAM Plus Existing Building Version 2.0 Comprehensive Scheme, whether the “Indoor Air Quality Certification Scheme for Office and Public Place” certificate should cover the whole development or part of the development:

Q13. IEQ 10, For BEAM Plus New Buildings Version 1.1 and 1.2, should domestic kitchen be considered as normally occupied premises?

Q14. IEQ 11a, for BEAM Plus New Buildings Version 1.1 & 1.2, if the Applicant does not provide any ventilation equipment for kitchen and toilet areas, should these areas be included in the assessment?

Q15. IEQ 11a, For BEAM Plus New Buildings Version 1.1 and 1.2, should T&C records of window fan/propeller fan without air duct required to be submitted in the Final Assessment?

Q16. IEQ 11b, For BEAM Plus New Buildings Version 1.1 & 1.2, is clubhouse applicable to this credit?

Q17. 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)

Q18. 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?

Q19. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2. what should be the duration of temperature measurement?

Q20. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?

Q21. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, can T&C records of split type A/C for residential portion be accepted as evidence to demonstrate the performance of the air-conditioning units?

Q22. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, is it necessary for an SQP to endorse the measurement records?

Q23. What features can be considered as glare control under IEQ 15 in BEAM Plus Version 1.1?

Q24. IEQ 15, For BEAM Plus NB V1.1 and 1.2, there are a number of methodologies in the computation of the average daylight factor from various software. Will it be acceptable if the output provides the average daylight factor for the entire area of a room?

Q25. IEQ 16&17, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected and what is the percentage of compliance of the sampling points in order to achieve the credit?

Q26. IEQ 16&17, For BEAM Plus New Buildings Version 1.1 and 1.2, should decorative lighting be assessed?

Q27. IEQ 18, 19, 20 & 21, For BEAM Plus New Buildings Version 1.1 and 1.2, what is the definition of “suitably qualified person” (SQP)?

Q28. IEQ 18, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?

Q29. IEQ 19, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?

Q11. IEQ 7, For BEAM Plus New Buildings Version 1.1 and 1.2, is it necessary to demonstrate that the measurement is taken at background mode?

Q12. IEQ 8 (second Bonus credit), for BEAM Plus Existing Building Version 2.0 Comprehensive Scheme, whether the “Indoor Air Quality Certification Scheme for Office and Public Place” certificate should cover the whole development or part of the development:

Q13. IEQ 10, For BEAM Plus New Buildings Version 1.1 and 1.2, should domestic kitchen be considered as normally occupied premises?

Q14. IEQ 11a, for BEAM Plus New Buildings Version 1.1 & 1.2, if the Applicant does not provide any ventilation equipment for kitchen and toilet areas, should these areas be included in the assessment?

Q15. IEQ 11a, For BEAM Plus New Buildings Version 1.1 and 1.2, should T&C records of window fan/propeller fan without air duct required to be submitted in the Final Assessment?

Q16. IEQ 11b, For BEAM Plus New Buildings Version 1.1 & 1.2, is clubhouse applicable to this credit?

Q17. 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?

Q18. 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)

Q19. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2. what should be the duration of temperature measurement?

Q20. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?

Q21. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, can T&C records of split type A/C for residential portion be accepted as evidence to demonstrate the performance of the air-conditioning units?

Q22. IEQ 14b, For BEAM Plus New Buildings Version 1.1 and 1.2, is it necessary for an SQP to endorse the measurement records?

Q23. What features can be considered as glare control under IEQ 15 in BEAM Plus Version 1.1?

Q24. IEQ 15, For BEAM Plus NB V1.1 and 1.2, there are a number of methodologies in the computation of the average daylight factor from various software. Will it be acceptable if the output provides the average daylight factor for the entire area of a room?

Q25. IEQ 16&17, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected and what is the percentage of compliance of the sampling points in order to achieve the credit?

Q26. IEQ 16&17, For BEAM Plus New Buildings Version 1.1 and 1.2, should decorative lighting be assessed?

Q27. IEQ 18, 19, 20 & 21, For BEAM Plus New Buildings Version 1.1 and 1.2, what is the definition of “suitably qualified person” (SQP)?

Q28. IEQ 18, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?

Q29. IEQ 19, For BEAM Plus New Buildings Version 1.1 and 1.2, how should the representative sampling points be selected?



Circular Letter No.: 2020.168

Issue Date: 5 June 2020

Application: BEAM Plus NB Version 1.1 and 1.2

Effective Date: 5 June 2020

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 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 any fresh air provision ¹ and 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.
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.

12

Ir SK Ho
Chairperson of Standards Sub-committee

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.