| v4 - LEED v4

Minimum indoor air quality performance

Required

Glossary

Requirements

Establishment

Mechanically ventilated spaces

For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), chose one of the following:

Case 1. Systems able to meet required outdoor airflow rates

Option 1. ASHRAE Standard 62.1-2010

Modify or maintain each outdoor air intake, supply air fan, and ventilation distribution system to meet the outdoor air intake flow rates, using the ASHRAE ventilation rate procedure or a local equivalent, whichever is more stringent and meet the minimum requirements of ASHRAE Standard 62.1–2010, Sections 4–7, Ventilation for Acceptable Indoor Air Quality (with errata), or a local equivalent, whichever is more stringent.

[India ACP: Mechanically Ventilated]

Option 2. CEN Standards EN 15251–2007 and EN 13779–2007

Projects outside the U.S. may instead meet the minimum outdoor air requirements of Annex B of Comité Européen de Normalisation (CEN) Standard EN 15251–2007, Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics; and meet the requirements of CEN Standard EN 13779–2007, Ventilation for nonresidential buildings, Performance requirements for ventilation and room conditioning systems, excluding Section 7.3, Thermal environment; 7.6, Acoustic environment; A.16; and A.17.

Case 2. Systems unable to meet required outdoor airflow rates

If meeting the outdoor airflow rates in Case 1 is not feasible because of the physical constraints of the existing ventilation system, complete an engineering assessment of the system's maximum outdoor air delivery rate. Supply the maximum possible to reach the minimum setpoint in Case 1 and not less than 10 cubic feet per minute (5 liters per second) of outdoor air per person.

Naturally ventilated spaces

For naturally ventilated spaces (and for mixed-mode systems when the mechanical ventilation is inactivated), determine the minimum outdoor air opening and space configuration requirements using the natural ventilation procedure from ASHRAE Standard 62.1–2010 or a local equivalent, whichever is more stringent. [Europe ACP: Arbeitsstaettenrichtlinie ASR 5], [India ACP: Naturally Ventilated NBC]

Confirm that natural ventilation is an effective strategy for the project by following the flow diagram in the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in Nondomestic Buildings, Figure 2.8 and meet the requirements of ASHRAE Standard 62.1–2010, Section 4, or a local equivalent, whichever is more stringent. [Europe ACP: Arbeitsstaettenrichtlinie ASR 5], [India ACP: Naturally Ventilated CPCB]

All spaces

The indoor air quality procedure defined in ASHRAE Standard 62.1–2010 may not be used to comply with this prerequisite.

Performance

Show compliance through measurements taken at the system level within five years of the end of the performance period.

Implement and maintain an HVAC system maintenance program, based on ASHRAE 62.1–2010, Section 8, or a local equivalent, whichever is more stringent, to ensure the proper operations and maintenance of HVAC components as they relate to outdoor air introduction and exhaust.

Alternative Compliance Paths (ACPs)

Europe ACP: Arbeitsstaettenrichtlinie ASR 5

Projects in Europe may use Arbeitsstaettenrichtlinie ASR 5 as a local equivalent to ASHRAE Standard 62.1-2010, natural ventilation procedure.

India ACP: Mechanically Ventilated

Projects in India may meet the following as a local equivalent to ASHRAE 62.1-2010:

- For single-zone and 100% outside air systems, National Building Code of India 2005 (NBC 2005) Table 4-air rate requirements in lieu of ASHRAE 62.1-2010 ventilation rate procedure. Only certain space types are eligible.
- Central Pollution Control Board (CPCB), National Ambient Air Quality Standards in lieu of ASHRAE 62.1-2010, Section 4.
- NBC 2005 Part 8, section 3, clause 3.2, with additional parameters, in lieu of ASHRAE 62.1-2010,

Minimum Requirements, Sections 5-7.

India ACP: Naturally Ventilated NBC

Projects in India may use NBC 2005 Part 8, Section 1, clauses 5.2.1-5.6 and Appendix A: Design for Natural Ventilation from Handbook on Functional Requirements of Buildings (other than Industrial Buildings), also known as SP 41, 1987 as a local equivalent to ASHRAE Standard 62.1-2010, natural ventilation procedure.

India ACP: Naturally Ventilated CPCB

Projects in India may compare outdoor air quality with the CPCB National Ambient Air Quality Standards in lieu of the U.S. national air quality standards as required in ASHRAE Standard 62.1-2010, Section 4.

Pilot Alternative Compliance Path Available

This credit has a pilot ACP available in the LEED Pilot Credit Library. See Indoor air quality procedure - alternative compliance path for more information

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