Thermal comfort - verification

EQ6.3 | Possible point

Glossary

Intent

Provide a comfortable thermal environment that supports and promotes occupant productivity and well-being and
provide for the assessment of building occupant's thermal comfort over time.

To provide for the assessment of building occupant thermal comfort over time.

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To provide for the assessment of building occupants' thermal comfort over time.

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Provide for the assessment of building thermal comfort over time.

Provide a thermally comfortable environment that supports the productivity and well-being of tenant space occupants.

Provide the occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the tenant space.

Provide a comfortable thermal environment that supports the productivity and well-being of building occupants.

Provide for the assessment of building thermal comfort over time.

Provide a thermally comfortable environment that supports the productivity and well-being of building occupants.

Provide for a thermally comfortable environment that supports the productive and healthy performance of the building occupants.

Requirements

Design heating, ventilating and air conditioning (HVAC) systems and the building envelope to meet the requirements of one of the options below, and local codes or current 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Table 2.1-2: Ventilation Requirements for Areas Affecting Patient Care in Hospitals and Outpatient Facilities), where local codes do not apply. Demonstrate design compliance in accordance with the Section 6.1.1 documentation.

Option 1. ASHRAE standard 55-2004 or non-U.S. equivalent

Meet the requirements of ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy (with errata but without addenda). Demonstrate design compliance in accordance with the Section 6.1.1 documentation. Projects outside the U.S. may use a local equivalent to ASHRAE Standard 55-2004 Thermal Comfort Conditions for Human Occupancy Section 6.1.1.

Option 2. ISO 7730: 2005 & CEN standard EN 15251: 2007

Projects outside the U.S. may earn this credit by designing heating, ventilating and air conditioning (HVAC) systems and the building envelope to meet the requirements of International Organization for Standardization (ISO) 7730: 2005 Ergonomics of the thermal environment, Analytical determination and interpretation of thermal comfort using calculation of the PMV and PPD indices and local thermal comfort criteria; and 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

Provide a permanent monitoring system to ensure that the building performs to the desired comfort criteria as determined above.

Agree to implement a thermal comfort survey of building occupants[2] within a period of six to 18 months after occupancy. The survey shall collect anonymous responses about thermal comfort in the building, including an assessment of overall satisfaction with thermal performance and identification of thermal comfort-related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. The plan shall include measurement of relevant environmental variables in problem areas in accordance with the standard selected above and 2010 FGI Guidelines for Design and Construction of Health Care Facilities.

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[1] Project teams wishing to use ASHRAE approved addenda for the purposes of this prerequisite may do so at their discretion. Addenda must be applied consistently across all LEED credits.

Achieve IEQ Credit 7.1: Thermal Comfort—Design

Provide a permanent monitoring system to ensure that building performance meets the desired comfort criteria as determined by IEQ Credit 7.1: Thermal Comfort—Design.

Agree to conduct a thermal comfort survey of building occupants within 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building, including an assessment of overall satisfaction with thermal performance and identification of thermal comfort-related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with the standard used for design in IEQ Credit 7.1: Thermal Comfort—Design.

Residential projects are not eligible for this credit.

Achieve IEQ Credit 7.1: Thermal Comfort—Design

Agree to conduct a thermal comfort survey of building occupants (adults and students of grades 6 and above) within 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building, including an assessment of overall satisfaction with thermal performance and identification of thermal comfort problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with the standard used for design in IEQ Credit 7.1: Thermal Comfort – Design.

Achieve IEQ Credit 7.1: Thermal Comfort – Design

Provide a permanent monitoring system and process for corrective action to ensure that building performance meets the desired comfort criteria as determined by IEQ Credit 7.1: Thermal Comfort—Design.

Agree to conduct a thermal comfort survey of tenant space occupants within 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the tenant space including an assessment of overall satisfaction with thermal performance and identification of thermal comfort problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the tenant space This plan should include measurement of relevant environmental variables in problem areas in accordance with the standard used for design in IEQ Credit 7.1: Thermal Comfort—Design.

Achieve IEQ Credit 7.1, Thermal Comfort—Design

AND
Provide a permanent monitoring system to ensure that building performance meets the desired comfort criteria as determined by IEQ Credit 7.1, Thermal Comfort—Design.

Agree to conduct a thermal comfort survey of building employees within a period of 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building including an assessment of overall satisfaction with thermal performance and identification of thermal comfort-related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with the standard used for design in IEQ Credit 7.1: Thermal Comfort—Design

Achieve IEQ Credit 7.1, Thermal Comfort—Design

AND
Provide a permanent monitoring system and process for corrective action to ensure that building performance meets the desired comfort criteria as determined by IEQ Credit 7.1, Thermal Comfort—Design.

Agree to conduct a thermal comfort survey of tenant space employees within 6 to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the tenant space including an assessment of overall satisfaction with thermal performance and identification of thermal comfort problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the tenant space. This plan should include measurement of relevant environmental variables in problem areas in accordance with the standard used for design in IEQ Credit 7.1: Thermal Comfort—Design.

1 point in addition to EQ credit 7.1.

Agree to implement a thermal comfort survey of building occupants within a period of six to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building including an assessment of overall satisfaction with thermal performance and identification of thermal comfort-related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with ASHRAE Standard 55-2004.

Provide a permanent monitoring system and process for corrective action to ensure performance to the desired comfort criteria as determined by EQ Credit 7.1, Thermal Comfort, Compliance.

For at least 75% of all regularly occupied areas:

- Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetrations)
  OR
- Using a computer simulation model, achieve at least 25 footcandles.

AND

- Provide daylight redirection and/or glare control devices to ensure daylight effectiveness.

Exceptions for areas where tasks would be hindered by the use of daylight will be considered on their merits.

Provide a permanent monitoring system to ensure building performance to the desired comfort criteria as determined by IEQ Credit 7.1, Thermal Comfort: Compliance.

Agree to implement a thermal comfort survey of building occupants (adults and students of grades 6 and above) within a period of six to 18 months after occupancy. This survey should collect anonymous responses about thermal comfort in the building including an assessment of overall satisfaction with thermal performance and identification of thermal comfort-related problems. Agree to develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with thermal comfort in the building. This plan should include measurement of relevant environmental variables in problem areas in accordance with ASHRAE Standard 55-2004.

Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and the effectiveness of humidification and/or dehumidification systems in the building.

Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and the effectiveness of humidification and/or dehumidification systems in the building.