



| v3 - LEED 2009

Thermal comfort - design and verification

EQc7 | Possible 1 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.

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 occupants² 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.

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.

² In acute care hospitals and outpatient healthcare projects, occupants are defined as full-time staff. For residential health care occupancies, such as long term care or rehabilitation facilities, occupants include both full-time staff and residents.