



LEED 2009 for Core and Shell Development

IEQ CREDIT 7: THERMAL COMFORT - DESIGN

All fields and uploads are required unless otherwise noted.

Note: The Tenant Sales and Lease Agreement compliance path is not available for this credit.

ALL PROJECTS

This static sample form has been modified for offline access. All sections of the form are visible. Sample forms are for reference only.

Select all that apply to the project building:

- ☐ The project building is mechanically ventilated, in part or in whole.
- ☐ The project building is naturally ventilated, in part or in whole.
- ☐ The project building is mechanically conditioned, in part or in whole.
- ☐ The project building is naturally conditioned, in part or in whole.

Note: This credit only applies to projects with mechanical and/or natural conditioning.

A floor plan for the project building indicating the areas served by a combination of natural and mechanical ventilation or conditioning systems is required to demonstrate credit compliance. The representative floor plans for the project building uploaded below is a linked submittal. If one is not present, you may upload one now.

Upload L-1. Provide representative floor plan(s) for the project building.

Files:

Select one of the following:

- ☐ The floor plan above shows the areas served by a combination of natural and mechanical ventilation or conditioning systems.
- ☐ A different document is better suited to satisfy the requirement.

MECHANICAL CONDITIONING

- ☐ Mechanical systems are purchased and installed as a part of the core and shell project scope.
- ☐ Mechanical systems are NOT purchased and installed as a part of the core and shell project scope.

Complete the following section for all mechanically conditioned spaces.

Table IEQc7-1. Metabolic Rate and Clothing Insulation

Space Type	Clothing Level (CLO)				Metabolic Rate (MET)
	Spring	Summer	Fall	Winter	

Source(s) of weather data used for design calculations:

Weather design conditions used for peak load calculations (0.5%, 1%, median of extremes, etc):

Cooling:

 degF

Heating:

 degF

Hours per typical year that outdoor temperature exceeds design conditions:

Cooling:

 hrs

Heating:

 hrs

Table IEQc7-2. Cooling Mode

Space Type	Design Operative Temperature (degF)*				Maximum Design Humidity (RH)				Design Air Speed (ft/min)			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter

* Operative temperature includes radiant effects. See ASHRAE Standard 55-2004, Section 5.2.1 for more information.

Table IEQc7-3. Heating Mode

Space Type	Design Operative Temperature (degF)*				Maximum Design Humidity (RH)				Design Air Speed (ft/min)			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter

* Operative temperature includes radiant effects. See ASHRAE Standard 55-2004, Section 5.2.1 for more information.

- ☐ The combinations of assumed personal factors, operative temperature, air speed, and humidity above are predicted to limit the percentage of dissatisfied people to less than 10% per Standard 55-2004.

Upload IEQc7-1. Provide supporting documentation. This may include PMV/PPD calculations, ASHRAE comfort tool results and/or a copy of Figure 5.2.1.1 of ASHRAE Standard 55 indicating that all design conditions fall within acceptable ranges.

Files:

LOCAL DISCOMFORT EFFECTS

- ☐ Local discomfort effects have been considered and are not likely to exceed Standard 55-2004 limits. When local discomfort effects are likely to occur, calculations were performed to demonstrate that the combination of assumed personal factors, operative temperature, air speed, and humidity above are predicted to limit the percentage of dissatisfied occupants to less than 10%.

Table IEQc7-4. Local Discomfort Effects

Local Discomfort Effect	Not Likely	Calculations Performed
Radiant temperature asymmetry	<input type="checkbox"/>	<input type="checkbox"/>
Vertical air temperature difference	<input type="checkbox"/>	<input type="checkbox"/>
Floor surface temperature	<input type="checkbox"/>	<input type="checkbox"/>
Draft	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CONDITIONING

Complete the following section for all naturally conditioned spaces.

For a typical year, lowest mean monthly outdoor temperature:

degF

For a typical year, highest mean monthly outdoor temperature:

degF

List the source(s) of weather data used for mean monthly outdoor temperature calculations

Confirm the following for the naturally conditioned spaces within the project building:

- ☐ The spaces have operable windows open to the outdoors readily adjustable by occupants.
- ☐ No mechanical cooling systems serve the spaces.
- ☐ No heating system is in operation when natural conditioning is used.
- ☐ Metabolic rates are expected to be from 1.0 to 1.3 MET.
- ☐ Occupants may freely adapt their clothing to the indoor and/or outdoor thermal conditions.
- ☐ Operative temperature is predicted to be within the 80% acceptability limits described in Figure 5.3 from ASHRAE 55-2004.

Upload IEQc7-2. Provide documentation with inputs and results of calculations or simulations. Include worst case design outdoor conditions and worst case predicted indoor conditions for each month. Show predicted worst case indoor conditions for each month per Figure 5.3 of ASHRAE Standard 55-2004.

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ADDITIONAL DETAILS

- ☐ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.

SPECIAL CIRCUMSTANCES

Describe the circumstances limiting the project team's ability to provide the submittals required in this form. Be sure to reference what additional documentation has been provided, if any. Non-standard documentation will be considered upon its merits.

Upload IEQc7-SC. Provide any additional documentation that supports the claim to special circumstances. (Optional)

Files:

- ☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

ALTERNATIVE COMPLIANCE PATH

Describe the alternative compliance path used by the project team. Include justification that this path meets the credit intent and requirements. Be sure to reference what additional documentation has been provided, if any. Non-standard documentation will be considered upon its merits.

Upload IEQc7-ACP. Provide any additional documents that support the alternative compliance path approach. (Optional)

Files:

SUMMARY

IEQ Credit 7: Thermal Comfort - Design Points Documented: