



IEQ CREDIT 7.1: THERMAL COMFORT - DESIGN

All fields and uploads are required unless otherwise noted.

ALL OPTIONS

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.

The content highlighted in yellow above is linked to IEQc1, IEQc2, IEQc5, IEQc6 & IEQp1.

Select one of the following:

- ☐ **Upload L-1** from PI Form 4 is a floor plan indicating the areas served by a combination of natural and mechanical ventilation or conditioning systems.

Files:

OR

- ☐ **Upload L-1.1** from IEQp1 is a floor plan for the project building indicating the areas served by a combination of natural and mechanical ventilation or conditioning systems.

Files:

Note: Complete the Mechanical Conditioning section for all mechanically conditioned spaces and the Natural Conditioning section for all naturally conditioned spaces.

MECHANICAL CONDITIONING

Note: Complete the following section for all mechanically conditioned spaces.

Select one of the following :

- ☐ The project will provide outputs from Load Calculation software or design spreadsheets that incorporate, at a minimum, space type, activity level, design operative temperature (heating/cooling), design humidity range (heating/cooling), and design air speed.
- ☐ The project will use Table IEQc7.1-1 to document space design parameters. Each room type in the project is only required to be listed once.

Upload IEQc7.1-1. Upload appropriate Load Calculation Software outputs or design spreadsheets.

Files:

Table IEQc7.1-1. Space Design Parameters

Space Type	Activity Level	Operative Temperature ¹ (degF)		Design Humidity Range (RH)		Design Air Speed at 3 ft ht (ft/min)
		Cooling	Heating	Cooling	Heating	

Notes:
1 See ASHRAE 55 Appendix C.

☐ The project building has been designed such that HVAC will meet space design parameters at both part- and full-load conditions.

Climatic design conditions used for peak load calculations (0.4%, 1%, median of extremes, etc):

Cooling: degF

Heating: degF

Upload IEQc7.1-2. Provide supporting documentation. This may include ASHRAE Thermal 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:

Verify the following conditions are met:

- ☐ 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 ASHRAE 55-2004.
- ☐ Local discomfort effects have been considered and are not likely to exceed Standard 55 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 IEQc7.1-2. Local Discomfort Effect

Local Discomfort Effect	Not Likely	Likely	Analysis Performed ¹
Radiant temperature asymmetry	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Vertical air temperature difference	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Floor surface temperature	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Draft	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Notes:
1 Required if effect is considered likely.

NATURAL CONDITIONING

Note: 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

The mean monthly outdoor temperature must be greater than 50 degrees F and less than 92.3 degrees F to document credit compliance using natural conditioning.

The lowest mean monthly outdoor temperature may not exceed the highest mean monthly outdoor temperature. Please revise.

Verify that all of the following conditions are met:

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

Upload IEQc7.1-3. 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 on Figure 5.3 of ASHRAE Standard 55-2004.

Files:

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 IEQc7.1-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 IEQc7.1-ACP. Provide any additional documents that support the alternative compliance path approach. (Optional)

Files:

SUMMARY

IEQ Credit 7.1: Thermal Comfort - Design Points Documented: