

T01.1 - Option 2: Long-term thermal data

Technical Document

WELL Building Standard™ version 2 (WELL v2™), Q1 2021 addenda



HOW TO USE THIS DOCUMENT:

This document is intended to serve as a guide on how to create a project **technical document** to **provide a thermal environment that the majority of building users find acceptable**.

This document is meant to demonstrate an acceptable degree of detail for a documentation submission. The Feature cannot be demonstrated solely through a confirmation that the requirements have been or will be implemented. The level of detail is up to the discretion of the project team, but the documents must include specific details demonstrating that the actual policies/protocols have been enacted in the project boundary.

This document and similar tools are intended to assist projects in their pursuit of WELL v2 but use of this document and/or similar tools are in no way a guarantee of achievement of any rating or designation, and no representation or warranty is made regarding the likelihood of achieving any rating or designation.

Note: The below document is based on the Q1 2021 addenda of the WELL Building Standard™ version 2 (WELL v2™). Project teams are required to implement the feature requirements from the addenda version assigned to their project or any more recent addenda version.

FEATURE PART REQUIREMENTS:

For All Spaces except Commercial Kitchen Spaces:

The following requirements are met:

- a. *Project meets Feature T06: Thermal Comfort Monitoring.*
- b. *Temperature and humidity data covering, at minimum, the previous six months satisfy one of the following ranges:*
 1. *One of the PMV or temperature ranges described in Option 1. Dry bulb temperature may be used in place of operative temperature. Naturally conditioned projects must also measure outdoor air temperature.*
 2. *Dry bulb temperature is between 70-77 °F for at least 90% of standard occupied hours. The designed air velocity is not more 40 fpm at 5.6 ft above the floor.*

WELL Core Guidance:

Meet these requirements in the whole building. Mechanically conditioned or mixed-mode ventilated spaces must provide heating and cooling capacity in leased spaces but are not required to install ducts in leased spaces. Performance testing will be conducted in regularly occupied non-leased spaces, if present.



The below sample documentation is intended to provide guidance in creating a technical document. It is not a template. You may note included components that are not required to demonstrate compliance with this Feature.

Example document for Feature 1, Part 1 - Option 2.b.1

Project: [INSERT PROJECT NAME]

Project description: *Ex: A two-story eco-friendly outdoor sporting goods retail store.*

Ventilation type: Natural ventilation

Date of documentation submission: *Ex: 4/01/2021*

Data dates: *Ex: 10/1/2020 – 3/31/2021*

Compliance with: T01.1 – Option 2.b.1

Outdoor air temperature: *Ex: Measured at building site*

Date	Time	Sensor Readings (degF)					Outdoor Temp	Acceptable Temp Range		In Range?
		Ground Floor - A	Ground Floor - B	First Floor - A	First Floor - B	First Floor - C		Min Temp	Max Temp	
<i>Ex: 10/1/21</i>	<i>Ex: 7:00 AM</i>	<i>Ex: 74.2</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.2</i>	<i>Ex: 75.3</i>	<i>Ex: 54.3</i>	<i>Ex: 64.7</i>	<i>Ex: 77.3</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 7:15 AM</i>	<i>Ex: 74.2</i>	<i>Ex: 71.4</i>	<i>Ex: 73.1</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 54.5</i>	<i>Ex: 64.8</i>	<i>Ex: 77.4</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 7:30 AM</i>	<i>Ex: 74.2</i>	<i>Ex: 71.3</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.2</i>	<i>Ex: 55.6</i>	<i>Ex: 65.1</i>	<i>Ex: 77.7</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 7:45 AM</i>	<i>Ex: 74.1</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 55.8</i>	<i>Ex: 65.2</i>	<i>Ex: 77.8</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 8:00 AM</i>	<i>Ex: 74.2</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 56.5</i>	<i>Ex: 65.4</i>	<i>Ex: 78.0</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 8:15 AM</i>	<i>Ex: 74.3</i>	<i>Ex: 71.4</i>	<i>Ex: 73.1</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 57.1</i>	<i>Ex: 65.6</i>	<i>Ex: 78.2</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 8:30 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.0</i>	<i>Ex: 75.1</i>	<i>Ex: 57.4</i>	<i>Ex: 65.7</i>	<i>Ex: 78.3</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 8:45 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 57.7</i>	<i>Ex: 65.8</i>	<i>Ex: 78.4</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 9:00 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.1</i>	<i>Ex: 57.8</i>	<i>Ex: 65.8</i>	<i>Ex: 78.4</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 9:15 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.5</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 75.2</i>	<i>Ex: 57.9</i>	<i>Ex: 65.8</i>	<i>Ex: 78.4</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 9:30 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.1</i>	<i>Ex: 76.0</i>	<i>Ex: 58.2</i>	<i>Ex: 65.9</i>	<i>Ex: 78.5</i>	<i>Yes</i>
<i>Ex: 10/1/21</i>	<i>Ex: 9:45 AM</i>	<i>Ex: 74.5</i>	<i>Ex: 71.4</i>	<i>Ex: 73.0</i>	<i>Ex: 74.2</i>	<i>Ex: 77.0</i>	<i>Ex: 58.4</i>	<i>Ex: 66.0</i>	<i>Ex: 78.6</i>	<i>Yes</i>
<i>Ex: [INSERT AT LEAST SIX MONTHS OF DATA TAKEN AT MINIMUM EVERY 15 MINUTES FOR ALL SENSORS DURING REGULARLY OCCUPIED HOURS]</i>										
All values in range?										Yes

Project: [INSERT PROJECT NAME]**Project description:** Ex: A 2-floor mixed use building with office space and a fine-dining restaurant that includes a commercial kitchen.**Ventilation type:** Mechanical ventilation**Date of documentation submission:** Ex: 4/01/2021**Data dates:** Ex: 10/1/2020 – 3/31/2021**Compliance with:** T01.1 – Option 2.b.2**Designed Air Velocity:** Ex: 35 fpm at 5.6 ft above the floor**Standard Operating Days and Hours:**

- Ex: Office: 7AM – 6PM, Monday-Friday
- Ex: Restaurant: 4PM – 12AM, Monday - Saturday

DATA READINGS FOR OFFICE SPACE

Date	Time	Sensor Readings (degF)							Range (degF)	Number of Out of Range Values
		Ground Floor 01	Ground Floor 02	Ground Floor 03	First Floor 01	First Floor 02	First Floor 03	Mezz. Floor 01		
Ex: 10/1/20	Ex: 7:00 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	Ex: 74.2	Ex: 75.3	Ex: 73.4	Ex: 73.9	70-77	Ex: 0
Ex: 10/1/20	Ex: 7:15 AM	Ex: 74.2	Ex: 71.4	Ex: 73.1	Ex: 74.1	Ex: 75.1	Ex: 73.5	Ex: 73.8	70-77	Ex: 0
Ex: 10/1/20	Ex: 7:30 AM	Ex: 74.2	Ex: 71.3	Ex: 73.0	Ex: 74.1	Ex: 75.2	Ex: 73.4	Ex: 73.8	70-77	Ex: 0
Ex: 10/1/20	Ex: 7:45 AM	Ex: 74.1	Ex: 71.4	Ex: 73.0	Ex: 74.1	Ex: 75.1	Ex: 73.4	Ex: 73.8	70-77	Ex: 0
Ex: 10/1/20	Ex: 8:00 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	Ex: 74.1	Ex: 75.1	Ex: 73.4	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 8:15 AM	Ex: 74.3	Ex: 71.4	Ex: 73.1	Ex: 74.1	Ex: 75.1	Ex: 73.4	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 8:30 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	Ex: 74.0	Ex: 75.1	Ex: 73.4	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 8:45 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	Ex: 74.1	Ex: 75.1	Ex: 73.3	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 9:00 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	Ex: 74.1	Ex: 75.1	Ex: 73.4	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 9:15 AM	Ex: 74.5	Ex: 71.5	Ex: 73.0	Ex: 74.1	Ex: 76.2	Ex: 73.4	Ex: 73.7	70-77	Ex: 0
Ex: 10/1/20	Ex: 9:30 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	Ex: 74.1	Ex: 78.0	Ex: 73.4	Ex: 73.7	70-77	Ex: 1
Ex: 10/1/20	Ex: 9:45 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	Ex: 74.2	Ex: 78.2	Ex: 73.4	Ex: 73.6	70-77	Ex: 1
Ex: [INSERT AT LEAST SIX MONTHS OF DATA TAKEN AT MINIMUM EVERY 15 MINUTES FOR ALL SENSORS DURING REGULARLY OCCUPIED HOURS]										
Number of hourly readings outside of temperature range:										Ex: 3,324
Total number of data points (standard occupied hours = 12 hours, 7 days per week for six months)										Ex: 61,152
Percentage of compliant data points:										Ex: 94.6%
Is project compliant more than 90% of standard occupied hours?:										Ex: Yes

DATA READINGS FOR RESTAURANT (AND COMMERCIAL KITCHEN)

Date	Time	Sensor Readings (degF)			Range (degF)	Sensor Readings (degF)		Thresh. (degF)	Any values out of range?
		Restaur. Sen-1	Restaur. Sen-2	Restaur. Sen-3		Com. Kitchen-1	Com. Kitchen-2		
Ex: 10/1/21	Ex: 7:00 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.3	Ex: 81.3	80	Ex: Yes
Ex: 10/1/21	Ex: 7:15 AM	Ex: 74.2	Ex: 71.4	Ex: 73.1	70-77	Ex: 75.1	Ex: 81.1	80	
Ex: 10/1/21	Ex: 7:30 AM	Ex: 74.2	Ex: 71.3	Ex: 73.0	70-77	Ex: 75.2	Ex: 78.9	80	
Ex: 10/1/21	Ex: 7:45 AM	Ex: 74.1	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.1	Ex: 79.0	80	
Ex: 10/1/21	Ex: 8:00 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.1	Ex: 79.1	80	Ex: No
Ex: 10/1/21	Ex: 8:15 AM	Ex: 74.3	Ex: 71.4	Ex: 73.1	70-77	Ex: 75.1	Ex: 79.0	80	
Ex: 10/1/21	Ex: 8:30 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.1	Ex: 78.9	80	
Ex: 10/1/21	Ex: 8:45 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.1	Ex: 78.9	80	
Ex: 10/1/21	Ex: 9:00 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	70-77	Ex: 75.1	Ex: 78.9	80	Ex: No
Ex: 10/1/21	Ex: 9:15 AM	Ex: 74.5	Ex: 71.5	Ex: 73.0	70-77	Ex: 75.2	Ex: 78.9	80	
Ex: 10/1/21	Ex: 9:30 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	70-77	Ex: 76.0	Ex: 79.0	80	
Ex: 10/1/21	Ex: 9:45 AM	Ex: 74.5	Ex: 71.4	Ex: 73.0	70-77	Ex: 77.0	Ex: 79.0	80	
Ex: 10/1/21	Ex: 10:00 AM	Ex: 74.2	Ex: 71.4	Ex: 73.1	70-77	Ex: 78.3	Ex: 79.1	80	Ex: No
Ex: 10/1/21	Ex: 10:15 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	70-77	Ex: 78.3	Ex: 79.1	80	
Ex: 10/1/21	Ex: 10:30 AM	Ex: 74.3	Ex: 71.4	Ex: 73.0	70-77	Ex: 77.0	Ex: 79.1	80	
Ex: 10/1/21	Ex: 10:45 AM	Ex: 74.2	Ex: 71.4	Ex: 73.0	70-77	Ex: 76.5	Ex: 79.2	80	
Ex: [INSERT AT LEAST SIX MONTHS OF DATA TAKEN AT MINIMUM EVERY 15 MINUTES FOR ALL SENSORS DURING REGULARLY OCCUPIED HOURS]									
Number of hours with values outside of temperature range:									Ex: 97
Total number of hours:									Ex: 1,430
Percentage of compliant data points:									Ex: 93.2%
Is office compliant more than 90% of standard occupied hours?:									Ex: Yes

TIPS FOR MULTIPLE LOCATIONS

- Organizations participating in WELL Portfolio or the multiple projects pathway can submit a Guideline for this feature part, as well as a technical document for each audited project. This Guideline must outline the feature requirements, at minimum, and it can be shared across multiple projects as a means to provide guidance for compliance. A subset of audited projects must also each submit their own technical document that demonstrates compliance with the feature requirements.