

## T01.1 - Option 1: Performance verified environmental conditions

### 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 requirements 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, as applicable:*

- a. *Mechanically conditioned regularly occupied spaces meet one of the following thermal comfort conditions:*

| PMV Range | Percentage of Occupied Hours | Percentage of Regularly Occupied Spaces | Other Requirements   |
|-----------|------------------------------|---|--|
| +/- 0.5   | For at least 90%             | At least 90%                            | N/A  |
| +/- 1.0   | For at least 98%             | At least 95%                            | At least two points in either Feature T03, Feature T04 or in combination |

- b. *Naturally conditioned regularly occupied spaces meet all the following conditions:*

|         | Prevailing Mean Outdoor Temperature, $t_{pma(out)}$ | Indoor Operative Temperature         | Notes  |
|---------|---|--------------------------------------|--|
| Minimum | 50 °F   | $t_{pma(out)} \times 0.31 + 47.9$ °F | N/A  |
| Maximum | 92 °F   | $t_{pma(out)} \times 0.31 + 60.5$ °F | Occupant-controlled elevated air speed may be used to increase this maximum per ASHRAE 55-2013 |

- c. *Mixed-mode-conditioned spaces meet the requirements for both mechanically and naturally conditioned spaces, when each is in operation.*

##### *For Commercial Kitchen Spaces:*

*The following requirement is met:*

- a. *The operative temperature in the kitchen does not exceed 80 °F.*

#### 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 1

#### [Project name] Performance Verified Environmental Conditions

**Project description:** A 4-story office building with a restaurant with counter service on the first floor.

**Project location:** San Francisco, CA, USA

**Ventilation:** Mixed mode

**Modes of Conditioning:** Cooling and heating.

**PMV targets when mechanical ventilation is being used in all spaces except the restaurant's commercial kitchen:**

- PMV range: -0.5 to 0.5
- At least 90% of occupied hours
- At least 90% of regularly occupied spaces

**Temperature thresholds when natural ventilation is being used in all spaces except the restaurant's commercial kitchen:**

Temperatures must remain within the ranges set in the table in [T01.1 Option 1.b](#) (which gives formulas for temperatures relative to the outdoor temperature.)

**Temperature threshold in commercial kitchen:** The operative temperature must not exceed 80°F. (Operative temperature is an average of the dry bulb temperature and the mean radiant temperature).

#### **Assumptions:**

| Location                      | Season  | Clo value | Met value |
|-------------------------------|---------|-----------|-----------|
| Office                        | Heating | 1.0       | 1.1       |
| Office                        | Cooling | 0.7       | 1.1       |
| Restaurant – dining occupants | Heating | 1.0       | 1.1       |
| Restaurant – dining occupants | Cooling | 0.7       | 1.1       |
| Restaurant – wait staff       | Heating | 1.0       | 1.7       |
| Restaurant – wait staff       | Cooling | 0.7       | 1.7       |
| Restaurant Commercial Kitchen | NA      | NA        | NA        |

**Airspeeds at 0.6 – 1.7m above floor (project is using elevated air speed calculation in the restaurant):**

- Restaurant dining – 0.3 m/s

**Source of outdoor air temperature data:** [www.weather.com](http://www.weather.com)

#### [Note, this section is optional]

**For the Performance Testing Agent in regards to temperatures on the day of testing:**

Outdoor design temperatures for meeting PMV requirements if mechanical system is being used during testing:

- Maximum: *[PROVIDE MAXIMUM]*
- Minimum: *[PROVIDE MINIMUM]*
- Data is taken from: *[PROVIDE SOURCE OF DATA]*

If natural ventilation system is being used during testing, please use guidance specified in the [“Verification Tab” of T01.1 Option 1](#): *The average of the mean daily outdoor temperature of the previous 7 days. (The mean daily outdoor temperature is the average of at least two temperatures, measured at evenly spaced intervals over a 24-hr period.)*

#### **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.