Engineer's Letter of Assurance : WELL WELL v2, Q3 2020

Instructions

WELL Certification is determined by onsite Performance Verification and documentation, including Letters of Assurance from the appropriate professionals overseeing the implementation of a specific WELL feature and component parts during design, construction or operations. The template should be completed, signed and submitted as part of the documentation package.

1. Place a checkmark at every part completed and leave blank those that are not being pursued or being completed by another team member.
2. Initial every feature completed and leave blank those that are not being pursued or being completed by another team member.
3. Sign and date at the bottom of this letter.

If an individual other than the Engineer is responsible for any of the requirements contained in this Letter of Assurance, he/she is permitted to sign off on the respective requirements but must complete a separate Letter of Assurance for those specific requirements. This individual should submit a different copy of this form and check the boxes as it pertains to his/her own responsibility. On his/her own Letter of Assurance form(s), this individual should sign and complete the final page and include a description of his/her role on the project next to his/her signature.

The scope of this letter of assurance is as follows (please initial):

Intent stage (for Precertification only)	Implementation stage (for Precertification or WELL Certification)
☐	☐
The information contained in this document is accurate as of current designs and anticipated project operations.	This document is prepared in relation to final construction documents and/or implemented operations and policies.

Check	Air	Initials
	A01 Air Quality	☐
	This project is designed to meet the parts selected below:	
	Part 4: Meet Thresholds for Radon	
	All Spaces:	
	For regularly occupied spaces at or below grade, one of the following requirements is met:	
☐	a. The radon is 0.15 Bq/L [4 pCi/L] or lower, as tested by a professional demonstrated not to have a conflict of interest with the WELL project. One test is conducted per 25,000 ft^2 of regularly occupied space at or below grade.	
☐	b. All regularly occupied spaces at or below grade meet Feature A03, Part 1, Option 1.	
	A03 Ventilation Design	☐
	This project is designed to meet the parts selected below:	

Part 1: Ensure Adequate Ventilation

All Spaces:

Mechanically ventilated spaces

For mechanically ventilated projects, one of the following requirements is met:

☐ a. Newly installed ventilation systems are designed to meet the supply and exhaust rates set in one or more of the following ventilation guidelines, which must describe ventilation rates for at least 90% of the project area. The ventilation system is scheduled to be tested and balanced after project occupancy:

1. ASHRAE 62.1-2010 or any more recent versions (Ventilation Rate Procedure or IAQ Procedure).[12]
2. ASHRAE 62.2-2016.[13]
3. EN 16798-1 (for Category IV buildings).[14]
4. AS 1668.2-2012 or any more recent version.[15]
5. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.[16]

☐ b. Existing ventilation systems have been tested and balanced to meet supply and exhaust rates set in one or more ventilation guidelines listed above within the last five years.

OR

AND Naturally ventilated spaces

For naturally ventilated projects with no mechanical ventilation, the following requirements are met:

☐ a. One or more of the following design criteria, which must describe ventilation rates for at least 90% of the project area:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version.[12]
2. CIBSE AM10: Natural Ventilation in Non-Domestic Buildings (2005 or any more recent version) Section 2.4 – Natural ventilation strategies and Chapter 4 – Design Calculations.[17]
3. AS 1668.4-2012 or any more recent version.[15]
4. Any reference in Option 1, which describes natural ventilation procedures.

☐ b. Vents and windows used to meet the ventilation requirements in one of the standards mentioned above are permanently open or have controls to prevent their closure during periods of occupancy. (Operable windows not used in ventilation calculations may be user operated.)

☐ c. Outdoor air meets the following thresholds as an average for the previous year:

1. $PM_{2.5}$ less than 15 µg/m^3.[18]
2. PM_{10} less than 30 µg/m^3.[18]

OR

AND Naturally ventilated spaces in areas with elevated particulate matter

For naturally ventilated projects with no mechanical ventilation, the following requirements are met:

a. One or more of the following design criteria, which must describe ventilation rates for at least 90% of the project area:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version.[12]
2. CIBSE AM10: Natural Ventilation in Non-Domestic Buildings (2005 or any more recent version) Section 2.4 – Natural ventilation strategies and Chapter 4 – Design Calculations.[17]
3. AS 1668.4-2012 or any more recent version.[15]
4. Any reference in Option 1, which describes natural ventilation procedures.

b. Vents and windows used to meet the ventilation requirements in one of the standards mentioned above are permanently open or have controls to prevent their closure during periods of occupancy. (Operable windows not used in ventilation calculations may be user operated.)

c. Outdoor air meets the following thresholds as an average for the previous year:

1. $PM_{2.5}$ less than 35 µg/m^3.[18]
2. PM_{10} less than 70 µg/m^3.[18]

A06 Enhanced Ventilation Design

This project is designed to meet the parts selected below:

Part 1: Increase Outdoor Air Supply

All Spaces:

Increased air supply

For mechanically ventilated projects, the following requirement is met in all occupiable spaces:

a. Exceed outdoor air supply rates described in ASHRAE 62.1-2010 by the percentages shown in the table below:

Thresholds	Points
30%	1
60%	2

OR

AND Demand control ventilation

For mechanically ventilated projects, the following requirements are met in at least 90% of regularly occupied spaces:

a. A demand-controlled ventilation (DCV) system regulates the outdoor air ventilation rate to keep CO_2 levels less than the thresholds specified in the table below, at the maximum intended occupancy:

Threshold	Threshold	Points	
900 ppm	OR	500 ppm above outdoor levels	1
750 ppm	OR	350 ppm above outdoor levels	2

b. Carbon dioxide is measured at the return air diffusers or in the breathing zone at least 3.3 ft away from doors, windows, air supply diffusers or occupants. At least one sensor is used for each occupancy zone (or per air handling unit, if a single zone is served by multiple air handling units). If the occupancy density/pattern/usage is substantially different in two adjacent areas, each area must be considered a separate zone.

Part 2: Improve Ventilation Effectiveness

All Spaces:

Displacement ventilation system

The project uses a displacement ventilation system in at least 90% of regularly occupied spaces, with one of the following as a basis for design:

a. ASHRAE Guidelines RP-949.[9]

b. ASHRAE 62.1-2019, "Stratified Air Distribution Systems (Section 6.2.1.2.1).[10]

c. REHVA Guidebook No. 01 (Displacement Ventilation in non-industrial premises).[11]

OR

AND Personalized ventilation system

For at least 50% of workstations, the following requirements are met:

a. Outdoor air is supplied in the breathing zone, with an airspeed of no greater than 50 fpm at the occupant's head.[10]

b. The return air diffusers are located more than 9.8 ft above the floor.[10]

A07 Operable Windows

This project is designed to meet the parts selected below:

Part 2: Manage Window Use

All Spaces:

Window operation

Indicator lights at windows (at least one per room with windows) cue occupants when the conditions outside are suitable for opening windows:

a. $PM_{2.5}$: 15 µg/m³ or lower.

b. Dry-bulb temperature: within 15 °F of indoor air temperature setpoint.

c. Relative Humidity: 65% or lower.

A08 Air Quality Monitoring and Awareness

This project is designed to meet the parts selected below:

Part 1: Install Indoor Air Monitors

All Spaces:

Sensor requirements

The following requirements are met:

a. The project deploys monitors that measure at least three of the following parameters:

1. $PM_{2.5}$ or PM_{10} (accuracy 25% at 50 µg/m^3).
2. Carbon dioxide (accuracy 10% at 750 ppm).
3. Carbon monoxide (accuracy 1 ppm at values between 0 and 10 ppm).
4. Ozone (accuracy 10 ppb at values between 0 and 100 ppb).
5. Nitrogen dioxide (accuracy 20 ppb at values between 0 and 100 ppb).
6. Total VOCs (accuracy 25% at 500 µg/m^3).
7. Formaldehyde (accuracy 20 ppb at values between 0 and 100 ppb).

b. Monitors are sited at locations compliant with relevant parameters in the Performance Verification Guidebook. Monitor density is at least one sensor per 3500 ft^2.

c. Measurements are taken at intervals of no longer than 10 minutes for carbon dioxide and no longer than one hour for other pollutants.

A10 Combustion Minimization

This project is designed to meet the parts selected below:

Part 1: Manage Combustion

All Spaces except Commercial Kitchen Spaces:

Low-emission combustion sources

Equipment used in the project for heating, cooling, water heating, process heating or power generation (including back-up, if used for more than 200 hours per year) within the building or project site meet some combination of the following requirements:

a. Comply with California's South Coast Air Quality Management District emission rules for pollution.[7]

b. Are electric.

c. Are supplied by district heating or cooling.

A11 Source Separation

This project is designed to meet the parts selected below:

Part 1: Manage Pollution and Exhaust

Commercial Kitchen Spaces:

The following requirements are met:

a. Canopy hoods have side or partial panels, when allowable by code.[11]

b. Type II hood overhangs and setbacks comply with ASHRAE 154-2011 (Table 3 - Minimum Overhang Requirements for Type II Hoods) on all open sides, measured in the horizontal plane from the inside edge of the hood to the edge of the top horizontal surface of the appliance.[12]

c. The vertical distance between the front lower lip of the hood and the cooking surface is less than or equal to 4 ft.[12]

d. Makeup air velocity near (or directed at) the hood is less than 75 fpm.[11]

e. Replacement air introduced directly into the exhaust hood cavity does not exceed 10% of the hood exhaust airflow rate.[13]

f. At least 50% of the air that replaces the exhaust air is conditioned transfer air, rather than makeup air.[14]

g. Appliances are grouped under exhaust hoods according to effluent production and associated ventilation requirements, as specified in ASHRAE 154-2011, per hood type (defined by the classifications used in ASHRAE 154-2011 for light, medium, heavy and extra-heavy appliance duty levels).[12]

h. Appliances have a rear seal between the appliance and the wall, when allowable by code.[15]

i. Appliances located at the end of a cook line requiring exhaust airflow rates greater than 300 cfm/ft have a full side panel or an end wall.[12]

Dwelling Units:

For all ovens, cooking burners and stove top cooking appliances that use a range hood, the following requirements are met:

a. Exhaust air is vented directly to the outdoors.[16]

b. Exhaust air outlets are separated from any air intakes by at least 10 ft, unless otherwise specified by local code.[17]

c. The minimum operating exhaust airflow rate is the greater of 100 cfm per linear foot of range hood width or 200 cfm.[18]

d. The range hood device, when in operation, covers at least 75% of the burner area.[19]

A12 Air Filtration

This project is designed to meet the parts selected below:

Part 1: Implement Particle Filtration

All Spaces:

Filtration levels

The following requirement is met:

a. Media filters are used in the ventilation system to filter outdoor air supplied to the space, in accordance with thresholds specified in the table below:[5,6]

Annual Average Outdoor $PM_{2.5}$ Threshold	Minimum Air Filtration Level ($PM_{2.5}$ removal)
23 µg/m^3 or less	≥80% (e.g., MERV 12 or M6)
24–39 µg/m^3	≥90% (e.g., MERV 14 or F8)
40 µg/m^3 or greater	≥95% (e.g., MERV 16 or E10)

A13 Enhanced Supply Air

This project is designed to meet the parts selected below:

Part 1: Improve Supply Air

All Spaces:

Air supply requirements

All occupiable spaces utilize one of the following strategies:

a. 100% outdoor air (i.e., supply air has not recirculated from within the building).

b. Partially recirculated air which has been treated with the following:

1. Activated carbon filter.
2. At least one of the following: (i) Media filter with $PM_{2.5}$ removal of ≥90% (e.g., MERV 14 or F8), (ii) UVGI within the ducts to treat the moving air, or (iii) upper-room UVGI.

c. Partially recirculated air and include air purification/cleaning devices within the space (with a quantity appropriate to the room volume or area, based on manufacturer specification) that include the following:

1. Activated carbon filter.
2. Media filter with $PM_{2.5}$ removal of ≥90% (e.g., MERV 14 or F8) or UVGI.

A14 Microbe and Mold Control

This project is designed to meet the parts selected below:

Part 1: Implement Ultraviolet Air Treatment

All Spaces:

UV system design

The following requirements are met:

☐ a. All central air handling units use ultraviolet lamps to irradiate the surfaces of the cooling coils and drain pans.[10]

☐ b. All cooling coils and drain pans associated with fan coil units either:

1. Are irradiated by ultraviolet lamps.
2. May be opened for inspection for mold growth and cleaned, if necessary.

Check	Water	Initials
	W07 Moisture Management	☐

This project is designed to meet the parts selected below:

Part 2: Design Interiors for Moisture Management

All Spaces:

Water leak control in fixtures

The following requirements are met:

☐ a. All hard-piped fixtures, such as toilets, dishwashers, icemakers, water treatment devices and clothes washers, have a labeled, readily accessible single-throw manual shut-off (governed or activated per use) or automatic shut-off at point-of-connection.

☐ b. All installed water treatment devices have a waste line fixed in-place, equipped with a backflow preventor.

Check	Thermal Comfort	Initials
	T01 Thermal Performance	☐

This project is designed to meet the parts selected below:

Part 1: Provide Acceptable Thermal Environment

All Spaces except Commercial Kitchen Spaces:

Performance verified environmental conditions

The following requirements are met, as applicable:

a. Mechanically conditioned regularly occupied spaces meet one of the following thermal comfort conditions:[25]

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:[1]

Prevailing Mean Outdoor Temperature, $t_{pma(out)}$	Indoor Operative Temperature	Notes	
Minimum	50 °F	$t_{pma(out)}$ × 0.31 + 47.9 °F	N/A
Maximum	92 °F	$t_{pma(out)}$ × 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

T04 Individual Thermal Control

This project is designed to meet the parts selected below:

Part 1: Provide Personal Cooling Options

All Spaces except Dwelling Units:

All regular occupants can cool their individual environment through one or more of the following:

a. A user-adjustable thermostat connected to the building's mechanical cooling system or to an air conditioning unit. The room or thermal zone controlled by the thermostat may not be regularly occupied by more than one person.[19]

b. Desk fan or ceiling fan that does not increase air speed for other occupants.[19]

c. Chair with mechanical cooling system.[19]

d. Any other solution capable of affecting a PMV change of -0.5 within 15 minutes from activation, without changing the PMV for other occupants.[19]

Part 2: Provide Personal Heating Options

All Spaces except Commercial Kitchen Spaces & Dwelling Units:

All regular occupants can warm their individual environment through one or more of the following:

a. A user-adjustable thermostat connected to the building's mechanical heating system. The room or thermal zone controlled by the thermostat may not be regularly occupied by more than one person.[19]

b. Electric parabolic space heater.[19]

c. Electric heated chair or footwarmers.[19]

d. Blankets, which are washed at least weekly.[19]

e. Any other solution capable of affecting a PMV change of +0.5 within 15 minutes from activation, without changing PMV for other occupants.[19]

T06 Thermal Comfort Monitoring

This project is designed to meet the parts selected below:

Part 1: Monitor Thermal Environment

All Spaces:

Thermal comfort monitors

The project monitors dry-bulb temperature and relative humidity, satisfying the following requirements:

a. Sensors are located in occupiable areas; 3.6-5.6 ft above the floor; and at least 3.3 ft away from exterior walls, doors, direct sunlight, air supply/exhausts, mechanical fans, heaters or any other significant source of heat or cold.

b. A minimum of one sensor per 3,500 ft^2 of occupiable floor area.

c. Measurements are taken at least once every 15 minutes.

d. Sensors comply with the Device Requirements listed in the WELL Performance Verification Guidebook.

AND Environmental measures display

Real-time display of dry-bulb temperature and relative humidity is made available to occupants through one of the following:

a. Display screens, with at least one screen located in each 3,500 ft^2 zone of regularly occupied space.

b. A website or mobile application, with at least one sign located in each 3,500 ft^2 zone of regularly occupied space, indicating where the data may be accessed.

T07 Humidity Control ☐

This project is designed to meet the parts selected below:

Part 1: Manage Relative Humidity

All Spaces:

Mechanical humidity control

The following requirement is met in all regularly occupied areas, except high-humidity areas:

☐ a. The mechanical system has the capability of maintaining relative humidity between 30% and 60% at all times by adding or removing moisture from the air.[10,11]

Check	Materials	Initials

X01 Material Restrictions ☐

This project is designed to meet the parts selected below:

Part 3: Restrict Lead

All Spaces:

Drinking water pipes, fittings and solder

Pipes, fixtures, fittings and solder newly installed or applied within the project boundary intended for drinking water distribution and delivery meet at least one of the following:

☐ a. The product is approved for use with drinking water by a local government authority or by a government-authorized certification body.

☐ b. The product has a weighted wetted average of 0.25% of lead or less, verified by a third party, or is labeled as ANSI/NSF 372-compliant.

By signing below, I represent that, to the best of my knowledge, all of the responses provided on this form are accurate and made in good faith.

Printed Name: _____ Signature: _____

If the individual using this form is not in the role of Engineer, provide a description of the individual's project role, including justification of their ability to sign off on the above requirements, here:

Project Role: _____

Explanation: _____ _____ _____ _____
_____ _____ _____ _____