

## INDOOR AIR QUALITY POLICY SUMMARY CHECKLIST

### SCOPE

The Indoor Air Quality policy applies to all activities that may degrade the quality of air in the building. Such activities include but are not limited to any ongoing facility maintenance and renovations; the purchasing and use of any materials, chemicals, or furniture; and operation of the HVAC system.

The following materials are covered under this policy:

- Base building elements permanently or semi-permanently attached to the building such as painting, carpet replacement, ceiling tile replacement, etc. Exclude fixtures and equipment (mechanical, electrical, plumbing components, and specialty items such as elevators), which are not considered base building elements.
- Furniture and furnishings as well as the components and parts needed to maintain them.

### RESPONSIBLE PARTY

The Property Manager is responsible for ensuring that this policy is executed, and any contracted vendors involved in facility maintenance and renovation activities are informed of and adhere to the procedures outlined in this policy. If at any time updates are required to this policy, the Property Manager will ensure that the appropriate individuals are informed of the updates.

Each major renovation project should have a Renovation Manager. The Renovation Manager is appointed by the Property Manager and is responsible for coordinating the various aspects of the renovation, including the purchasing and waste schedule, as well as adherence to indoor air quality requirements.

## CHECKLIST

Refer to the full policy for requirements on the following IEQ items:

- 1. IAQ Audit (Annual or Once every 5 Years) and Indoor Space Auditing
- 2. Building Data and Report
- 3. HVAC Inspection and System Water Quality Testing
- 4. Air Quality Testing
- 5. Building Exterior
- 6. Shipping and Receiving
- 7. Drinking Water Sampling and Analysis
- 8. Airborne Contamination Sensor (AUDITAIRE) Installation
- 9. Rapid Reactive Response Program
- 10. Occupant Comfort Survey
- 11. Maintenance and Renovations Best Management Practices (BMPs)

# INDOOR AIR QUALITY POLICY

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## 1. SCOPE

The Indoor Air Quality policy applies to all activities that may degrade the quality of air in the building. Such activities include but are not limited to any ongoing facility maintenance and renovations; the purchasing and use of any materials, chemicals, or furniture; and operation of the HVAC system.

For the purposes of this policy, routine maintenance includes, but is not limited to: painting, carpet replacement, and ceiling tile replacement. Renovations include fit outs affecting more than one room, or large rooms such as the lobby or board room, and involve multiple elements, such as moving walls and electrical work or replacing multiple different architectural finishes.

The following materials are covered under this policy:

- Base building elements permanently or semi-permanently attached to the building (mechanical, electrical and plumbing components and specialty items such as elevators are excluded). Exclude fixtures and equipment, which are not considered base building elements
- Furniture and furnishings as well as the components and parts needed to maintain them

## 2. GOALS

It is the intent of Clarion Partners to maintain the well-being of all building personnel and occupants through the prevention of indoor air quality problems resulting from construction activities and regular operations. IAQ Best Management Practices will be implemented for 100% of renovation projects and 100% of maintenance activities requiring material installation/repair lasting longer than one hour.

For projects pursuing a Green Building Certification, please reference section 8.

## 3. RESPONSIBLE PARTY

The Property Manager is responsible for ensuring that this policy is executed and any contracted vendors involved in facility maintenance and renovation activities are informed of and adhere to the procedures outlined in this policy. If at any time updates are required to this policy, the Property Manager will ensure that the appropriate individuals are informed of the updates.

Each major renovation project will have a Renovation Manager. The Renovation Manager is appointed by the Property Manager and is responsible for coordinating the various aspects of the renovation, including the purchasing and waste schedule, as well as adherence to the indoor air quality requirements.

## 4. PROCEDURES AND STRATEGIES

### A. IAQ Audit (Annual or Once every 5 Years)

Perform an IAQ Audit annually if feasible, or at a minimum once every five years. The audit must address indoor spaces, the building exterior, and major HVAC system components. Each investigation will consist of a thorough review of the property's mechanical systems where they relate to indoor air quality, combined with measurements of selected indoor contaminants that help verify the performance of the building systems in providing good quality indoor air. These investigations form a proactive preventative monitoring program designed to monitor trends, identify potential for future problems, and document/communicate building maintenance efforts. Please note that buildings pursuing annual LEED EBOM certifications are required to pursue annual indoor air quality certifications.

### B. Building Data

Extract building technical data from mechanical drawings of air handling systems, building specification documents, test and balance reports, maintenance data, and interviews with building engineer(s). Data collected where available will include:

- Building configuration, size, and use
- Renovation details

- Special use areas such as smoking lounges, copy rooms, and kitchens
- Air handling unit type, design, and operation
- Building exhaust and return fan operation and fan tracking system
- Heating and cooling system type and operation
- Economizer system type, operational parameters and other energy management device details
- Filtration type and maintenance program
- Air supply system operation and controls, including VAV zoning, regulation and sequencing
- Humidification type and control details, if present
- Chemicals use and storage
- Building materials that may affect the indoor air quality

This data will be analyzed and used where appropriate to interpret and evaluate the operation of the building and its mechanical systems as they relate to indoor environmental quality.

### C. HVAC Inspection

Visually inspect the internal chambers of a representative number of main air handling units, including coils, condensate drainage, fan chambers, humidifiers, controlling hardware, etc. as well as a representative selection of any supplementary, perimeter or other auxiliary air handling units. Based on this inspection, assess the impact on indoor air quality of the type, installation, and condition of filters present in the main and any supplemental air handling systems.

Complete a fiber optic examination on representative sections of the internals of the main and secondary ducts leaving each air handling unit. When necessary, access can be gained to these ducts by the insertion of access points into the ductwork. Ensure that access points are adequately sealed after examination has been completed.

If mold or microbial contamination is evident or suspected on, collect surface samples from air handling equipment and ductwork, voids, and exposed surfaces in occupied areas. The sampling should be conducted via tape lifts or sterile swabs followed by microscopic examination at between 400 X to 1000 X magnification. Using this technique, many of the particles can be identified by their morphology and in the case of spores the results can be expressed qualitatively by genera present (types of mold).

Collect static air pressure measurements inside ductwork at representative locations in main and secondary air supply systems.

### D. Air Quality Testing

Collect the following samples for laboratory analysis:

- Airborne samples will be taken in selected areas using Air-O-Cell type spore traps, or their equivalent, followed by analysis and counting of mold spores, fungal fragments, and other potentially allergenic particles with identification to the genus level (type of mold).
- Formaldehyde levels in selected areas using direct electronic sensors, or NIOSH impinger sampling and analytical techniques.
- Measurement of air flow direction and/or air pressure differentials between building shell and the outside, as well as between key locations within the building. This data is to be used to identify existing and potential pollutant pathways.
- Data logging for temperature and relative humidity over a four to eight-hour period using multichannel data loggers.

The following instrument tests can be performed at representative test locations throughout the buildings. Each test location will be recorded, and the methodology used for analysis and the standards used to compare the results will be defined.

- Measurement of airborne particles (respirable suspended particulates) using electronic aerosol mass monitors

- Measurement of carbon dioxide levels using non-dispersion infrared absorption techniques. Levels will be compared against carbon dioxide levels in outdoor air and used as an indicator of ventilation rates.
- Measurement of carbon monoxide levels using electrochemical sensors
- Tests for miscellaneous gases in representative areas, including nitrogen dioxide, sulfur dioxide, ozone and hydrogen sulfide using electrochemical sensors
- Temperature and relative humidity levels using an electronic thermo hygrometer
- Screening tests for total volatile organic compounds (TVOC) using a photo-ionization detector (PID). If the TVOC fall below 500 µg/m<sup>3</sup> no further testing is indicated. In areas where the TVOC exceeds 500 µg/m<sup>3</sup> sampling for the full spectrum of volatile organic compounds
- (VOCs) will be conducted. The technique involves air sampling using Tenax sorbent tubes followed by subsequent desorption and analysis by gas chromatography and mass spectroscopy. Results are expressed in micrograms per cubic meter of air, and the values recorded will be compared with relevant guidelines for commercial indoor environments.
- Samples of outdoor air will be collected for analysis of dusts, gases, mold spores and fungal fragments, pollens and other allergenic particles, temperature, and relative humidity. Outdoor samples will be taken for control purposes and will be used to help evaluate the indoor readings.

#### **E. Indoor Space Auditing**

The following items will be analyzed in a walkthrough checklist:

- Air quality
- Occupant comfort
- Thermal comfort
- Lighting quality
- Acoustics interference
- Cleanliness
- Moisture damage
- Weather-stripping
- Thermostat settings
- Air flow levels
- Floor and carpet condition
- Ceiling tile condition
- Furniture condition

#### **F. Building Exterior**

Analyze the following items in a profile and walkthrough checklist:

- Roof (thermal insulation adequacy)
- Walls (thermal insulation adequacy and infiltration potential)
- Doors (adequate insulation and infiltration potential)
- Glazing (thermal insulation adequacy and infiltration potential)

#### **G. HVAC System Water Quality Testing**

Conduct microbial analysis of selected water sources such as cooling towers, condensate pans, and humidifier reservoirs in or on the building to evaluate likely sources of waterborne microbial contamination of the building. In addition, conduct Legionella bacteria identification and counting in the cooling tower water or other potential sources of this organism. This information can be used to evaluate risk of exposure to legionella.

#### **H. Shipping and Received**

To prevent vehicle contaminants from entering the building, the following procedures have been established:

- Idling of vehicles is not allowed at the loading dock. Security, property management staff, and parking lot attendants enforce this rule.
- The building pressurization is set up to ensure the contaminants from the loading dock do not enter the building.
- Delivery company supervisors are notified of this rule as well.

#### **I. Drinking Water Sampling and Analysis**

The drinking water sampling and analysis program consists of:

- Water check analysis of domestic main — this sample should be analyzed and compared with the relevant EPA Maximum Contaminant Level for drinking water for 77 parameters (97 if pesticides included).
- Drinking water sample should be taken from each floor to be tested for lead and copper content. These samples should be flushed samples that are collected using special acid-washed bottles. The samples should be analyzed for lead using atomic absorption spectrometry and for copper using graphite furnace atomic absorption techniques.

#### **J. Airborne Contamination Sensor (AUDITAIRE) Installation**

Install AUDITAIREs, small aluminum canisters fitted directly onto the ductwork that contain a specially designed filter capsule. A small quantity of supply air is continually drawn through this filter and any particulate contaminants present are trapped on membranes in the AUDITAIRE. These contaminants can then be analyzed and evaluated at prearranged intervals in the future as part of the proactive monitoring program of the air quality in the building. The contractor might install AUDITAIREs (Airborne Particulate Contamination Monitors) into the ductwork system using the contractor's access points.

#### **K. Report**

A comprehensive written report containing the following information will be submitted within four weeks of on-site tests and measurements:

- A description of the air supply/exhaust/conditioning system highlighting aspects that relate to indoor air quality
- Tests conducted including a description of the procedure, instruments used, and results
- Discussion and comparison of test results to relevant environmental standards and available suggested standards
- Summary of findings
- Where practical and helpful, the report will include photographs that help to explain any unusual conditions or areas needing attention.
- Practical recommendations for any corrective actions for improvement of the indoor environment

#### **L. Rapid Reactive Response Program**

As part of an IAQ audit, the contractor is under contract to provide a Rapid Reactive Response Program. Under this Program the contractor is continually "on call" to respond to any isolated reactive IAQ incidents, which may occur at the property. The exact scope of work to be executed during these reactive responses shall be designed by the contractor in consultation with the Senior Operations Manager based on the individual circumstances at hand. This arrangement gives the property team the security of knowing that resources are at hand to respond to any potentially worrisome IAQ events.

#### **M. Occupant Comfort Survey**

- Conduct an occupant comfort survey annually to assess their satisfaction with their workspace

#### **N. Maintenance and Renovations BMPs**

The following Best Management Practices for indoor air quality control will be implemented as applicable for maintenance and renovations that occur in the project and for maintenance activities

requiring material installation/repair lasting longer than one hour. Property Manager is ultimately responsible for ensuring that these control measures are implemented:

- HVAC Protection

To the extent possible, the HVAC systems serving the affected area will not be used during construction. All duct equipment openings will be sealed with plastic. If the HVAC systems must be operated, the return side of the systems will be protected and closed off if possible. Alternatively, temporary filters over the duct openings will be used (MERV 8 or better). All filtration media will be replaced immediately prior to occupancy with MERV 13 or better.

\*Required for project close-out: Provide manufacturer's product sheet documenting model/product number and MERV rating. Provide narrative describing location and confirmation that the filter was replaced immediately prior to occupancy. Provide photos documenting the filtration media was in place during the project.

- Source Control

Materials meeting the sustainability criteria listed in this policy will be used to the extent possible, particularly for paints, carpet, composite wood, adhesives, and sealants that have the potential for significant emissions. All containers for paints, adhesives and sealants will be stored in a separate, secure location at times when construction is not active. During construction, lids will be kept on all containers as much as possible.

\*Required for project close-out: include material cut sheet highlighting above mentioned sustainable criteria. Supply documentation and pictures of the on-site portable air cleaner. Documentation to include filtration MERV rating, as well as any additional filter needed to suit the material being controlled (e.g., HEPA, charcoal, or potassium permanganate).

- Pathway Interruption

Construction areas will be isolated to prevent contaminating non-construction areas. This will be done by sealing off the work areas with plastic and de-pressurizing the construction area. To the extent, with weather permitting, the construction area will be ventilated using 100% outside air to exhaust contaminated air directly to the outside. Dust guards and collectors will be used on saws, sanders, and other tools.

\*Required for project close-out: Provide pictures of pathway barriers. Provide a narrative of HVAC pressurization measures.

- Housekeeping

All porous or absorptive building materials, such as dry wall and ceiling tiles, will be protected from exposure to moisture and will be stored in a separate, clean area prior to installation. The entrances to the construction area will have temporary walk-off mats to collect particulates. The construction area will be sealed off using plastic. During construction, daily housekeeping will include use of vacuum cleaners with high-efficiency particulate filters and sweeping compounds or wetting agents for dust control when sweeping. Prior to building material installation, the installation area will be cleaned to remove dust and debris. Prior to occupancy, the construction area will be vacuumed using high efficiency particulate filters.

\*Required for project close-out: Provide pictures and a narrative of the housekeeping procedures employed during project.

- Scheduling

As much as possible, the use of paints, sealants, and adhesives will be used after normal working hours to prevent building occupant exposure to off-gassing. All absorptive-finish

materials will be installed after wet-applied materials have cured. The construction schedule will include time for a building flush out prior to occupancy. See below for flush out details.

\*Required for project close-out: Provide a copy of the construction schedule including the order of project tasks and flush-out procedure.

- Flush Out

It is good practice to protect occupants from pollutants and VOC's, prior to moving in. Flush out is an optional strategy, but it can help properties pursuing LEED certifications to achieve additional points.

The flush out will begin after all construction work, including punch-list items, has been completed and furniture and fixtures have been installed. Finalize all cleaning, complete the final testing and balancing of HVAC systems, and make sure the HVAC control is functional. 14,000 cubic feet per square foot of floor area will be delivered to the space, with an internal temperature of at least 60 degrees Fahrenheit and a relative humidity of no more than 60% where cooling mechanisms are operated. The area will not be occupied until after at least 3,500 cubic feet of outdoor air per square foot has been provided to the space. After occupancy, the outside air will be ventilated at a minimum rate of 0.30 cfm per square foot.

\*Required for project close-out: Provide a narrative of the pre-occupancy and post-occupancy flush-out process. Include data regarding airflow, duration of flush-out, and any special considerations.

## 5. BEST PRACTICES

- Tobacco Smoke Control
  - Prohibit smoking inside the building
- Ventilation
  - Ensure that ventilation rates comply with or exceed requirements set in ASHRAE 62.1-2016, Section 6.2 Ventilation Rate Procedure and/or ASHRAE 62.1-2016 Ventilation for Acceptable Indoor Air Quality
  - Isolate indoor pollution sources in closed rooms and/or ensure that air is exhausted from those rooms rather than recirculated
  - After construction or renovation, perform flush-out to remove pollutants from the construction process either before or during occupancy:
    - Before Occupancy - Supply a total air volume of 14,000 cubic feet of outside air per square foot of gross floor area, maintain internal temperature of at least 60°F and no higher than 80°F, and relative humidity no higher than 60%.
    - During Occupancy – Space may be occupied only after delivery of a minimum of 3,500 cubic feet of outdoor air per square foot of gross floor area while maintaining an internal temperature of at least 60°F and no higher than 80°F, and relative humidity no higher than 60%. After occupancy, space must be ventilated at a minimum rate of 0.30 cubic foot per minute (cfm) per foot of outdoor air until a total 14,000 cubic feet per square foot of outdoor air has been delivered to the space.
- Filtration
  - Install MERV 13 or higher media filters in the ventilation system to filter outdoor air
  - Install standalone air purifier with a carbon filter used in all regularly occupied spaces
  - Spaces with more than 10 regular occupants, within building that recirculate air, use of the following treatments to recirculate air: Ultraviolet germicidal irradiation or Photocatalytic oxidation
- Monitoring
  - Mechanically ventilated spaces: monitor outdoor air intake



- Naturally ventilated spaces: monitor exhaust airflow and/or CO<sub>2</sub> concentration in the breathing zone (3-6 feet) and ensure that CO<sub>2</sub> levels are below 800 ppm
- Air Testing
  - Conduct IAQ testing consistent with EPA Protocol in the breathing zone. Monitor for particle count, CO<sub>2</sub>, Ozone, temperature, humidity
  - Annual air testing or at least one every five years
- Green Cleaning
  - Create a cleaning plan for occupied spaces that addresses high-touch and low-touch surfaces, a cleaning schedule, cleaning protocol, and a list of approved products
  - Use low VOC, Green Seal certified cleaning products
- Materials and Furnishing
  - Purchase only materials and furnishings that contain low or no Volatile Organic Compounds (VOCs) and no harmful chemicals
- Control Pollutant Sources
  - Limit indoor pollutants from entering the building by providing regular inspection for mold and eliminating it if found
  - Properly sealing doors, floors and windows for all residential dwelling units and commons spaces
- Control Moisture
  - During facility maintenance or major renovations, ensure building material avoid getting wet to ensure moisture is not trapped
- Housekeeping
  - Interior plants must be maintained regularly (i.e. watering, pruning, etc.) where necessary
  - Garbage and other waste must be disposed of properly to avoid odors in the building
  - Ensure the hygienic storage of food, and use refrigeration where necessary
  - Prohibit products or other sources of harmful or bothersome odors and contaminants

## 6. PERFORMANCE EVALUATION

After each renovation or quarterly (whichever comes first), the Property Manager and Renovation Manager will evaluate whether the procedures described in this policy have been met. Purchasing and waste logs will be evaluated against ESG criteria and project goals. If changes are necessary to the policy, the Property Manager and Renovation Manager will determine how best to change the policy procedures to meet the specified goals for the next renovation and/or for ongoing maintenance activities. Indoor Air Quality practices will also be reviewed to ensure that any adjustments to the policy are made.

Annual monitoring is recommended but at a minimum a detailed IAQ Audit should be done every five years to examine the HVAC systems (heating, ventilating, air conditioning systems and ductwork serving the property), building exterior (roof, walls, doors, and glazing), and indoor spaces (air quality, occupants, thermal comfort, lighting, acoustics, cleanliness, moisture, weather-stripping, thermostat, air flow, flooring and furniture conditions). During this extensive examination, the ventilation rates and filtration standards are reviewed, overall maintenance levels are assessed, and representative samples of indoor air from occupied spaces are collected for analysis. This proactive approach is in place at the property to ensure that the air quality throughout the property is maintained at the highest levels in the interests of occupant well-being, safety, and comfort.

Clarion Partners may make recommendations for proven providers to conduct this audit annually, if not at least every five years and to assess if any contaminants are present as well as evaluate the quality of the air in the buildings at the property.

## 7. REPORTING

The IAQ Policy is relevant to several questions on the Global Real Estate Sustainability Benchmark (GRESB) assessment, and the implementation of this policy benefits Clarion Partners' ESG performance.

## 8. GREEN BUILDING CERTIFICATIONS

The IAQ policy is applicable to all buildings pursuing LEED v4.1 and Fitwel v2.1 certification. As such, all projects pursuing LEED and/or Fitwel certifications, this policy must be in effect 100% of the time.

For LEED it meets the LEED O+M v4.1 Minimum Indoor Air Quality Performance prerequisites, Indoor Air Quality Management Program credit and Human Experience – TVOC and CO2 Measurements (performance path) and Facility Maintenance and Renovations prerequisite.

For Fitwel this policy also meets Fitwel strategies 6.3 – IAQ Policy.

### **Minimum Indoor Air Quality Performance Prerequisite**

Mechanical Ventilated Spaces shall follow one of the following requirements:

CASE 1 Systems Able to Meet Required Outdoor Airflow Rates - ASHRAE Standard 62.1- 2016:

- Maintain each outdoor air intake, supply air fan, and ventilation distribution system to meet the outdoor air intake flow rates, using the ASHRAE ventilation rate procedure or a local equivalent, whichever is more stringent
- Meet minimum requirements of ASHRAE Standard 62.1- 2016, Sections 6.4.1, Ventilation for Acceptable Indoor Air Quality or local equivalent, whichever is more stringent

CASE 2 Systems Unable to Meet Required Outdoor Airflow Rates:

- Prepare an engineering assessment of the system's maximum outdoor air delivery rate
- Supply the maximum possible to reach the minimum setpoint in CASE 1 and not less than 10 cubic feet per minute of outdoor air per person.

Naturally Ventilated Spaces shall follow the following requirements:

- Determine the minimum outdoor air opening and space configuration requirements using the natural ventilation procedure from ASHRAE Standard 62.1-2016 or local equivalent, whichever is more stringent
- Confirm natural ventilation is an effective strategy for the project by following the flow diagram in the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in Nondomestic Buildings, Figure 2.8
- Meet the requirements of ASHRAE Standard 62.1- 2016, Section 6.4.1, or local equivalent, whichever is more stringent

Mixed-Mode Ventilation:

- Implement a combination of Mechanically Ventilated and Naturally Ventilated strategies, as described above
- Comply with mechanical ventilation requirements when the mechanical system is active
- Comply with natural ventilation requirements when the mechanical ventilation system is inactive

All spaces:

- Indoor air quality procedures defined in ASHRAE Standard 62.1- 2016 may not be used to comply with this prerequisite

During the Performance Period, show compliance through measurements taken at system level within five years of the end of the Performance Period. Additionally, implement and maintain an HVAC system maintenance program, based on ASHRAE 62.1- 2016, Section 8, or a local equivalent, whichever is more stringent, ensuring that the proper O+M of HVAC components for air introduction and exhaust are implemented.

### **Indoor Air Quality Management Program Credit**

Clarion Partners shall develop and implement an indoor air quality (IAQ) management program based on the EPA Indoor Air Quality Building Education and Assessment Model (I-BEAM). Include the IAQ management program in the project's current facilities requirements and operations and maintenance plan.

At minimum, the IAQ Management Program must include:

- Outline the team responsible for maintenance
- Procedure to perform a full I-Beam audit at least once every five years
- Preventive maintenance for each piece of equipment

- Periodic inspection for unusual conditions
- Periodic inspection for leaks, rust, dirt, and mechanical problems
- Regular lubrication
- Mechanical and electrical adjustments
- HVAC testing and balancing
- Operational checks
- Parts replacement
- Coil cleaning and filter replacement
- Procedures for repair work orders for when equipment fails or preventive maintenance reveal a problem
- IAQ pollution control protocols

During the Performance Period conduct an I-BEAM on a regular basis (at least once every five years) and revise the IAQ management program as appropriate.

**Alternative Performance Path option through Arc Platform**

Under the Human Experience Category, the following required test must be implemented:

- Conduct at least one Indoor Air Quality (IAQ) evaluation for total volatile organic compounds (TVOC) and interior carbon dioxide (CO<sub>2</sub>) levels, per representative location of the building (25,000 sf) within a 12-month period.
- The test must occur during normal occupied hours, with the HVAC system starting at the normal start time and delivering outdoor air at the minimum rate
- Position the measurement equipment in the breathing zone, between 3 and 6 feet above the floor
- Record measurements in µg/m<sup>3</sup> for TVOC levels and ppm for CO<sub>2</sub> levels. Include original readings and conversion factors, if readings were taken in other units. Conversion factors must be specific to the instrument used.
- Conduct at least 3 measurements at each location, a minimum of 30 minutes apart. Must record stabilized readings at the time of recording.

Meter name	Default VOC Meter	Meter name	Default CO2 Meter
Meter type	VOCs	Meter type	CO2
Unit of measurement	ug/m3	Unit of measurement	ppm

  

Period Start Date	Period End Date	Highest TVOC Reading (ug/m3)	Period Start Date	Period End Date	Average 95th Percentile CO2 Reading (ppm)
11/2/2016	11/2/2016	88.3	11/2/2016	11/2/2016	527.5

**Facilities Maintenance and Renovations Prerequisite**

Track all waste generated due to facility maintenance and renovations, by weight.

**Fitwel Indoor Air Quality (IAQ) Policy Strategy**

All building materials must be tested and deemed compliant as non-emitting or low-VOC materials per the California Department of Public Health (CDPH) Standard Method V1.2-2017.

Additionally, composite woods (e.g. cabinetry) must meet the California Air Resources Board requirements for ultra-low-emitting formaldehyde (ULEF) resins, or no-added formaldehyde resins.

Ensure all Best Management Practices addressed in Section 5 of this policy are practiced regularly to ensure the proper control of pollutant sources and moisture. The following Fitwel requirements are applicable to workplace, multifamily and retail certification projects.

The following criteria must be met: Selection of Products and Materials- All new products and materials procured within the project meet the required thresholds from five or more of the product categories below:

- All interior Insulation
- All flooring Systems
- 90% Ceiling Systems by square feet or meters

- All wall paneling (including, but not limited to interior wall assemblies, gypsum board, doors, frames, wall coverings, window systems, and interior surfaces of exterior walls)
- 90% by volume for emissions and 100% for VOC content of paints and coatings applied on-site and used on the interior of the air barrier
- 90% by volume for emissions and 100% for VOC of adhesives and sealants applied on-site and used on the interior of the air barrier
- 90% by cost of furniture
- 100% of Composite wood for cabinetry (excluding flooring, ceiling, wall panels, or furniture)

Requirements for onsite construction and renovations as detailed in the Clarion Partners' Facility and Renovation Policy will implement strategies to control the following categories:

- Moisture, such as: storing all absorbent products and materials separately in areas that are protected from dust and moisture; voiding enclosing wet materials during construction.
- Particulates, such as: protecting permanently installed ventilation systems during construction; employing entryway systems at all construction site entrances and exists.
- VOCs, such as: storing VOCs separately from absorbent products and materials; installing all possible paints/coatings and adhesives and sealants prior to absorbent products and materials.
- Noise and vibrations, such as: Reducing noise and vibrations from construction equipment; Ensuring that constructions crews wear protective gear
- Outdoor emissions: Developing a plan to protect occupied spaces from outdoor fumes generated by construction activities.
- Tobacco, such as: prohibiting smoking within the construction site.

For Fitwel v2.1 Workplace MTBB and MTWB, and/or Retail certification projects, the IAQ Policy must be included in either relevant leases or a tenant manual.

## 9. QUALITY ASSURANCE CONTROL PROCESS

During renovations, the Renovations Manager, with help from the property manager as necessary, will oversee the work on the construction site to ensure that the requirements in this policy are met. Construction meetings will include an agenda item to ensure that the Indoor Air Quality practices outlined in this policy are being implemented. All maintenance personnel responsible for building repairs will review this policy annually to ensure that they implement the Indoor Air Quality practices outlined.

## 10. TIME PERIOD

Implemented: 2014

Updated Date: 7/22/2021

## 11. DEFINITIONS

- Occupiable space – enclosed spaced intended for human activities, excluding those spaces that are intended primarily for other purposes, such as storage rooms and equipment rooms, and that occupied only occasionally and for short periods of time (ASHRAE 62.1-2016)
- Occupied space – enclosed space intended for human activities, excluding those spaces that are intended primarily for other purposes such as storage rooms and equipment rooms, and that are occupied only occasionally and for short periods of time. Occupied spaces are further classified as regularly occupied and non-regularly occupied spaces, based on the duration of the occupancy; individual or multi-occupant, based on the quantity of occupants; and densely or non-densely occupied spaces based on the concentration of occupants in the space.
- Unoccupied space – area designed for equipment, machinery, or storage rather than for human activities. An equipment area is considered occupied only if retrieval of equipment is occasional.

## 12. RESOURCES AND REFERENCES

- Controlling Pollutants and Sources U.S. EPA: [www.epa.gov/iaq/schooldesign/controlling.html](http://www.epa.gov/iaq/schooldesign/controlling.html)
- Sheet Metal and Air Conditioning Contractors National Association: [www.smacna.org](http://www.smacna.org)
- U.S. EPA Fact Sheet: Ventilation and Air Quality in Offices: [www.epa.gov/iaq/pubs/ventilat.html](http://www.epa.gov/iaq/pubs/ventilat.html)
- ASHRAE 62.1- 2016: [ashrae.org](http://ashrae.org)
- CIBSE Application Manual AM10, March 2005: [cibse.org](http://cibse.org)
- EPA I-BEAM Guidance and Audit Forms: [epa.gov](http://epa.gov)
- IAQ Building Education and Assessment Model (I-BEAM) - Diagnosing and Solving Problems: <https://www.epa.gov/indoor-air-quality-iaq/iaq-building-education-and-assessment-model-ibeam-diagnosing-and-solving>