



# UNIVERSITY OF RICHMOND

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## IAQ MANAGEMENT PLAN

The University of Richmond has established this Construction Indoor Air Quality Management (CIAQM) plan to clearly define the minimum practices which are to be employed in all construction work areas on campus to ensure a healthy work environment during and after construction. The building occupants during and after construction are entitled to a pollutant free workspace. Furthermore, the existence of construction debris, dust, toxins and objectionable odors in the building occupant's workspace after construction is unacceptable.

The CIAQM Plan is applicable to all contractors working within the interior of the building. It is based on the Sheet Metal and Air Conditioning National Contractor's Association (SMACNA) IAQ Guideline for Occupied Buildings Under Construction, 1995.

### **Communication & Enforcement**

1. The individual responsible for coordinating and enforcing the CIAQM Plan is Dave Merchan.
2. All questions or concerns regarding CIAQM should be directed to the CIAQM coordinator at 804-287-6834.

### **Record Keeping**

1. The CIAQM Coordinator will collect the Material Safety Data Sheets (MSDS) or Technical Data Sheets (TDS) from the General Contractor for the following
  - a. VOC content of adhesives, sealants, and paints used inside the building
2. The CIAQM Coordinator will collect the MSDS or TDS that reflect compliance with the Carpet and Rug Institute's Green Label IAQ program for any carpet systems installed inside the building.
3. The CIAQM Coordinator will collect the MSDS or TDS that reflect compliance with the prohibition of urea-formaldehyde in any composite wood material installed inside the building (this includes, but is not limited to, particleboard, plywood, and other engineered wood products). All subcontractors must provide documentation for composite wood materials installed inside the building including doors, workstations and casework.
4. MSDS and TDS must be legible, and must include the name and contact information of the product manufacturer of the material in question.
5. The details of each targeted material will be logged in a master spreadsheet, provided by the LEED Accredited Professional.
6. Compliance with the 5 SMACNA categories listed below will be documented by photographs taken by the CIAQM Coordinator or the LEED Coordinator on at least 3 separate occasions.
7. In any month where CIAQM requirements have not been met, the construction indoor air quality management coordinator will provide a written statement regarding how the project will get back on target.

## **SMACNA CATEGORIES:**

### **Protection**

A. Store all materials and equipment in a protected area (inside warehouse or storage trailer). Material and equipment that is too large or heavy to store in a job site trailer shall be protected from water and dirt/dust/debris.

1. Large equipment and material (pipe, conduit, brick, block, air handling equipment, etc.) may be stored outside if two layers of 8-mil poly are placed on the ground and the equipment or material is then elevated at least 4 inches to allow water to run off. The top and sides shall also be securely covered with two layers of 8-mil poly to prevent water penetration and dust/dirt accumulation.

B. Protect HVAC equipment from collected dust and odors (which can “stick” to porous materials in the system and later be released). Units may not be stored in areas near painting, pressure washing, or excavation. Units may not be operated during cutting or grinding of masonry or concrete.

1. Refer to Division 15 Sections for construction filter requirements for protection of mechanical duct systems during construction.

2. Ductwork shall be clean when installed. Cap ends with poly during construction to prevent contamination.

3. The HVAC system shall not operate until the building walls, roof, glass, doors and filters are properly installed to prevent the induction of pollutants.

4. If air handlers must be used during construction, filter media with a Minimum Efficiency Reporting Value (MERV) of 8 must be used at each air-handling unit.

The Contractor may install specified prefilters and final filters for operation during construction or install temporary 4” MERV 8 filters in the AHUs for operation during construction.

5. The Architect must inspect and approve of the cleanliness of the building before temporary filters are removed at Substantial Completion.

6. Replace all filtration media immediately prior to occupancy. Filtration media installed in air-handling units at end of construction shall have a Minimum Efficiency Reporting Value (MERV) of 13.

7. Testing and Balancing shall not be performed when dust or odor generating activities are occurring.

### **Source Control**

A. Minimize IAQ contaminants introduced by construction materials.

1. The Architect/Engineer has generally attempted to control the introduction of contaminants at the source by selecting materials to minimize such contamination. Some of the leading building product sources of air contamination are carpet, adhesives, paints, caulks, cleaning solutions, wall coverings, and furniture.

B. Store waste construction materials a sufficient distance (a minimum of 30 feet away) from the building to avoid any contamination of building indoor air quality.

C. Adhesives: Adhesives used in the building must comply with the VOC limits of

South Coast Air Quality Management District Rule #1168, available from the South Coast Air Quality Management District (909-396-2000 or <http://www.aqmd.gov/rules/reg/reg11/r1168.pdf>).

D. Sealers: Sealers must meet or exceed Bay Area Air Quality Management District Regulation 8, Rule 51, available from the Bay Area Air Quality Management District (415-771-6000 or <http://www.baaqmd.gov/dst/regulations/rg0851.pdf>). This standard uses the term “sealant” to describe surface filler/sealer type materials commonly referred to as “sealers” in the construction industry, and this specification.

1. The definition of sealant/sealer for the purposes of this specification is any material with adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces. Sealants include sealant primers and caulks.

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E. Carpet: Carpet installed in the building must comply with the Carpet and Rug Institute Green Label Indoor Air Quality Test Program, available from the Carpet and Rug Institute (800-882-8846 or [www.carpet-rug.com](http://www.carpet-rug.com)).

F. Composite Wood Products: Composite wood and agrifiber products must contain no added urea-formaldehyde resins.

### **Pathway Interruption**

A. Erect barriers to contain construction areas to allow a portion of the building to be cleaned and then operate the HVAC system in that cleaned area. Barriers can range from simple dust curtains to temporary walls.

1. Areas of building in which HVAC is operational shall be protected by physical barriers from areas of the building not approved for operation of the HVAC system.

B. The area within 30 feet of outdoor air intakes must remain free of dust, dirt, debris, and volatile materials while the HVAC system is running.

### **Housekeeping**

A. As dust accumulates at a construction site, it will become airborne when disturbed by nearby activity. Similarly, spills or excess applications of products containing solvents will increase odors at a construction site. Leaving the work site wet or even just damp for more than a day could result in the growth of mold and bacteria. attention to site cleaning is, therefore, important to maintaining good IAQ during construction.

B. On a weekly basis, the CIAQM coordinator will inspect the building and a walkthrough inspection checklist will be filed with the LEED Coordinator, addressing the following:

- a. Water damage
- b. Visible mold
- c. Ventilation

- d. Unusual odors
- e. General cleanliness
- f. Dust
- g. Animals
- h. Temperature and humidity

#### Scheduling

1. Scheduling will be coordinated to allow for the installation of “wet” materials with potential for off gassing of VOC’s prior to the installation of more absorptive “dry” materials.

**“Wet” materials to be scheduled “Dry” materials shall be allowed to off gas to minimize absorption of VOCs**

Wet (Source) Materials: Fuzzy (Sink) Materials:

- a. composite wood products, millwork a. carpet and padding
- b. adhesives, sealants and glazing compounds b. fabric wall-covering
- c. wood preservatives, finishes, and paint c. insulation exposed to air stream
- d. control or expansion joint fillers d. acoustics ceiling materials
- e. all hard finishes requiring adhesive installation e. fabric-covered acoustic wall panels
- f. gypsum board and associated finish process