

Standard Specification

This section applies to all new projects requiring Regental approval and is recommended for all major remodels (verify actual policy requirements).

For small or limited scope projects or exterior projects, project manager shall modify as appropriate for the project.

SECTION 01 81 19 INDOOR AIR QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section describes construction Indoor Air Quality (IAQ) goals and includes administrative and procedural requirements for the development and execution of a construction air quality management plan to maintain high indoor air quality during the Work and following completion of it.

1.2 PERFORMANCE REQUIREMENTS

- A. Anticipate and prevent conditions that could compromise indoor air quality due to construction means, methods, process, and materials with particular attention to the following:
1. Eliminating the use of materials containing Volatile Organic Compounds (VOC), formaldehyde and certain chemical compounds for which limitations are specified in Section 01 60 00 Product Requirements, and select construction materials and processes that will eliminate potential IAQ pollutants and contaminants from the Work.
 2. Protect the ventilation system components during construction and clean contaminated components after construction is complete.
- B. Conform to recommendations of Sheet Metal and Air Conditioning National Contractors Association (SMACNA) Guidelines for Occupied Buildings under Construction, Chapter 3 Control Measures for the following.
1. HVAC protection.
 2. Source control.
 3. Pathway interruption.
 4. Housekeeping.
 5. Scheduling.

1.3 SUBMITTALS

- A. Prepare an IAQ Management Plan for the construction and commissioning phases of the project conforming to these specifications and the recommendations of Sheet Metal and Air Conditioning National Contractors Association (SMACNA) Guidelines for Occupied Buildings under Construction, Chapter 3 Control Measures.
1. Draft IAQ Management Plan Review Meeting: Once the University's Representative has reviewed the Draft IAQ Management Plan and prior to construction at the site, schedule and conduct a meeting to review the Draft IAQ Management Plan and discuss procedures, schedules and specific requirements for IAQ during the construction and pre-construction phases of the building. Discuss coordination and interface between the Contractor and other construction activities.
 - a. Attendees: The Contractor and related Contractor personnel associated with the work of this Section, including personnel to be in charge of the IAQ management program, the University's Representative and such additional personnel as the University's Representative deems appropriate.
 2. Final IAQ Management Plan: Make any revisions to the Draft IAQ Management Plan agreed upon during the draft IAQ plan meeting and incorporate resolutions agreed to be made subsequent to the meeting. No work in the building interior may be initiated until this final plan has been submitted and approved.

- B. Construction Photographs: Digital, color images, 640 by 480 pixels on CD-ROM documenting construction IAQ management measures implemented during the Work such as duct protection measures and measures to protect on-site stored or installed absorptive materials from moisture. Provide annotation for images including, date, time and subject. Provide photographs of examples of each measure at 3 different times during construction.
- C. Product Data: Filtration media used during construction and installed immediately prior to occupancy with Minimum Efficiency Reporting Value (MERV) values highlighted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 APPLICATION

- A. For the construction and commissioning phases of the Project provide the following:
 - 1. HVAC Protection: Shut down the return side of the HVAC system whenever possible during heavy construction. If the system must remain operational during construction include the following strategies that apply:
 - a. Fit the return side of the HVAC system with temporary filters.
 - b. Isolate the return side of the HVAC system from the surrounding environment as much as possible (e.g., place all tiles for the ceiling plenum, repair all ducts and air handler leaks).
 - c. Damper off the return system in the heaviest work areas and seal the return system openings with plastic.
 - d. Upgrade the filter efficiency where major loading is expected to affect operating HVAC system.
 - e. Clean permanent return air ductwork per National Air Duct Cleaning Association standards upon completion of all construction and finish installation work.
 - 2. Source Control: Provide non-toxic formulations of materials and products and comply with chemical compound limitations throughout the work including but not limited to adhesives, coatings, substrate products, sealants, and cleaning products.
 - 3. Pathway Interruption: Prevent contamination of clean spaces. Include the following strategies that apply:
 - a. Use 100 percent outside air ventilation (when outside temperatures are between 55 degrees F and 85 degrees F and humidity is between 30 percent and 60 percent) with air exhausted directly to the outside during installation of finishes and other VOC emitting materials.
 - b. Erect air infiltration barriers between work areas or between the inside and outside of the building to prevent unwanted airflow from dirty to clean areas.
 - 4. Housekeeping: Reduce construction contamination in the building prior to occupancy through HVAC and regular space cleaning activities.
 - a. Store building materials in a weather tight, clean area prior to unpacking for installation.
 - b. Check for possible damage to building materials from high humidity.
 - c. Clean all coils, air filters, and fans before testing and balancing procedures are performed.
 - 5. Scheduling: Specify construction sequencing to reduce absorption of VOC's by materials that act as sinks or contaminant sources. Complete application of wet and odor-emitting materials such as paints, sealants, and coatings before installing sink materials such as ceiling tiles, carpets, insulation, gypsum products, and fabric-covered furnishings are installed.
 - 6. Material Protection: Protect stored and installed absorptive materials from exposure to moisture through precipitation, plumbing leaks, or condensation from the HVAC system to prevent microbial contamination. Where practical provide conditioning period in controlled

environment to reduce moisture content of materials where protection failed or was otherwise ineffective.

For small projects, this period may be reduced or eliminated

7. Flush-out: Conduct a minimum two-week building flush-out with new filtration media at 100 percent outside air following the end of construction activities and prior to Final Acceptance. No work shall occur during the flush-out period. Filtration media shall have a Minimum Efficiency Reporting Value of 13 as determined by ASHRAE Standard 52.2-1999. (Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size)

8. Final Filters: Replace filtration media used during flush-out prior to occupancy.

3.2 IMPLEMENTATION

- A. Manager: The Contractor's Quality Assurance Manager shall be responsible for instructing workers and overseeing and the IAQ Management Plan for the Project.
- B. Progress Meetings: Construction related IAQ procedures shall be included in the pre-construction and construction progress meeting agendas.
- C. Distribution: The Contractor shall distribute copies of the IAQ Management Plan to the Job Site Foreman, each Subcontractor and the University's Representative
- D. Instruction: Provide on-site instruction regarding the IAQ procedures for all of the participants in the construction.
- E. Documentation: Document IAQ measures with photographs.

END OF SECTION 01 81 19