

Part II

APPENDIX 3

Commissioning For Indoor Air Quality Checklist –Design Phase–

Commissioning For Indoor Air Quality Checklist

–Design Phase–

Program Phase

Document the results from each of the following tasks:

1. Determine indoor air quality requirements in accordance with the initial design intent of the owner's needs. Codes, standards: *ASHRAE Standard 62-1989, Ventilation for Acceptable Air Quality* and *Standard 55-1992 Thermal Environmental Conditions for Human Occupancy*.
2. Identify the sources of outdoor pollutants in the vicinity of the building site: general ambient air quality, exhaust systems, nearby cooling towers, smoke stacks, and existing or proposed parking garages, etc.
3. Review expected occupant activity, density and locations where special attention is needed: kitchens and break rooms, smoking lounges, photocopy and print rooms, janitorial rooms, labs, material storage rooms, and conference rooms, etc. Review the need for exhaust systems or increased supply air capacity for each area, etc.

Design Development and Construction Documents Phase

Document the results from each of the following tasks:

1. Ensure that the indoor air quality objectives established in the programming phase are included in the design and are well documented in the design intent.
2. Establish the outdoor air intake requirements for each area of the building.
3. Establish procedures for verifying and documenting ventilation rates in each area.
4. Establish air flow rates for needed exhaust systems, including spot pollutant source removal.
5. Determine how adequate ventilation rates will be maintained during all occupied modes of operations, particularly during VAV terminal box turn-down.
6. Review air intakes and exhausts for short-circuiting.
7. Review exterior pollution sources such as garages, loading docks, and cooling towers.
8. Review the impact of the office partitions configurations with respect to ventilation effectiveness.
9. Review choice of filtration type and design, materials, and location.
10. Review HVAC material specifications and application regarding potential for airflow erosion, corrosion and microbial contamination (HVAC insulation materials, etc.).
11. Review air supply system components to ensure control and minimization of the presence of free water and to minimize microbial contamination (condensate trays, humidifiers, water baffles, mist eliminators and cooling towers).

12. Verify the suitability of access doors and inspection ports to all chambers and components of air handling system plenums. Verify that proper cleaning of both sides of coils, condensate pans and/or humidifier reservoirs can be accomplished through the doors.
13. Optional: Examine manufacturer’s safety data sheets (MSDS) for products specified in contract documents that may be suspected contributors to indoor pollutants (carpets, flooring, fabrics, adhesives, wall coverings, partitions, and ceilings; insulating and fire-proofing materials; sealants on walls and floors; use of preservatives, paints, varnishes, and other finish materials).
14. Obtain manufacturer’s data on curing, drying and airing procedures to minimize emission rates.
15. Verify that the specifications specify proper methods and conditions for operating the HVAC system prior to full control and occupancy, to minimize dirt and unwanted moisture entering the duct work, coils, building cavities and any occupied portions of the building.

Note:

Indoor air quality (IAQ) commissioning does not ensure that indoor air quality will be adequate or without deficiency at building turnover or during occupancy, unless the owner has specifically specified that actual air quality testing be performed. Commissioning for indoor air quality entails performing tasks that minimize the potential for IAQ problems, but it does not eliminate their possibility.

The primary source for this checklist was Annex C in *ASHRAE Guideline 1-1989R The HVAC Commissioning Process*, Public Review Draft, 1996.