

(This foreword is provided for information only and is not part of the draft addenda.)

FOREWORD

Draft Addendum 62m. This addendum creates a new section on operating and maintenance procedures, recognizing the importance of these procedures to acceptable indoor air quality. Requirements include such measures as frequency of system inspection.

Changes implemented in response to public review comments are in bold text with additions underlined and deletions in double strikethrough.

Addendum 62m

Add the following section:

[Comment to reviewers: This section is numbered Section 8, but is intended to precede the current section 7 References. Addendum 62L, on Start-up & Construction, may become the new section 7; 62m would then become section 8 and the References would be section 9.]

8. OPERATION AND MAINTENANCE

8.1 GENERAL

8.1.1 Application. The requirements of this section apply to buildings and their ventilation systems **and their components** constructed or renovated after the adoption date of this section.

8.1.2 Operation and Maintenance. The ventilation system shall be operated and maintained at a minimum in accordance with the provisions of this standard.

8.1.3 Building Alterations or Change-of-use. Ventilation systems **design, operation and maintenance** shall be re-evaluated when **changes in building use or occupancy category, substantial significant** building alterations, ~~changes in building use or occupancy category,~~ significant changes in occupancy density, or other changes inconsistent with system design assumptions are made.

8.2 OPERATIONS AND MAINTENANCE MANUAL

An operations and maintenance manual **either written or electronic** shall be developed, and maintained on site or in a centrally accessible location for the working life of the applicable ventilation system equipment or components. This manual shall be updated as necessary. The manual shall ~~consist~~ **include**, at a minimum, of the operation and maintenance procedures, final design drawings, operation and maintenance schedules, and **any** changes made thereto and **the** maintenance requirements and frequencies detailed in section 8.4.

8.3 VENTILATION SYSTEM OPERATION

Mechanical and natural ventilation systems shall be operated in a manner consistent with the Operations and Maintenance Manual.

8.4 VENTILATION SYSTEM MAINTENANCE

8.4.1 Ventilation System Components. The building ventilation system components shall be maintained in accordance with the Operations and Maintenance Manual or as required by this section and summarized in Table 8-1.

8.4.~~2~~**1.1** Filters and Air Cleaning Devices. All filters and air cleaning devices shall be replaced or maintained as ~~required~~ **specified** by the Operating and Maintenance Manual.

8.4.~~3~~**1.2** Outdoor Air Dampers. At a minimum of once every three months or as specified in the Operations and Maintenance Manual, the outdoor air dampers and actuators shall be visually inspected or remotely monitored ~~and determined~~ **to verify** that they are functioning in accordance with the Operations and Maintenance Manual.

8.4.~~4~~**1.3** Humidifiers. Humidifiers shall be cleaned and maintained to limit fouling and microbial growth. These systems shall be inspected at a minimum of once every three months of operation **and/or treated** as specified in the Operations and Maintenance Manual.

8.4.~~5~~**1.4** Dehumidification Coils. All dehumidifying cooling coils shall be visually inspected for cleanliness and microbial growth regularly when it is likely that dehumidification occurs but no

less than once per year or as specified in the Operations and Maintenance Manual and shall be cleaned when fouling or microbial growth is observed.

~~8.4.6~~**8.4.1.5** Drain Pans. Drain pans shall be visually inspected for cleanliness and microbial growth at a minimum of once per year during the cooling season or as specified in the Operations and Maintenance Manual and shall be cleaned if needed. Areas adjacent to drain pans that were subjected to wetting shall be investigated, cleaned if necessary, and the cause of unintended wetting rectified.

~~8.4.7~~**8.4.1.6** Outdoor Air Intake Louvers. Outdoor air intake louvers, bird screens, mist eliminators and adjacent areas shall be visually inspected for cleanliness and integrity at a minimum of once every six months or as specified in the Operations and Maintenance Manual and cleaned as needed. When visible debris or visible biological material is observed it shall be removed. Physical damage to louvers, screens or mist eliminators shall be repaired if such damage impairs their function in preventing contaminant entry.

~~8.4.8~~**8.4.1.7** Sensors. Sensors whose primary function is dynamic minimum outdoor air control, such as flow stations at an air handler and those used for demand control ventilation, shall have their accuracy verified as specified in the Operation and Maintenance Manual. This activity shall occur at a minimum of once every six months or periodically per the Operation and Maintenance Manual. A sensor failing to meet the accuracy specified in the Operation and Maintenance Manual shall be recalibrated or replaced.

~~8.4.9~~**8.4.1.8** Outdoor Airflow Verification. The total quantity of outdoor air to air handlers except for units under 1,000 LPS (2000 CFM) of supply air shall be measured in minimum outdoor air mode once every five years. If measured minimum airflow rates are less than ~~90% of the design~~ **minimum rate (+/- 10% balancing tolerance) documented** in the Operations and Maintenance Manual, they shall be adjusted or modified to bring them ~~above 90% to the minimum design rate~~ **above 90% to the minimum design rate** or evaluated to determine if the measured rates are in compliance with this standard.

~~8.4.10~~**8.4.1.9** Cooling Towers. Cooling tower water systems shall be treated to limit the growth of microbiological contaminants including *legionella sp.* per the Operations and Maintenance Manual or the water treatment program.

~~8.4.11~~**8.4.1.10** Equipment/Component Accessibility. The space provided for routine maintenance and inspection around ventilation equipment shall be kept clear.

~~8.4.12~~**8.4.1.11** Floor Drains. Floor drains located in air plenums or rooms that serve as plenums shall be maintained to prevent transport of contaminants from the floor drain to the plenum.

~~8.4.13~~ ~~Visible Microbiological~~ **8.4.1.12** ~~Microbiological~~ **Microbial** Contamination. Visible ~~microbiological~~ **microbial** contamination shall be investigated and rectified.

~~8.4.14~~**8.4.1.13** Water Intrusion. Water intrusion or accumulation in ventilation system components such as ducts, plenums and air handlers shall be investigated and rectified.

Table 8-1. Minimum Maintenance Activity and Frequency

| Item | Activity | Minimum Frequency* |
|---|----------|---|
| Filters and Air Cleaning Devices | A | Per O & M Manual |
| Outdoor Air Dampers and Actuators | B | Every three months or per O & M Manual |
| Humidifiers | C | Every three months of use or per O & M Manual |
| Dehumidification Coils | D | Regularly when it is likely that dehumidification occurs but no less than once per year or as specified in the O & M Manual |
| Drain Pans and other adjacent surfaces subject to wetting | D | Once per year during cooling season or per O & M Manual |
| Outdoor Air Intake Louvers, Bird Screens, Mist Eliminators and adjacent areas | E | Every six months or per O & M Manual |
| Sensors used for dynamic minimum outdoor air control | F | Every six months or periodically per O & M Manual |
| Air Handling Systems except for units under 1000 L/s (2000 cfm) | G | Once every five years |
| Cooling Towers | H | Per O & M Manual or treatment system provider |
| Floor Drains located in plenums or rooms that serve as air plenums | I | Periodically per O & M Manual |
| Equipment/Component Accessibility | J | |
| Visible Microbiological Microbial Contamination | K | |
| Water Intrusion or Accumulation | K | |

ACTIVITY CODE:

- A Maintain per O & M Manual
- B Visually inspect or remotely monitor for proper function
- C Clean and maintain to limit fouling and microbial growth.
- D Visually inspect for cleanliness and microbial growth and clean when fouling is observed
- E Visually inspect for cleanliness and integrity and clean when necessary
- F Verify accuracy and recalibrate or replace as necessary
- G Measure minimum quantity of outdoor air. If measured minimum airflow rates are less than 90% of the minimum outdoor air rate in the O & M Manual, they shall be adjusted or modified to bring them above 90% or shall be evaluated to determine if the measured rates are in conformance with this standard.
- H Treat to limit the growth of microbiological contaminants.

- I Maintain to prevent transport of contaminants from the floor drain to the plenum.
- J Keep clear the space provided for routine maintenance and inspection around ventilation equipment.
- K Investigate and rectify.
- * **Minimum frequencies may be increased or decreased if indicated in the O&M manual.**