230021-H: SUPPLEMENTAL TERMINAL AIR FLOW UNITS (15896-H)

Related Sections

Basis Guideline: 230021 - “Terminal Air Flow Units”
For an explanation of the use of these guidelines, see “Design Guidelines for UMHHC Facilities”

Included as part of this UMHHC guideline section are the details described within the following UM Master Specification sections:
MS15896 “Terminal Air Flow Units”

The UM Master Specifications may be used as a reference and/or basis, but the A/E is completely responsible for contract specifications (meeting the intent of the UMHHC Guidelines and Preferred Manufacturers List) that are used in UMHHC projects.

UMH Standard Details:
D233600H-1 “Typical Terminal Box Installation Detail”
D 15830 101 “Duct-Mounted Reheat Coil - Hot Water Heating Piping Connections”

General

All supply air terminal units (except dual duct type) shall be provided with a hot-water reheat coil. Coils shall have copper tubes and aluminum fins.

All VAV/CAV boxes utilizing a reheat coil shall be provided with an insulated access panel for access to the upstream face of the reheat coil for cleaning.

NEC requires and the UM Electrical Inspection group enforces a 36” working clearance in front of an electrically powered terminal equipment controller (TEC). A/E shall clearly indicate this required clearance on construction drawings, thru the use of a “hatched” or dashed area in front of TEC.

All new construction facilities utilizing VAV/CAV terminal boxes shall be provided with DDC TEC’s. All work in existing UMHHC facilities shall utilize DDC TEC’s. For renovation work that reuses/refurbishes existing VAV/CAV boxes see FPD website for standard VAV/CAV control diagrams/details in existing facilities.

All supply air terminal units shall utilize a double wall construction consisting of an inner and outer galvanized sheet metal liner sandwiching the insulation. In lieu of double wall construction, the use of hospital grade fiber-free liner (i.e. Titus “Steri-Loc”) is allowed in non-patient care areas (i.e. medical offices) where warranted by sound attenuation performance.

A/E shall detail the need for 4 duct diameters of straight, hard duct on the inlet of all VAV/CAV boxes. Installations that provide a flex duct connected directly to the inlet collar of the VAV/CAV box shall not be allowed.

Variable Volume vs. Constant Volume Terminal Units

In general, as a means of energy conservation and thermal comfort, UMHHC prefers the use of variable volume terminal air units. However, in uses where there is a need to maintain a room pressurization, a minimum air change rate or a minimum ventilation requirement, the A/E shall consider the use of a constant volume terminal air unit. Examples of these spaces are:

- Infection Control Rooms - Type 1 thru 6
- Protective Environment Rooms
- Airborne Infection Isolation Rooms
- Trauma Rooms
- Labor/ Delivery Rooms
• Toilet Rooms
• Janitor's closets
• Clean and Soiled Linen Rooms
• Loading Docks

For all pressurized rooms, the A/E shall clearly indicate infiltration or exfiltration CFMs across all doorways and/or openings into the room on the design drawings. The quantity of CFM offset shall comply with HFES Minimum Design Standards (MDS) pressurization requirements.

The A/E shall pay special attention to the use of variable volume systems in areas immediately adjacent to sensitive pressurized spaces like Infection Control Room Types 1 thru 3, as a wide variance in airflow in adjacent spaces can create an operational difficulty in maintaining these rooms under their respective pressurization. In these cases, consider the use of constant volume airflow for areas immediately adjacent to these spaces.