

HVAC

Air Cleaning Devices (23 40 00)

For questions regarding this section contact: Energy
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Part 1 – General

- Provide filters for air handling units.

Part 2 – Product

- **Filter Efficiency:** For all residential, administrative and academic buildings, the MERV rating on the filters shall be minimum MERV 8 and no more than MERV 11. Buildings that may require higher filtration efficiency, such as Science buildings, can use filters with MERV rating of up to 14 with prior approval from the University Energy Office. MERV rating shall be reported in accordance with ANSI/ASHRAE Test Standard 52.2. Both MERV and MERV-A rating (tested per Appendix J) shall be reported.
- **Dust Holding Capacity:** Filters with higher dust holding capacity, and hence, longer replacement cycles, are preferred unless they negatively impact the differential pressure drop across the filter media over the life of the filter. Sufficient data must be provided in order to make the determination.
- **Differential Pressure:** Filter design must consider lowering the total pressure drop across filters. This can be accomplished by increasing the filter surface area either by specifying filters with larger amount of surface area, such as a pleated filter or bag filter, or by increasing the number and/or size of the filters in the airstream. Filters with the lowest initial as well as final resistance shall be preferred when comparing filters that meet the required MERV rating.
- Electrostatically charged filters are not acceptable.
- The University currently stocks the following types of filters. Filters that match existing stock are preferred for ease of maintenance unless higher performing filters are available.
 - 2" pleat filters with MERV 8 rating, reinforced high capacity with 100% synthetic filter media with at least 14 pleats per linear foot and an initial resistance of 0.30" or less at a velocity of 500 fpm
 - 4" pleat filters with MERV 8 rating, reinforced high capacity with 100% synthetic filter media with at least 10 pleats per linear foot and an initial resistance of 0.24" or less at a velocity of 500 fpm
 - Ring panel filters and links rated at MERV 7 and constructed from 100% polyester media with a wire frame and an initial resistance of 0.25" or less at a velocity of 300 fpm
 - Bag filters with MERV 11 efficiency and constructed with synthetic media with an initial resistance of 0.32" or less at a velocity of 500 fpm. The 12" filters have 4 pockets, 20" have 6 pockets and 24" have 8 pockets
 - 12" box filters with MERV 11 efficiency and constructed with at least 100 SF of 100% synthetic media on the 24x24x12 filter with an initial resistance of less than 0.28" at a velocity of 500 fpm and a rigid plastic frame
 - 4" box filters with MERV 14 efficiency and constructed with at least 45 SF from 100% synthetic media and an initial resistance of 0.45" or less at a velocity of 500 fpm and a rigid plastic frame (Used in Science buildings)
- **Monitoring Pressure:** Install pressure differential gauge with a range of zero to 1.0 in. w.g. across all filter banks. The gauge should be easily visible from a standing position in an easily accessed location near the air handling unit. It should be tied to the building's BMS system.