SECTION 23 40 00
HVAC AIR FILTERS

PART 1 GENERAL

1.1 REFERENCES
- A. UL 900: Standard for Air Filter Units
- B. ASHRAE 52: Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size

1.2 SUBMITTALS
- A. Submit under provisions of Section 23 05 00.
- B. Product Data: For each filter used in this project, provide catalog data for filter media, support grid, enclosing frame, and performance data.
- C. Samples: Not required

1.3 QUALITY ASSURANCE
- A. Filter media shall be UL 900 listed, Class 2.
- B. Provide all filters as product of one manufacturer.

1.4 DELIVERY, STORAGE AND HANDLING
- A. Deliver filters to site in original factory boxes, labeled with manufacturer's identification.
- B. Store filters in original factory boxes, and protect from weather and construction traffic.
- C. Protect filters against dirt, water, chemical and mechanical damage.

PART 2 PRODUCTS

2.1 AIR HANDLING UNITS
- A. Air filters shall be min 4" thick, high efficiency, pleated, disposable type.
- B. Each filter shall consist of non-woven cotton and synthetic fabric media, media support grid, and enclosing-frame.
- C. UL shall classify the filter for flammability as Class 2.
- D. Performance specification is based on Camfil-Farr AP-Thirteen filters.
- E. Filter media shall have a MERV rating of 13 in accordance with ASHRAE 52.
  1. The effective filter media shall be not less than 4.6 sq ft per 1.0 sq ft of filter face area.
  2. The initial resistance shall not exceed 0.08" WG at 250 FPM (0.28"WG at 500 FPM).
  3. The final resistance shall be capable of 0.9" WG.
- F. Media Support Grid shall be welded wire grid with an effective open area not less than 96% to support media.
  1. Bond the grid to the filter media to eliminate the possibility of media oscillation and media pull away.
  2. The grid shall allow total use of the filter media.
- G. Provide an enclosing frame of rigid, heavy-duty, high wet-strength beverage board, with diagonal support members bonded to the air entering and leaving sides of each pleat, to ensure pleat stability.
  1. The inside periphery of the enclosing frame shall be bonded to the filter pack, thus, eliminating the possibility of air bypass.
- H. Provide new clean filter sets and use as follows:
  1. Provide as many filter sets as required during construction.
     a. Do not use low efficiency filters during construction, filters to have minimum MERV rating of 8, check filters on a bi-weekly bases, and replace if dirt is blocking airflow.

b. The mechanical contractor shall clean the coils prior to Substantial Completion if Architect, Owner or Owner's representative determine the coils require cleaning.

2. Provide one filter set for test and balance work.
   a. The mechanical contractor shall coordinate the installation of new filters prior to test and balance work with the District's test and balance contractor.
3. Provide second filter set as the District's spare set.
   a. Store filter set in closed original factory filter boxes within AHU room and mark the AHU number on the filter boxes.
   b. The mechanical contractor shall NOT use this filter set during construction.
4. On the date of Certificate of Occupancy, all HVAC equipment shall have fresh clean air filters.

I. Provide filter pressure gage for each filter bank.
   1. Refer to Section 23 05 19, Flow Meters, Gages, and Thermometers.

2.2 RETURN AIR GRILLES

A. During construction, before system start-up remove any protective cover from opening and apply temporary filters over the return air grilles to minimize dust from entering the return air system.
   1. Filter shall have a MERV rating of at least 8, check filters on bi-weekly bases, and replace if dirt is blocking airflow.
   2. Provide as many filter sets as required during construction.
   3. The mechanical contractor shall coordinate the removal of the temporary filters prior to test and balance work with the District's test and balance contractor.

2.3 EXHAUST AIR GRILLES

A. During construction, before system start-up remove any protective cover from opening and apply temporary filters over the exhaust air grilles to minimize dust from clogging up the blades on the fan wheels.
   1. Filter shall have a MERV rating of at least 8, check filters on bi-weekly bases, and replace if dirt is blocking airflow.
   2. Provide as many sets of filters as required during construction.
   3. The mechanical contractor shall coordinate the removal of the temporary filters prior to test and balance work with the District's test and balance contractor.

2.4 SUPPLY AIR GRILLES

A. During construction, before system start-up remove any protective cover from opening and apply temporary filters over the supply air grilles to minimize dust from entering the supply duct system.
   1. Filter shall have a MERV rating of at least 8, check filters on bi-weekly bases, and replace if dirt is blocking airflow.
   2. Provide as many sets of filters as required during construction.
   3. The mechanical contractor shall coordinate the removal of the temporary filters prior to test and balance work with the District's test and balance contractor.

PART 3 EXECUTION

3.1 INSTALLATION

A. Air Handling Units: Install air-cleaning devices in accordance with manufacturer's instructions.
B. Air Handling Units: Prevent passage of unfiltered air around filters with felt, rubber, or neoprene gaskets.
C. Do not operate air-handling units or exhaust fans until filters are in place.

END OF SECTION