

Part 1 General**1.1 REFERENCES**

- .1 American National Standard Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
 - .1 ANSI/ASHRAE 52.2-12, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particulate Size (ANSI approved).
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-115.10-M90, Disposable Air Filters for the Removal of Particulate Matter from Ventilating Systems.
 - .2 CAN/CGSB-115.11-M85, Filters, Air, High Efficiency, Disposable, Bag Type.
 - .3 CAN/CGSB-115.12-M85, Filters, Air, Medium Efficiency, Disposable, Bag Type.
 - .4 CAN/CGSB-115.13-85, Filter Media, Automatic Roll.
 - .5 CAN/CGSB-115.14-M91, High Efficiency Cartridge Type Supported Air Filters for the Removal of Particulate Matter from Ventilating Systems.
 - .6 CAN/CGSB-115.15-M91, High Efficiency Rigid Type Air Filters for Removal of Particulate Matter from Ventilating Systems.
 - .7 CAN/CGSB-115.16-M82, Activated Carbon for Odor Removal from Ventilating Systems.
 - .8 CAN/CGSB-115.18-M85, Filter, Air, Extended Area Panel Type, Medium Efficiency.
 - .9 CAN/CGSB-115.20-95, Polarized Media Air Filter.
- .3 Underwriters' Laboratories of Canada (ULC)
 - .1 ULC -S111-13, Standard Method of Fire Tests for Air Filter Units.
 - .2 ULC-S646-10, Exhaust Hoods and Related Controls for Commercial and Institutional Kitchens.
- .4 US Department of Defense - Test Method Standard
 - .1 MIL-STS-282-95, Filter Units, Protective Clothing, Gas-Mask Components and Related Products; Performance Test Methods.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 00 10 – General Instructions.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for HVAC filters and include product characteristics, performance criteria, physical size, finish and limitations
- .3 Shop Drawings:
 - .1 Submit drawings in accordance with Section 01 00 10 – General Instructions.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Materials:
 - .1 Provide maintenance materials in accordance with Section 01 00 10 – General Instructions.
 - .2 Furnish list of individual manufacturer's recommended spare parts for equipment such as frames and filters, addresses of suppliers, list of specialized tools necessary for adjusting, repairing or replacing for inclusion in operating manual.
 - .3 Spare filters: in addition to filters installed immediately prior to acceptance by Departmental Representative, supply 1 complete set of filters for each.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 00 10 – General Instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect HVAC filters.
 - .3 Replace defective or damaged materials with new.

Part 2 Products**2.1 GENERAL**

- .1 Media: suitable for air at 100% RH and air temperatures between -40 and 50 degrees C.
- .2 Number of units, size and thickness of panels, overall dimensions of filter bank, configuration and capacities: as indicated.
- .3 Pressure drop when clean and dirty, sizes and thickness: as indicated on schedule.

2.2 RIGID, PANEL CARTRIDGE TYPE FILTERS, 30-35 % EFFICIENCY

- .1 Pleated panel disposable filter, 50 mm deep.
- .2 Rust resistant support grid and high-wet strength beverage board enclosing frame with diagonal support members bonded to the air entering and air exiting side of each pleat.
- .3 Performance:
 - .1 Average atmospheric dust spot efficiency 30%-35% to ANSI/ASHRAE 52.2.
 - .2 MERV 8.
- .4 Fire rated: to ULC -S111.

2.3 RIGID SUPPORT MEDIA BOX FILTERS TYPE FILTERS, 90-95 % EFFICIENCY

- .1 Pleated, totally rigid and disposable type, 300 mm deep.
- .2 Media completely synthetic, micro fiber mat, with spun bonded support scrim. The media shall be supported with a rust resistant grid. The grid shall be bonded to the media

to prevent media oscillation and media pull away. Contour stabilizers of all-metal construction shall be permanently installed on both the air entering and air exiting sides of the filter.

- .3 Performance:
 - .1 Average atmospheric dust spot efficiency 90%-95% to ANSI/ASHRAE 52.2.
 - .2 MERV 14.
- .4 Fire rated: to ULC -S111.

2.4 FILTER GAUGES - DIAL TYPE

- .1 Diaphragm actuated, direct reading.
- .2 Range: 0 to 250 Pa.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for filter installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION GENERAL

- .1 Install in accordance with manufacturer's recommendations and with adequate space for access, maintenance and replacement.

3.3 REPLACEMENT MEDIA

- .1 Replace media with new upon acceptance.
- .2 Filter media new and clean, as indicated by pressure gauge, at time of acceptance.

3.4 FILTER GAUGES

- .1 Install type as indicated across each filter bank (pre-filter and final filter) in approved and easy readable location.
- .2 Mark each filter gauge with value of pressure drop for clean condition and manufacturer's recommended replacement (dirty) value.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 00 10 – General Instructions.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 00 10 – General Instructions.

- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 00 10 – General Instructions.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION