Part 1 General

1.1 RELATED SECTIONS

.1 Section 23 05 48 – Vibration and Seismic Controls for HVAC Piping and Equipment.

.2 Section 23 05 93 – Testing Adjusting and Balancing for HVAC.

.3 Section 23 33 00 – Air Duct Accessories.

.4 Section 23 44 00 – HVAC Air Filtration

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 fan coil units and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Product data to include:

.1 Filters, fan accessibility.

.2 Anchoring of cabinet.

.3 Thermostat, transformer, controls where integral.

.4 kW rating, voltage, phase.

.5 Cabinet material thicknesses.

.3 Shop Drawings:

.1 Submit drawings in accordance with Section 01 00 10 – General Instructions.

.4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.3 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 fan coil units from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove for reuse and recycling of pallets, crates, padding, packaging materials as specified in Section 01 00 10 – General Instructions.

Part 2 Products

2.1 FAN COIL UNITS AC-01, AC-02

.1 Cabinet: steel, 1.2 mm thick, floor mounting. Front inlet/top outlet.

.2 Blower motors: 1 speed, three phase, complete with magnetic starter and overloads.

.3 Belt driven, forward curve fan.

.4 Internal motor and fan vibration isolation.

.5 Filter: replaceable.

.6 Cabinet fully insulated with 25 mm neoprene coated insulation.

.7 Stainless steel sloped and insulated condensate pan.

.8 Finish: 3 stage phosphatized treatment followed by 2 coats baked enamel with final coat grey colour.

.9 Assembly fully wired to one outlet location.

.10 Provide two cooling coils banked and in a series arrangement as required to meet the dimensional constraints for unit foot-print.

.11 Capacity: as indicated.

.12 Provide complete with condensate pump, internally wired and mounted.

.13 Multiple knockouts for up to 25 mm conduit.

.14 Control terminal strips provide for:

.1 Fan start-stop.

.15 Power characteristics: 575V, three-phase. Local disconnect.

.16 Dimensional Constraints:

.1 Width: 675 mm max. at base.

.2 Length: 950 mm max. at base

2.2 FAN COIL UNITS FC-06, FC-07

.1 Horizontal ceiling hung unfinished fan-coil. All panels are 18-gage galvanized steel, including the bottom panel. Hinged access door is flush with front panel. Bottom panel complete with tamperproof screw fasteners and a safety chain. Front and rear duct collars.

.2 Blower motors: Brushless DC electronically commutated motors (ECM) factory-programmed and run-tested in assembled units. The motor controller is mounted in a control box with a built-in integrated user interface and LED tachometer. Motor parameters can be adjusted through momentary contact switches accessible without factory service personnel on the motor control board. Terminal strip shall provide connections for remote start-stop binary input commands through dry contact closure.

.3 Direct-drive, forward curve fan.

.4 Internal motor and fan vibration isolation.

.5 Filter: replaceable.

.6 Cabinet fully insulated with acoustically and thermally insulated with closed-cell insulation.

.7 Noncorrosive ABS main drain pan, positively sloped in every plane and insulated with closed-cell insulation.

.8 Heating water coils proof-tested at 2 MPa (air) and leak-tested at 0.69 MPa (air under water). Maximum main coil working pressure is 2 MPa. Maximum entering water temperature is 93 °C. Tubes and u-bends are copper. Fins are aluminum and are mechanically bonded to the copper tubes.

.9 Power characteristics: 120V, single-phase. Local disconnect.

.10 Capacity: as indicated.

.11 Dimensional Constraints:

.1 Height: 225 mm max.

2.3 AIR FILTERS

.1 In accordance with Section 23 44 00 - HVAC Air Filtration.

.2 Pre filter shall act as the final filter: MERV 8.

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 fan coil units 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

.1 Mount units.

.2 Make electrical and control connections.

3.3 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.

3.4 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