

SECTION 15855 - AIR HANDLING AND MOVING EQUIPMENT

City of San Diego, CWP Guidelines

PART 1 -- GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing:
 - 1. Factory fabricated modular air handling units with coils.
 - 2. Centrifugal fans and accessories.
 - 3. Axial fans and accessories.
 - 4. Roof and wall exhausters, and cabinet and ceiling exhaust fans.
 - 5. Air handling and moving equipment for use in corrosive environments.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
 - 1. Section 11000 Equipment General Provisions
 - 2. Section 11175 Pumps, General
 - 3. Section 15000 Piping Components
 - 4. Section 15050 Vibration Isolation
 - 5. Section 15410 Plumbing Piping
 - 6. Section 15550 Water Tube Boilers and Accessories
 - 7. Section 15880 Air Distribution Devices and Accessories
 - 8. Section 15950 HVAC Controls and Sequence of Operations
 - 9. Section 15990 Testing, Adjusting and Balancing
 - 10. Section 16040 Electric Motors

1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal Code:
 - 1. Uniform Building Code
 - 2. Uniform Mechanical Code
 - 3. Uniform Plumbing Code

1.4 SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:
 - 1. AMCA 99 Laboratory Methods of Testing Fans for Rating Purposes.
 - 2. AMCA 300 Test Code for Sound Rating Air Moving Devices

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| 3. | AMCA 301 | Method of Publishing Sound Ratings for Air Moving Devices |
| 4. | AMCA 500 | Test Methods for Louver, Dampers, and Shutters |
| 5. | ANSI/AFBMA 9 | Load Ratings and Fatigue Life for Ball Bearings |
| 6. | ANSI/AFBMA 11 | Load Ratings and Fatigue Life for Roller Bearings |
| 7. | ANSI/UL 900 | Test Performance of Air Filter Units |
| 8. | ARI 410 | Forced-Circulation Air-Cooling and Air-Heating Coils |
| 9. | ARI 435 | Standard for Application of Central-Station Air-Handling Units |
| 10. | NFPA 90A | Installation of Air Conditioning and Ventilation Systems |
| 11. | SMACNA | Low Pressure Duct Construction Standards |
| 12. | SMACNA | Fibrous Glass Duct Construction Standards |

1.5 SHOP DRAWINGS AND SAMPLES

- A. The following shall be submitted in compliance with Section 01300 and in addition to the requirements of Section 11000:
1. Shop drawings indicating assembly, unit dimensions, weight loading, required clearances, construction details, and field connection details.
 2. Product data indicating dimensions, weights, capacities, ratings, fan performance, motor electrical characteristics, and gauges and finishes of materials.
 3. Fan curves with specified operating point clearly plotted.
 4. Sound power levels for both fan inlet and fan outlet and casing radiation at rated capacity.
 5. Product data for filter media, filter performance data, filter assembly, and filter frames.
 6. Electrical requirements for power supply wiring including wiring diagrams for interlock and control.
 7. Performance data for adjustable axial fan blades for at least five blade settings, including maximum.

1.6 OWNER'S MANUAL

- A. The following shall be included in the OWNER'S MANUAL in compliance with Section 01300 and in addition to the requirements of Section 11000:
1. Instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.
 2. Manufacturer's certification that products are designed and fabricated for the corrosive environments indicated in the Equipment Schedule at the end of this Section.

PART 2 -- PRODUCTS

2.1 GENERAL

A. **Compliance:** Products shall comply with the following:

1. Fan Performance Ratings: conforming to AMCA 210 [and bearing the AMCA Certified Rating Seal.]
2. Sound Ratings: conforming to AMCA 301; tested to AMCA 300 [and bearing AMCA Certified Sound Ratings Seal.]
3. Fabrication: conforming to AMCA 99 [and ARI 430.]

2.2 FAN CRITERIA

- A. Fans shall not increase noise level, or increase tip speed by more than 10 percent, or increase inlet air velocity by more than 20 percent, from indicated values; fans shall be designed for static pressure variations of plus or minus 10 percent.
- B. Fan performance shall be based on [sea level] [] conditions.
- C. Fans shall be statically and dynamically balanced to eliminate vibration and noise transmission to occupied areas.
- D. Fans, fan systems and components in corrosive atmospheres shall be of corrosion-resistant construction, or shall be coated with a protective coating. Fans, fan systems, and components in corrosive atmospheres shall be designed, fabricated, and recommended by the manufacturer for the corrosive atmosphere indicated.
- E. **Fan Bearings:** Fan bearings shall comply with ANSI/AFBMA 9, [L-10 life of 50,000 hours] [L-50 life of 100,000 hours], heavy duty pillow block type, self-aligning, grease-lubricated ball bearings, or ANSI/AFBMA 11, [L-10 life of 120,000 hours] [L-50 life of 400,000 hours], pillow block type, self-aligning, grease-lubricated roller bearings.

2.3 AIR HANDLING UNITS

A. **General:** Units shall be as follows:

1. [Draw-thru] [Blow-thru] type air handling units suitable for [low] [medium] pressure operation.
2. Fan or fan and coil section plus accessories, including [heating coil] [mixing box section] [filter section] [face and bypass damper section] [multi-zone damper section] [cooling coil section].
3. Filter Media: ANSI/UL 900 listed, Class I or Class II, approved by [local] [] authorities.
4. Air Coils: certified capacities, pressure drops, and selection procedures in accordance with ARI 410.

B. **Casings:** Casings shall comply with the following:

1. Casings shall be constructed of [18] [16] gauge galvanized steel on channel base or drain pan; channel base [and drain pans] shall be fabricated of welded steel coated externally with zinc chromate, iron oxide, or phenolic resin paint.
2. Casing sections shall be insulated with [one] [1-1/2] [92] inch thick, [1-1/2] [3] [6] lbs per cu ft density, neoprene coated, glass fiber insulation, "K" value at 75 degrees F

maximum of 0.26 Btu/inch/sq ft/degrees F/hr, applied to internal surfaces with adhesive [and weld pins]; exposed edges of insulation shall be coated with adhesive; insulation and adhesive shall conform to NFPA 90A.

3. [Outdoor] casings shall be finished with [zinc chromate, iron oxide, or phenolic resin paint.] [asphalt base coating] [three coat system of epoxy applied over shot-blasted surface, to total thickness of 5-6 mils.] Fixed joints shall be sealed with closed-cell foam gasket. Cap strips shall be provided over roof flanges. Rain caps and gaskets shall be provided on access doors.
4. Units shall include [10 x 10] [18 x 22] [] inch inspection doors of galvanized steel for flush mounting, with gasket, latch, and handle assembly [and 1/4 inch thick plexiglass inspection window.] [Welded channel frame shall be provided to set access door out from casing to permit external insulation.]
5. Units shall include [18 x 40] [24 x 48] [24 x 60] [] inch walk-in access doors of galvanized steel insulated sandwich construction, for flush mounting, with gasket, latch, and handle assemblies, hinges, [and 12 x 12 inch inspection window of 1/4 inch thick plexiglass.] [Welded channel frame shall be provided to set door out from casing to permit external insulation.]
6. [Stationary] [Adjustable] louvers shall be fabricated of galvanized steel, 6 inch deep with plenum, [nylon bearings,] 1/2 inch mesh, 0.04 inch galvanized wire birdscreen in aluminum frame, and bearing AMCA Certified Ratings Seal in accordance with AMCA 500.
7. Galvanized steel roof mounting curb shall be provided with wood nailing strip, and 1/2 x 2 inch neoprene gasket.
8. Lights shall be included in accessible sections with wire guards, factory wired to [weatherproof] switch [and duplex outlet] mounted on casing exterior.
9. Drain pans shall be constructed from [single] [double] thickness galvanized steel [with insulation between layers] with welded corners, and shall be cross-broken and pitched to drain connection. Drain pans shall be installed under [fan section] [heating coil section] [cooling coil section] [mixing section] [plenum sections] [with asphalt base coating.]
10. Where bottom inlets are indicated, steel or aluminum walking grate on structural supports shall be provided.
11. Units shall include structure to brace casings for suction pressure of [2.5] [] inch wg with maximum deflection of 1 in 200.

C. **Fans:** Fan shall include the following:

1. Fan section with [forward curved,] [backward inclined,] [air foil,] [double width, double inlet, centrifugal] [vane axial] [centrifugal plug] type fan.
2. Self-aligning, grease lubricated, ball or roller bearings with lubrication fittings extended to exterior of fan casing with [plastic] [aluminum] [copper] tube and fitting rigidly attached to casing.

- [3. Fan and motor mounted internally on welded steel base coated with zinc chromate, iron oxide, or phenolic resin paint; motor mounted on slide rails; access to motor, drive, and bearings through removable casing panels or hinged access doors.]
- [4. Motor drive and belt guard mounted on integral casing frame on exterior of casing.]
5. Fans with [variable inlet vanes.] [discharge dampers.]
6. Fan and coil sections connected with flexible connection.

D. Motors and Drives: Motors and drives shall include the following:

1. Motors complying with Section 16040.
2. V-belt drive with cast iron or steel sheaves, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch sheaves for motors 15 hp and under selected so required rpm is obtained with sheaves set at mid-position; fixed sheave for 20 hp and over, matched belts, and drive rated as recommended by manufacturer or minimum 1.5 times nameplate rating of the motor.

E. Coils: Coils shall include the following:

1. Coil section with coils and access to both sides of coils; coils enclosed with headers and return bends [exposed outside] [fully contained within] casing; coils shall slide into casing through removable end panel.
2. Drain pans [24-inch downstream of coil] and down spouts for cooling coil banks more than one coil high; eliminators of [galvanized steel,] [Type 304 stainless steel,] [PVC,] mounted over drain pan.
3. Coils designed for [hot water heating.] [and] [water cooling.]

F. Filters: Filters shall include the following:

1. Filter box of galvanized steel with filter guides, access doors from both sides, for [side] [face] loading.
- [2. [Flat] [angle] [high capacity] arrangement with 2-inch deep [washable permanent panel filters.] [disposable panel filters.] [disposable, extended area panel filters.]]
- [3. [Horizontal] [vertical] automatic renewable media filter with [manual] [automatic] control and [auxiliary frame for extended surface [retained media filters.] [non-supported media filters.]]
4. Extended surface filter box with holding frames and blank-off sheets, extended surface [retained] [non-supported] [high efficiency] media filters with [30] [50] [80] [90] [95] percent dust spot efficiency.
5. Filter gauges [3-1/2-inch diameter diaphragm actuated dial in metal case,] [2-inch diameter diaphragm actuated dial in metal case,] [one piece molded plastic inclined manometer,] with static pressure taps.

G. Dampers: Dampers shall comply with the following:

1. Mixing boxes with factory mounted outside and return air dampers of galvanized steel [with vinyl bulb edging] [and edge seals] in galvanized frame, with galvanized steel axles in self-lubricating nylon bearings, in [parallel] [opposed] blade arrangement [with damper blades positioned across short air opening dimension.]
2. Section with removable, full width rack for supporting freeze protection thermostat, with removable end panel to permit rack removal.
3. Face and bypass dampers, factory mounted in casing with access doors, of galvanized steel blades, [with vinyl bulb edging] [and edge seals], galvanized steel frame, and axles in self-lubricating nylon bearings, arranged to match coil face with [bottom] [top] bypass, blank-off and division sheets, [internal] [external] linkage, access doors, and [adjustable] resistance plate.
4. Multi-zone dampers, factory mounted in casing with service door, or galvanized steel blades [with vinyl bulb edging] [and edge seals] and frame with 1/2-inch diameter stainless steel shaft in oil impregnated bronze bearings, with end stops in frame, arranged for [parallel] [opposed] blade operating, with [adjustable] resistance plates, hand quadrants.

H. **Wheels and Inlets:** Wheels and inlets shall comply with the following:

- [1. Backward Inclined: steel [or aluminum] construction with smooth curved inlet flange, heavy backplate, backwardly curved blades welded or riveted to flange and backplate; cast iron [or cast steel] hub riveted to backplate and keyed to shaft with set screws.]
- [2. Forward Curved: [black enamelled] [galvanized] steel construction with inlet flange, backplate, shallow blades with inlet and tip curved forward in direction of air flow, mechanically secured to flange and backplate; steel hub swagged to backplate and keyed to shaft with set screw.]
- [3. Airfoil Wheel: steel construction with smooth curved inlet flange, heavy backplate die formed hollow airfoil shaped blades continuously welded at tip flange, and backplate; cast iron [or cast steel] hub riveted to backplate and keyed to shaft with set screws.]
- [4. Radial: steel construction with [inlet flange,] heavy [reinforced] backplate, plate blades [with reinforcing gussets] [and] [wearing strips] welded or riveted to backplate and [and flange]; cast iron [or cast steel] hub riveted to backplate and keyed to shaft with set screws.]

2.4 CENTRIFUGAL FANS

A. **Housings:** Housings shall be fabricated as follows:

1. Material: heavy gauge steel, spot welded [for AMCA 99 designated Class I and II fans, and continuously welded for Class III], adequately braced, designed to minimize turbulence with spun inlet bell and shaped cut-off.
2. Finish: factory-finished before assembly with enamel or prime coat.
3. Construction: bolted construction with horizontal flanged split housing.
4. Plug Fans: fabricated without volute housing, with steel cabinet, lined.

B. **Motors and Drives:** Motors and drives shall comply with the requirements for air handling units.

C. **Accessories:** Fans shall include the following:

- [1. Fixed Inlet Vanes: steel construction with fixed cantilevered inlet guide vanes welded to inlet bell.]
- [2. Adjustable Inlet Vanes: steel construction with blades [supported at both ends] [cantilevered] with two permanently lubricated bearings, variable mechanism [out of air stream] terminating in single control lever with control shaft for double width fans [and locking quadrant].]
3. Discharge Dampers: [parallel] [opposed] blade heavy duty steel damper assembly with blades constructed of two plates formed around and welded to shaft, channel frame, sealed ball bearings, with blades linked out of air stream to single control lever.
4. Inlet/Outlet Screens: galvanized steel welded grid.
5. Access Doors: shaped to conform to scroll with quick opening latches and gaskets.
6. Scroll Drain: 1/2-inch steel pipe coupling welded to low point of fan scroll.

2.5 AXIAL FANS

A. **Hubs and Impellers:** Hubs and impellers shall comply with the following:

1. Airfoil Impeller Blades: adjustable die cast aluminum alloy [or glass reinforced polyester resin] [or welded steel die formed blades with belt drives].
2. Hub: die cast aluminum alloy or cast iron hub [or with belt drive of spun, welded steel], bored and keyed to shaft; to facilitate indexing of blade angle with [manual] [automatic] adjustment stops.
3. Controllable Pitch Assemblies: assemblies shall incorporate ball bearing counterbalanced blade and variable pitch assembly into hub with mechanical link to casing exterior mounted actuator, or pneumatic or electric actuator incorporated within hub.
4. Cast Components: components shall be X-rayed after fabrication and statically and dynamically balanced before attachment to motor or shaft.

B. **Casings:** Casings shall comply with the following:

1. Casing shall be fabricated of [1/4] [] inch steel for fans [] [40] [50] inch in diameter and smaller and [3/8] [] inch steel for larger fans.
2. Welding shall be continuous, with inlet and outlet flange connections, and motor or shaft supports; flow straightening guide vanes shall be included for fans specified for static pressures greater than [1] [1.5] [2] [] inch wg.
3. Casings shall be finish-painted [with one coat enamel applied to interior and exterior.] [by hot dip galvanizing finished assembly.]

C. **Accessories:** Fans shall include the following:

1. Guide Vanes: welded steel construction with airfoil vanes and casing flanges, finished to match casing.
2. Adjustable Inlet Vanes: steel construction with blades [supported at both ends] [cantilevered] with two permanently lubricated bearings, variable mechanism [out of air stream] terminating in single control lever with control shaft for double width fans [and locking quadrant.].
3. Inlet Bell: bell mouth inlet fabricated of [steel] [aluminum] [fiberglass reinforced plastic] with flanges.
4. Outlet Cones: fabricated of steel with flanges, outlet area/inlet area ratio of [1.5/1.0] [], with center pod as recommended by manufacturer.
5. Inlet Screens: galvanized steel welded grid to fit inlet bell.
6. Dampers: welded steel construction, consisting of two semi-circular vanes pivoted on oil-retaining bearings in short casing section, finished [with one coat enamel;] [by hot dip galvanizing;] fans shall include [airstream operation closing blades by reverse air flow and gravity.] [hand operation with handwheel control of screw and link mechanism.].
7. Access Doors: shaped to conform to casing with quick opening latches and gaskets.
8. Blade Pitch Actuator: factory mounted and calibrated, [electric actuator requiring single phase power and accepting electric input.] [electric actuator requiring single phase power and accepting pneumatic control input signal.] [pneumatic actuator requiring [] [25 psi] main supply pressure and accepting pneumatic control input signal.]
9. Stall Alarm Probe: factory installed sensing probe to detect fan operating in stall condition.
10. Vibration Detector: factory installed vibration switch to stop fan.

D. **Motors and Drives:** Motors and drives shall comply with the requirements for air handling units and the following:

1. Lubrication: lubrication fittings extended to outside of casing.

E. **Propeller Fans:** Propeller fans shall comply with the following:

1. Impeller: shaped steel or steel reinforced aluminum blade with heavy hubs, statically and dynamically balanced, [keyed and] locked to shaft, directly connected to motor [or provided with V-belt drive.].
2. Motor: self-aligning pre-lubricated ball or sleeve bearings affixed to mounting plate [permitting belt tensioning], neoprene vibration isolation between fan assembly and mounting plate.

3. Frame: one piece, square steel with die formed venturi orifice, mounting flanges and supports, with baked enamel finish.
4. Safety Screens: one-inch galvanized wire over inlet, motor, and drive [and backdraft damper for separate mounting on outlet.].

2.6 ROOF EXHAUSTERS

A. Roof exhausters shall comply with the following:

1. Centrifugal or Axial Fan Unit: V-belt or direct driven, with [spun aluminum] [galvanized steel prefinished in baked-on enamel] [fiberglass reinforced plastic] housing; resilient mounted motor; 1/2-inch mesh, 16 gauge aluminum birdscreen; square base to suit roof curb with continuous curb gaskets; secured with [cadmium plated] [stainless steel] bolts and screws.
2. Roof Curb: [8] [12] [16] [20] [24] inch high [self-flashing] with continuously welded seams, [built-in cant strip,] [one-inch] insulation and curb bottom,] [interior baffle with acoustic insulation, curb bottom,] [hinged curb adapter,] and factory installed door nailer strip.
3. Disconnect Switch: factory wired, non-fusible, in housing for thermal overload protected motor [and wall mounted] [multiple speed switch.] [solid state speed controllers.]
4. Backdraft Damper: gravity activated, aluminum multiple blade construction, felt edged with nylon bearings.
5. Sheaves: cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

2.7 WALL EXHAUSTERS

A. Wall exhausters shall comply with the requirements for roof exhausters (except that a roof curb is not required) and the following:

1. Centrifugal or Axial Fan Unit: V-belt or direct drive, with spun aluminum housing; resiliently mounted motor; 1/2-inch mesh, 16 gauge aluminum birdscreen; secured with [cadmium plated] [stainless steel] bolts and screws.

2.8 CABINET AND CEILING EXHAUST FANS

A. Cabinet and ceiling exhaust fans shall comply with the requirements for roof exhausters (except that a roof curb is not required) and the following:

1. Centrifugal Fan Unit: V-belt or direct drive, with galvanized steel housing [lined with 1/2-inch acoustic insulation], resilient mounted motor, gravity backdraft damper in discharge.
2. Grille: molded white plastic or aluminum with baked white enamel finish.

NTS: The DESIGN CONSULTANT shall obtain a list of 2-years' recommended spare parts from the manufacturers and include the list for each piece of equipment in the Equipment Schedules following this Section.

2.9 SPARE PARTS

- A. **Spare Parts:** Spare parts recommended by the manufacturer and listed in the Equipment Schedules shall be furnished to the OWNER by the CONTRACTOR.

2.10 AIR HANDLING AND MOVING EQUIPMENT SCHEDULES

- A. Individual air handling units shall comply with the requirements indicated on the attached Air Handling Unit Schedules.
- B. Individual fans shall comply with the requirements indicated on the attached Fan Schedule.

2.11 MANUFACTURERS

- A. **Air Handling Units:** Air handling units shall be manufactured by one of the following (or equal):

- 1. Miller-Picking
- 2. Pace

- B. **Centrifugal Fans:** Centrifugal fans shall be manufactured by one of the following (or equal):

- 1. Buffalo Forge
- 2. Chicago Blower
- 3. New York Blower
- 4. Pace
- 5. Trane

- C. **In-Line Centrifugal Fans:** In-line centrifugal fans shall be manufactured by one of the following (or equal):

- 1. Carnes
- 2. Greenheck
- 3. Peck

- D. **Centrifugal Wall Exhaust Fans:** Centrifugal wall exhaust fans shall be manufactured by one of the following (or equal):

- 1. Aerovent
- 2. Greenheck
- 3. Loren Cook
- 4. Penn

- E. **Centrifugal Roof Fans:** Centrifugal fans shall be manufactured by one of the following (or equal):

1. Aerovent
2. Buffalo Forge
3. Greenheck
4. Loren Cook
5. Penn Ventilator

F. **Propeller Wall Fans:** Propeller wall fans shall be manufactured by one of the following (or equal):

1. Aerovent
2. Greenheck
3. Penn Ventilator

G. **Fume Hood Exhaust Fans:** Fume hood exhaust fans shall be manufactured by one of the following (or equal):

1. Barry
2. Chicago Blower
3. New York Blower
4. Pace
5. Trane

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. **General:** Air handling and moving equipment shall be installed in accordance with the manufacturer's installation instructions[.] [and in conformance with ARI 435.]
- B. **Alignment:** Equipment shall be properly aligned and operate free from defects including binding, scraping, vibration, end-shaft runout, or other defects. Drive shafts shall be measured just prior to assembly to ensure correct alignment without forcing. Equipment shall be bolted in position and neat in appearance.

3.2 GENERAL REQUIREMENTS

- A. Fans shall not be operated for any purpose until ductwork is clean, filters are in place, bearings lubricated, and fans have been test run under observation.
- B. Fans shall be mounted on vibration isolators [recommended by the manufacturer] [and] [complying with Section 15050].

3.3 AIR HANDLING UNITS

- A. Fan section shall be isolated with flexible duct connections.

3.4 CENTRIFUGAL FANS

- A. Centrifugal fans shall be installed with:
1. Resilient mountings and flexible electrical leads.

2. Flexible connections complying with Section 15880 [] between fan inlet and discharge ductwork and in metal connectors with bands installed parallel with minimum one-inch flex between ductwork and fan while running.
3. Restraining snubbers and flexible connectors.
4. [Fixed] sheaves for final air balance.
5. Safety screen where inlet or outlet is exposed.
6. Scroll drains to nearest floor drain.
7. Backdraft dampers on discharge of exhaust fans and as indicated.

3.5 AXIAL FANS

- A. Axial fans shall comply with the installation requirements for centrifugal (except that scroll drains are not required) and as follows:
 1. Adjustable blade axial fan wheels shall include access for varying blade angle setting and for varying range of volume and pressure.

3.6 ROOF EXHAUSTERS

- A. Roof exhausters shall be secured with lag screws to roof curb.

3.7 FANS, FAN SYSTEMS AND COMPONENTS IN CORROSIVE ATMOSPHERE

- A. Fans, fan systems and components designed, fabricated and recommended by the manufacturer for the corrosive environment indicated shall be provided for the following environments in the [Chemical Handling Building] [] []:
 1. chlorine
 2. hydrogen sulfide
 3. sulfuric acid
 4. sulfur dioxide

** END OF SECTION **

AIR HANDLING UNIT SCHEDULE

Equipment I.D. Number

[AHU-1]

[AHU-2]

Drawing Reference

Location

Fan (Type)

Capacity, CFM

SP, inch wg

Motor, hp

Environment

Heating Coil

Fin Series

Type

Height, inch

Width, inch

Rows, number

Capacity, BTUH

Entering Air Entering, EF

Leaving Air Temperature, EF

Air SP Drop, inch wg

Entering Water Temperature, EF

Leaving Water Temperature, EF

Water Pressure Drop, ft

Cooling Coil

Fin Series

Type

Height, inch

Width, inch

Rows

Capacity, BTUH

Entering Air Temperatures:

 Dry Bulb, EF

 Wet Bulb, EF

Leaving Air Temperatures:

 Dry Bulb, EF

 Wet Bulb, EF

Water, GPM

Entering Water Temperature, EF

Leaving Water Temperature, EF

Water Pressure Drop, ft

Saturated Suction, EF

Sound Power in db (8th Octave):

 Fan Discharge--

 Casing Radiated--

Spare Parts:

FAN SCHEDULE

Equipment I.D. Number

[F-1]

[F-2]

Drawing Reference

Location

Fan Type

Wheel Type

Class

Arrangement

Size

Capacity, CFM

SP, inch wg

Drive

Motor, hp

Environment

Sound Power in db (8th Octave):

Discharge--

Inlet--

Spare Parts: