

AC-1 GENERAL

1. SYSTEM DESCRIPTION

INDOOR MOUNTED CENTRAL STATION AIR-HANDLING UNIT DESIGNED TO PROVIDE AIR TO A CONDITIONED SPACE AS REQUIRED TO MEET SPECIFIED PERFORMANCE REQUIREMENTS FOR VENTILATION, HEATING, COOLING, FILTRATION AND DISTRIBUTION. UNIT SHALL BE ASSEMBLED FOR DRAW-THRU APPLICATION AND SHALL BE ARRANGED TO DISCHARGE CONDITIONED AIR HORIZONTALLY OR VERTICALLY AS SHOWN ON THE CONTRACT DRAWINGS.

UNIT WITH A DIRECT-EXPANSION COOLING COIL SHALL HAVE THE CAPABILITY TO BE USED IN A REFRIGERANT CIRCUIT IN CONJUNCTION WITH AIR-COOLED CONDENSING UNITS.

2. QUALITY ASSURANCE

UNIT PERFORMANCE SHALL BE CERTIFIED IN ACCORDANCE WITH AHRI STANDARD 430 FOR CENTRAL STATION AIR- HANDLING UNITS.

COILS SHALL BE CERTIFIED IN ACCORDANCE WITH AHRI STANDARD 410, LATEST EDITION.

DIRECT EXPANSION COILS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ANSIAHRAE 15 SAFETY CODE FOR MECHANICAL REFRIGERATION.

INSULATION AND INSULATION ADHESIVE SHALL COMPLY WITH NFPA 90A REQUIREMENTS FOR FLAME SPREAD AND SMOKE GENERATION.

UNIT SHALL BE MANUFACTURED IN A FACILITY REGISTERED TO ISO 9001:2000 MANUFACTURING QUALITY STANDARD.

UNIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH ETL AND CSA STANDARDS AND SHALL CARRY THE ETL AND CSA LABELS.

3. DELIVERY, STORAGE AND HANDLING

UNIT SHALL BE STORED AND HANDLED IN ACCORDANCE WITH THE UNIT MANUFACTURER'S INSTRUCTIONS.

PART 2 - PRODUCTS

4. EQUIPMENT

GENERAL:

UNIT SHALL BE A FACTORY-ASSEMBLED, SINGLE-PIECE CENTRAL STATION AIR HANDLER. UNIT MAY CONSIST OF A FAN AND COIL SECTION WITH FACTORY-INSTALLED CHILLED WATER OR DIRECT EXPANSION COIL, PREHEAT OR REHEAT COIL, HEATING COIL SECTION, FILTER SECTION, MIXING BOX OR COMBINATION FILTER/MIXING BOX OR ACCESS SECTION AS INDICATED ON THE EQUIPMENT SCHEDULES. UNIT BASE RAIL SHALL BE 14 GAGE GALVANIZED STEEL.

UNIT CABINET:

UNIT PANELS SHALL BE DOUBLE WALL, CONSTRUCTED OF 20 GAGE GALVANIZED STEEL INNER PANELS. CASING PANELS SHALL BE REMOVABLE FOR EASY ACCESS TO THE UNIT. ALL PANELS SHALL BE GASKETED TO ENSURE A TIGHT SEAL.

HINGED ACCESS DOORS SHALL BE DOUBLE WALL WITH 1.5 LB DUAL-DENSITY FIBERGLASS BETWEEN GALVANIZED STEEL PANELS.

INSULATION FOR CASING PANELS ON UNIT SHALL BE 1-IN. MINIMUM THICKNESS DUAL-DENSITY FIBERGLASS INSULATION WITH A NOMINAL DENSITY OF NOT LESS THAN 1.5 LB PER CUBIC FOOT.

INSULATION SHALL BE SECURED TO CASING WITH WATERPROOF ADHESIVE.

CONDENSATE DRAIN PANS SHALL BE SLOPED TO PREVENT STANDING WATER AND CONSTRUCTED OF STAINLESS STEEL; THEY SHALL HAVE DOUBLE WALL CONSTRUCTION WITH THREADED DRAIN CONNECTION.

FAN SECTION:

FAN SECTIONS SHALL BE CONSTRUCTED OF GALVANIZED STEEL AND SHALL HAVE A FORMED CHANNEL BASE FOR INTEGRAL MOUNTING OF FAN, MOTOR, AND CASING PANELS. FAN SCROLL, WHEEL, SHAFT, AND BEARINGS ARE TO BE RIGIDLY SECURED TO THE BASE UNIT.

EACH UNIT SHALL HAVE A SINGLE FAN WHEEL AND SCROLL. FANS SHALL BE DOUBLE WIDTH, DOUBLE INLET TYPE, WITH FORWARD-CURVED BLADES. WHEELS SHALL BE BONDERIZED STEEL WITH BAKED ENAMEL, OR GALVANIZED STEEL.

FAN WHEELS SHALL BE KEVED TO THE SHAFT AND SHALL BE DESIGNED FOR CONTINUOUS OPERATION AT THE MAXIMUM RATED FAN SPEED AND MOTOR HORSEPOWER. FAN WHEELS AND SHAFTS SHALL BE SELECTED TO OPERATE AT LEAST 25% BELOW THE FIRST CRITICAL SPEED, AND SHALL BE STATICALLY AND DYNAMICALLY BALANCED AS AN ASSEMBLY.

FAN SHAFTS SHALL BE SOLID STEEL, TURNED, GROUND AND POLISHED.

FAN BEARINGS SHALL BE SELF-ALIGNING, PILLOW-BLOCK REGREASABLE BALL TYPE SELECTED FOR AN AVERAGE LIFE OF 200,000 HOURS AT DESIGN OPERATION CONDITIONS, PER ANSI CODE B3.15.

FAN MOTOR SHALL BE MOUNTED WITHIN THE FAN SECTION CASING ON SLIDE RAILS HAVING 2 ADJUSTING SCREWS. MOTOR SHALL BE NEMA DESIGN B WITH SIZES AND ELECTRICAL CHARACTERISTICS AS SHOWN ON THE EQUIPMENT SCHEDULE.

FAN DRIVE SHALL BE DESIGNED FOR A 1.5 SERVICE FACTOR AND SHALL BE FACTORY MOUNTED AND ALIGNED. BELT DRIVE SHALL BE VARIABLE OR FIXED-PITCH TYPE.

COIL SECTIONS:

ALL COILS SHALL HAVE MILL GALVANIZED CASINGS. COILS SHALL BE FACTORY LEAK TESTED AT 450 PSIG AIR PRESSURE.

DIRECT-EXPANSION COILS SHALL HAVE ALUMINUM PLATE FINNS WITH BELLED COLLARS BONDED TO 1/2-IN. OD COPPER TUBES BY MECHANICAL EXPANSION. COILS SHALL BE PROVIDED WITH PRESSURE-TYPE BRASS DISTRIBUTORS WITH SOLDER-TYPE CONNECTIONS AND SHALL HAVE A MINIMUM OF 2 DISTRIBUTORS. COILS FOR FULL FACE ACTIVE OR FACE-SPLIT OPERATION SHALL HAVE INTERTWINED CIRCUITS FOR EQUAL LOADING ON EACH CIRCUIT. SUCTION AND DISCHARGE CONNECTIONS SHALL BE ON THE SAME END. COILS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ANSIAHRAE 15.

FILTER SECTIONS:

EACH FILTER SECTION SHALL BE DESIGNED AND CONSTRUCTED TO HOUSE THE SPECIFIC TYPE OF FILTER SPECIFIED ON THE EQUIPMENT SCHEDULE.

FLAT FILTER SECTIONS SHALL ACCEPT FILTERS OF STANDARD SIZES. SECTIONS SHALL INCLUDE SIDE ACCESS SLIDE RAILS AND HINGED DOOR ACCESS. FLAT FILTER SECTION SHALL BE ARRANGED WITH MINIMUM DEPTH IN DIRECTION OF AIRFLOW.

ANGLE FILTER SECTION SHALL ACCEPT 2-IN. FILTERS ARRANGED IN HORIZONTAL V FORMATION. DOUBLE WALLED HINGED DOORS SHALL BE PROVIDED.

DAMPER SECTIONS:

MIXING BOXES AND FILTER MIXING BOXES SHALL HAVE PARALLEL BLADE, INTERCONNECTING OUTSIDE-AIR AND RETURN-AIR DAMPERS. DAMPER BLADES SHALL HAVE PARALLEL BENDS FOR STIFFNESS AND SHALL BE WELDED TO 1/2-IN. DIAMETER STEEL RODS ROTATING IN NYLON BUSHINGS AND MOUNTED IN RIGID GALVANIZED STEEL FRAMES. DAMPERS SHALL BE SECTIONALIZED TO LIMIT BLADE WIDTH TO NO MORE THAN 50-IN. TO MINIMIZE BLADE WARPAGE AND TO ENSURE TIGHT CLOSURE. ALL MIXING BOXES AND FILTER MIXING BOXES SHALL HAVE DOUBLE-WALLED HINGED ACCESS DOORS.

ALL DAMPERS FOR MIXING BOXES AND FILTER MIXING BOXES SHALL BE RATED AS LOW-LEAKAGE DAMPERS, HAVING A LEAKAGE RATE NOT TO EXCEED 2% OF AIR QUANTITY CALCULATED AT 2000 FPM VELOCITY THROUGH DAMPER AND 4.0-IN. WG PRESSURE DIFFERENCE. DAMPER BLADES SHALL BE GASKETED AND PERIMETER SEALING STRIPS SHALL BE PROVIDED.

ACCESS SECTIONS:

ACCESS SECTIONS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS AND SHALL BE AS SPECIFIED ON THE EQUIPMENT SCHEDULE.

ACCESS SECTIONS SHALL HAVE DOUBLE-WALLED HINGED DOORS.

SPECIAL FEATURES:

THE FOLLOWING UNIT OPTIONS SHALL BE AVAILABLE. THE LOCAL CARRIER SALES OFFICE CAN PROVIDE ASSISTANCE IN AMENDING THE SPECIFICATIONS.

FAN SECTION:

HIGH-EFFICIENCY MOTOR.

TOTALLY ENCLOSED FAN COOLED (TEFC) MOTOR FOR VARIABLE SPEED DRIVE.

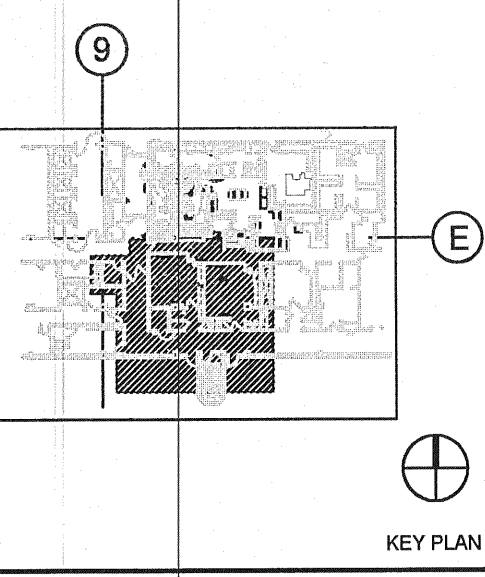
COIL SECTION:

DIRECT-EXPANSION COIL WITH COPPER PLATE FINNS AND STAINLESS STEEL CASING.

NO.	DATE	REVISION
1	11/01/2010	ISSUE FOR CONSTRUCTION
1	11/01/2010	ISSUE FOR BLDG. DEPT.

SEAL

Perkins Eastman
422 SUMMER STREET
STAMFORD, CT 06901
T. 203.251.7400
F. 203.251.7474



Owner:

Danbury Hospital
A Difference That Matters
DANBURY HOSPITAL
3 TOWER: R/F & ERCP SUITE:
Room 4 & 5
Danbury, Connecticut

MEP:
KOHLER RONAN, LLC
301 MAIN STREET
DANBURY, CT
TEL: 203.726.1017
FAX: 203.726.1018
E-MAIL: KRICE@KOHLERRONAN.COM

Structural:
JOHN SMOLEN & ASSOCIATES, LLC
60 DEVINE STREET UNIT A
NORTH HAVEN, CT
TEL: (203) 248-2000
FAX: (203) 248-2000
EMAIL: JS@ENGS@SHET.NET

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ARM AIR CONDITIONING AND HEATING, INC.

PROJECT TITLE:
**R/F & ERCP SUITE
ROOM 4 & 5
3 TOWER**

24 Hospital Avenue
Danbury, CT

PROJECT No: 41581.00

DRAWING TITLE:
**SPECIFICATIONS
- MECHANICAL**

SCALE: NOT TO SCALE

M-401

ISSUE FOR CONSTRUCTION
November 1, 2010