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Coil Specifications

Design Pressures and Temperatures

Coil shall be designed to withstand the following maximum operating pressures and temperatures:

Water Coils - 250 psig / 300°F
Steam Coils - 125 psig / 353°F
Evaporator Coils (3/8" Coils) - 400 psig / 300°F
Evaporator Coils (1/2" & 5/8" Coils) - 250 psig / 300°F
Condensing Coils (3/8" Coils) - 600 psig / 300°F
Condensing Coils (1/2" & 5/8" Coils) - 300 psig / 300°F

Fins

Coils shall be plate fin type construction providing uniform support for all coil tubes. Coils are to be manufactured with die-formed aluminum or copper fins with self spacing collars which completely cover the entire tube surface.

Thickness - 0.0060" +/- 5% unless specified otherwise
Tube Holes:

0.625 diameter spaced 1.5 inch equilaterally
0.500 diameter spaced 1.25 inch equilaterally
0.375 diameter spaced 1.0 inch equilaterally fins/inch
0.625 diameter coils 6 through 14 fins / inch
0.500 diameter coils 6 through 16 fins / inch
0.375 diameter coils 10 through 20 fins / inch
All fins have a tolerance of +/- 4%

Tubing

Tubing and Return Bends - Standard pressure - constructed from UNS12200 seamless copper conforming to ASTM B75, ASTM B251, and ASTM B743.

Copper Tube Temper - Light annealed with a maximum grain size of 0.040 mm and a maximum hardness of Rockwell 65 on the 15T scale.

Tube Expansion - Mechanically expanded to form an interference fit with the fin collars without decreasing tube wall thickness.

Minimum Thickness:

- 0.016 inch for 0.500 and 0.375 inch tubing
- 0.020 inch for 0.625 inch tubing unless specified otherwise

Casing (Endplates and Side Plates)

Shall be made from one of the following materials:

1. Copper 0.093 inch thick meeting ASTM B152
2. 16 or 14 Gauge, stainless steel meeting ASTM A240
3. 16 or 14 Gauge, G90 Galvanized steel meeting ASTM A653

Sheet metal breaks - Bent to 90° +/- 2° unless specified otherwise.

Formed tube collars are designed so that the expansion surface is 0.100" and the ends are re-flared to prevent raw metal edge from contacting copper tubes.

Testing Requirements

Coils shall be submerged in water and tested with dry nitrogen.

Water Coils are tested to 450 psig
GFC Coils Specifications October 2011.doc
Evaporator, Condensing and Steam coils are tested to 600 psig

Headers

Headers shall be constructed from UNS 12200 seamless copper conforming to ASTM B75, ASTM B88 and ASTM B251.

Water Coil Headers - Equipped with *optional* factory installed manual air vents and drains placed at the highest and lowest points.

End caps (1.625" and larger) - Die formed and installed on the inside diameter of the header such that the landed surface area is three times the header wall thickness.

End caps (Less than 1.625) - Flat copper sheet stock circle sheared, stamped or punched to header diameter and installed on the header ends.

Connections

Male Pipe Thread (MPT) and constructed from red brass conforming to ASTM B43 or schedule 40 steel.

Male Pipe thread (MPT) or Female pipe thread (FPT) and constructed from copper

Sweat Connection constructed from UNS 12200 seamless copper conforming to ASTM B75 and ASTM B251

Brazing

High temperature filler metals shall be used for all brazed joints. Filler metal will contain at least 5% silver.

Certification

Acceptable coils are to have AHRI Standard 410 certification and bear the AHRI symbol. Non-certified coils or coils outside AHRI's rating range will be considered if the manufacturer is a current member of the AHRI air-cooling and air-heating coils certification program and the coils have been rated in accordance with AHRI Standard 410.

Acceptable coils are to be Intertek Recognized Components, and are eligible to bear the ETL Listed Mark.