

## 1-0. GENERAL

Coilmaster condenser coils are intended for use with a wide range of applications and refrigerant types. Coils are to be designed to maximize performance under specified conditions with minimal air-side pressure drop.

### 1-1. CERTIFICATION

Coils shall be UL recognized as Refrigerant Containing Component. Coils to be used with refrigerant R-410A shall have undergone cycle testing, and shall be safety listed with 750 psig rating.

### 1-2. TUBES

Tubes and return bends shall be constructed from seamless UNS C12200 copper conforming to ASTM B224 and ASTM E527. Properties shall be O50 light annealed, with a maximum grain size of 0.040 mm.

Tubes are to be mechanically expanded into fins (secondary surface) for maximum heat transfer. Materials are to be 3/8" diameter x (0.014, 0.022) wall thickness, 1/2" diameter x (0.016, 0.025) wall thickness, or 5/8" diameter x (0.020, 0.025, 0.035, 0.049) wall thickness.

Internally enhanced rifled or cross-hatched tubes can be offered as an option.

### 1-3. FINS

Secondary surface (fins) shall be of the plate-fin design using aluminum or copper, with die-formed collars. Fin design to be flat, waffle, or sine-wave in a staggered tube pattern to meet performance requirements.

Collars will hold fin spacing at specified density, and cover the entire tube surface. Aluminum properties are to be Alloy 1100 per ASTM B209, with O (soft) temper; copper is to be Alloy 11000 per ASTM B152-06 with soft (anneal) temper. Fins are to be free of oils and oxidation.

### 1-4. HEADERS

Headers are to be constructed of seamless UNS C12200, Type L (drawn) copper material sized to match specified connection size. Type K (drawn) copper headers shall be offered as an optional material.

Headers are to have finished integral spin-closed ends designed to withstand test pressure.

## 1-5. CONNECTIONS

Condenser coils shall be designed with copper sweat connections, and shall be shipped with caps on connections.

### 1-6. CASING

Coil casing material shall be of G90 galvanized steel, 16 gauge minimum. Heavier material, stainless steel, copper, or aluminum casings are to be provided as required.

Coils designed for hot-gas applications shall have oversized tube sheet holes for hot gas feeds to allow for free expansion and contraction of tubes during operation.

Intermediate tube supports are to be provided on all coils 50" and longer fin length. Coil casings on top and bottom of coils are to have double-flange construction, allowing for vertical stacking of coils.

### 1-7. BRAZING

All coils are to be brazed with minimum 5% silver content (BCup-3) filler material to insure joint integrity.

### 1-8. PRESSURE TESTING

Coils shall be tested at 550 psig using dry nitrogen, submerged under water. Dual-operator verification shall determine that all coils are leak-free.

Coils shall be shipped with nitrogen charge to verify leak-free integrity, and to prevent moisture migration into coil.

### 1-9. OPERATING PRESSURES

Coils shall be certified to withstand 750 psig working pressures.

### 1-10. INSTALLATION

Coils are to be installed according to manufacturer's instructions and applicable piping codes.

System piping and risers shall be designed for velocities that allow for proper oil return throughout the system.