23 82 00 CONVECTION HEATING AND COOLING UNITS - coil selection criteria

Modify *subsections .01 and .02 in Section 23 82 00* per the following (deletions are shown struck through and additions are double underlined). Remainder of section is unchanged.

23 82 00 CONVECTION HEATING AND COOLING UNITS

.01 Air Coils

A. Separate drain pans for each cooling coil shall be provided.

B. Access doors shall be provided on upstream side of all coils.

C. Clearance shall be provided for the full finned width of coil for removal.

D. Design for minimizing fan energy. The high-performance target is that the allowable fan power limitation for each system shall be 10% less than the limits set by ASHRAE 90.1 or the current International Energy Conservation Code, or per the prescriptive path criteria of the current edition of ASHRAE Standard 189.1 (whichever is most stringent). ~~Cooling coil face velocities shall not exceed 500 fpm.~~

E. Air vents shall be provided at highest point.

F. Hose end drain valves shall be provided with isolation valves.

G. Vacuum breakers shall be provided on all steam heating coils.

H. Water coils shall be piped in counter-flow configuration.

I. When installing coils in a corrosive atmosphere, appropriate corrosion resistant coating shall be provided, i.e., fume hood run-around loops.

J. Design for low flow, high temperature differences, low water side pressure drop, and variable flow distribution systems to minimize pump energy. The heating hot water system (air heating coils and terminal heating equipment) shall be designed to support the future use of 140 degree water such that this system may be supplemented with a solar thermal system or other alternative heat recovery source in the future.~~Refer to Details [23 xx xx .xx], [23 xx xx .xx], and [23 xx xx .xx]. Details are not yet available in WEB-based manual.~~

~~J.~~K. Provide stainless steel coil casings on applications that will condense moisture, such as typical air conditioning cooling/dehumidification and exhaust air heat recovery.

.02 Heating Terminal Units (General)

A. Provide isolation valves on each item.

B. ~~Design for average hot water temperature of 190°F or 1 psig steam supply. Size steam control valve for 8 psig inlet pressure and 6 psi maximum drop through the valve.~~ Design for low flow, high temperature differences, low water side pressure drop, and variable flow distribution systems to minimize pump energy. The heating hot water system (air heating coils and terminal heating equipment) shall be designed to support the future use of 140 degree water such that this system may be supplemented with a solar thermal system or other alternative heat recovery source in the future.

C. Design drawings shall indicate all selection criteria.

D. Finish shall be submitted with color chip for approval.

~~E. Refer to Details [23 xx xx .xx] and [23 xx xx .xx]. Details are not yet available in WEB-based manual.~~

END of revision

Update Commentary:

Section was updated primarily for the following reasons:

1) *To remove inaccurate/outdated selection criteria and replace with intent for high-performance design selections.*
2) *To include requirements to select heating coils to support the future use of 140 degree supply water temp from alternative low temperature heat sources in the future.*
3) *To require stainless steel coil casings on applications that will condense moisture*