TRICOIL® METHOD EQUIPMENT SELECTION WORKSHEET

Room Cooling Application

0% to 100% Outside Air

Complete this worksheet and fax, e-mail or mail it to Sensible Equipment Company, Inc. for a psychrometric evaluation and equipment selection data. (If you have any questions or need any help with the form, call our engineering department at (407) 296 – 6991))

Name: _____ Date: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____e- mail: _____

Project Name/Number/Unit Tag		
System Description (1) Cooling Heating		
	Data (2) Selected Part Load	Heating Data (3)
	_____°F db/wb _____ cfm	_____°F db _____ cfm
	_____ °F db _____ rh	_____°F db _____n/a__ rh
	_____ mbh _____ mbh	_____ mbh _____n/a__mbh
	Temp. Rise _____ °F db _____ °F db	Temp. Drop _____ °F db _____ °F db
	Supply Fan _____ Return Fan	
	_____% rh	n/a

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SENSIBLE EQUIPMENT COMPANY, INC.

Numbered Comments for "Room Cooling Application" worksheet.

1. Enter a brief system description. Is Primary cooling Chilled Water (CHW) or Direct Expansion (DX); is the heating from a central plant heating or is heating local to the unit; Is the air distribution Variable Air Volume (VAV) or Constant Air Volume (CAV). Use Additional Sheets if necessary.

2. We recommend calculating the cooling load for at least two conditions. Typically the Full Load performance is used to select the Primary Cooling Coil (CHW or DX) and the Part Load performance is used to select the precooling and reheat coils of the recuperative heat exchange process. If you prefer, just enter the full load data and we will approximate a part load condition.

3. TRICOIL® also provides the winter heating function. The precooling and reheat coils can be used in series flow such that they share the winter heating duty. Alternately, with the appropriate valve package, all of the heat can be added in the precooling or in the reheat coil. Unless otherwise indicated we will assume shared heating duty.

4. Enter the ambient temperature for cooling and heating calculations. For Full Load Calculations use the peak outside air dry bulb temperature and the mean coincident wet bulb temperature. (For high percentage outside air systems (over 50% outside air) we recommend using the peak wet bulb temperature.) For Part Load Calculations we suggest using the peak wet bulb temperature and the mean coincident dry bulb temperature.

5. Room Sensible Heat Gain includes heat gain through walls, roofs, windows, and skylights, and infiltration at full load and part load conditions. Do not include outside air heat gain or loss in the room Sensible Heat Gain.

6. Room Latent Heat Gain includes heat gain from people and infiltration. Do not include outside air heat gain or loss in the room Sensible Heat Gain.

7. Enter the heat gain or loss through the duct walls. Do not include the heat gain from the fan and motor. This will be accounted for with the static pressure.

8. Enter the expected external static pressure for the supply and return fans as applicable. Include pressure drop for filters but do not include pressure drop for coils.

9. The TRICOIL® method allows the designer to select the supply air relative humidity for cooling applications. Low supply air relative humidity reduces the possibility of mold, mildew, and bacteria growth in the supply air ductwork. We suggest using 70% supply air relative humidity as recommended in ASHRAE Standard 62 – 1989. This will result in about 25% increase in supply air volume. If the higher air volume is not desired, consider using the 70% for part load consideration and using a higher relative humidity for the peak load condition.