

HVAC Mandatory Provisions**Part II, 1 of 3**

Project Name:			
Project Address:			Date:
HVAC System Designer of Record:			Telephone:
Contact Person:			Telephone:
City:	Climate Zone:		
Zip:	Cooling Design DB Temp:	Cooling Design WB Temp:	Heating Design Temp:

Mandatory Equipment Efficiency Worksheet (Section 6.4.1.1)

System Tag	Equipment Type (Tables 6.8.1-1 through 6.8.1-20 and F1-F5)	Size Category (Tables 6.8.1-1 through 6.8.1-20 and F1-F5)	Subcategory or Rating Condition (Tables 6.8.1-1 through 6.8.1-20 and F1-F5)	Units of Efficiency (Tables 6.8.1-1 through 6.8.1-20 and F1-F5)	Minimum Efficiency (Tables 6.8.1-1 through 6.8.1-20 and F1-F5) Rated \geq Required
					\geq
					\geq
					\geq
					\geq
					\geq
					\geq

Mandatory Nonstandard Centrifugal Chiller Worksheet (Section 6.4.1.1)

Chiller Tag	Leaving Evaporator Temp. ($^{\circ}$ F or $^{\circ}$ C)	Entering Condenser Temp. ($^{\circ}$ F or $^{\circ}$ C)	Centrifugal Chiller K_{adj} Factor (Section 6.4.1.2) A/B	Type and Size Category (Table 6.8.1-3)	Path (A or B)	Table 6.8.1-3 Minimum Efficiency and Adjusted Efficiency* Table 6.8.1-3 Value/Adjusted Value	Actual Efficiency Rated \geq Required
			/			/	\geq
			/			/	\geq
			/			/	\geq
			/			/	\geq

* Adjustment applies only to water-cooled centrifugal chillers.

General Mandatory Requirements

- ☐ Yes ☐ N/A All heating and cooling equipment meet minimum efficiencies as required in Tables 6.8.1-1 through 6.8.1-20.
- ☐ Yes ☐ N/A Load calculations are provided for selection of all equipment and systems (Section 6.4.2.1).
- ☐ Yes ☐ N/A Pump head calculations are provided for selection of all pumps (Section 6.4.2.2).
- ☐ Yes ☐ N/A Zone control complies with the requirements of Section 6.4.3.1.
- ☐ Yes ☐ N/A Off hour controls comply with the requirements of Section 6.4.3.3.
- ☐ Yes ☐ N/A Stair and elevator shaft vents are provided with motorized dampers (Section 6.4.3.4.1)
- ☐ Yes ☐ N/A Ventilation fans with motors greater than 0.75 hp (0.56 kW) have automatic controls complying with Section 6.4.3.4.4.
- ☐ Yes ☐ N/A Enclosed parking garage ventilation systems meet the requirements of Section 6.4.3.4.5.
- ☐ Yes ☐ N/A Direct digital controls (DDC) are installed to comply with the requirements of Section 6.4.3.10.

Compliance Forms | HVAC Systems

- ☐ Yes ☐ N/A Air-cooled DX units with economizers have fault detection and diagnostic (FDD) systems which comply with Section 6.4.3.12.
- ☐ Yes ☐ N/A Piping insulation meets or exceeds the requirements of Section 6.4.4.1.3.
- ☐ Yes ☐ N/A Construction documents require record documents, manuals and system balancing (Sections 6.7.3.1, 6.7.3.2 and 6.7.3.3).
- ☐ Yes ☐ N/A Verification and testing performed and documented (Section 6.9.1).
- ☐ Yes ☐ N/A Commissioning performed and documented (Section 6.9.2).

Special Mandatory Requirements

- ☐ Yes ☐ N/A Freeze protection or snow/ice-melting systems (if any) have controls to prevent operation in warm weather (Section 6.4.3.7).
- ☐ Yes ☐ N/A High occupancy density areas are equipped with demand control ventilation (Section 6.4.3.8).
- ☐ Yes ☐ N/A HVAC systems serving vestibules have thermostats limiting heating and cooling (Section 6.4.3.9).
- ☐ Yes ☐ N/A Independent perimeter heating systems (if any) comply with the control requirements of Section 6.4.3.1.1.
- ☐ Yes ☐ N/A Independent heating and cooling thermostatic controls (if any) are interlocked to prevent crossover of setpoints (Section 6.4.3.2).
- ☐ Yes ☐ N/A Sensible heating panels are insulated per Section 6.4.4.1.4.
- ☐ Yes ☐ N/A Radiant floor heating is insulated per Section 6.4.4.1.5.
- ☐ Yes ☐ N/A Walk-in coolers and walk-in freezers comply with 6.4.5.

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Project Name:	
Contact Person:	Telephone:

Walk-In Coolers and Freezers Worksheet (Section 6.4.5)

Walk-in Freezer/Cooler Tag						
Doors are provided with closers (Section 6.4.5(a))						
Doorways have a means to reduce infiltration when door is open (Section 6.4.5(b))						
Walk-in cooler wall, ceiling, and door insulation is R-25 (R-4.4) or greater (Section 6.4.5(c))						
Walk-in freezer wall, ceiling, and door insulation is R-32 (R-5.6) or greater (Section 6.4.5(c))						
Walk-in freezer floor insulation is R-28 (R-4.9) or greater (Section 6.4.5(d))						
Evaporator fan motors are electronically commutated or three-phase (Section 6.4.5(e))						
Lights meet the minimum efficacy requirement (Section 6.4.5(f))						
Minimum insulation properties for windows and transparent reach-in door in freezers are met (Section 6.4.5(g))						
Minimum insulation properties for windows and transparent reach-in door in coolers are met (Section 6.4.5(h))						
Antisweat heaters meet the maximum power limitation or the controls requirement (Section 6.4.5(i) and Section 6.4.5(j))						
Condenser fan motors are electronically commutated, permanent split capacitor, or three-phase (Section 6.4.5(k))						
Freezer includes temperature-based defrost termination control (Section 6.4.5(l))						

Refrigerated Display Case Worksheet (Section 6.4.6)

Refrigerated Display Case Tag						
Meets the requirements of Section 6.4.1.1 and the performance requirements of Table 6.8.1-11 (Section 6.4.6(a))						
The lighting is automatically controlled by time clock or motion (Section 6.4.6(b))						
Low-temperature display cases include temperature-based defrost termination control (Section 6.4.6(c))						
Antisweat heater power is reduced in response to %RH outside the case (Section 6.4.6(d))						

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Project Name:	
Contact Person:	Telephone:

Systems Worksheet (Section 6.4)

System Tag						
Supply Airflow						
Direct-Expansion Cooling Capacity						
Supply Motor Power						
Outdoor Airflow						
Deadband (Section 6.4.3.1.2)						
Automatic Shutdown (Section 6.4.3.3.1)						
Setback Controls (Section 6.4.3.3.2)						
Setup Controls (Section 6.4.3.3.2)						
Optimum Start (Section 6.4.3.3.3)						
Zone Isolation (Section 6.4.3.3.4)						
Hotel/Motel Guest Room Controls (Section 6.4.3.3.5)						
Outdoor Air Shutoff Dampers (Section 6.4.3.4.2)						
Exhaust/Relief Shutoff Dampers (Section 6.4.3.4.2)						
Damper Leakage (Section 6.4.3.4.3)						
Heat Pump Auxiliary Heat (Section 6.4.3.5)						
Humidification/Dehumidification Deadband (Section 6.4.3.6)						
Ventilation Control for High Occupancy Areas (Section						
Duct/Plenum Insulation (Section 6.4.4.1.2)						
Duct Sealing Levels Supply/Return (Section 6.4.4.2.1)						
Duct Leakage Test (Section 6.4.4.2.2)						

In the table above, enter the appropriate codes from this list:

Deadband (Section 6.4.3.1.2)

- C1 Dual-setpoint control
- C2 Manual changeover control
- N1 N/A special occupancy (requires approval)
- N2 N/A heating or cooling only

Automatic Shutdown (Section 6.4.3.3.1)

- C1 Complying seven-day time clock with override
- C2 Complying occupant sensor
- C3 Complying manually operated time switch
- C4 Complying security system interlock
- C5 Complying residential system with two-day time clock
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤ 15 kBtu/h (4.4 kW) and manual on/off

Setback Controls (Section 6.4.3.3.2)

- C1 Setback provided
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤ 15 kBtu/h (4.4 kW) and manual on/off

N3 N/A radiant heating

Setup Controls (Section 6.4.3.3.2)

- C1 Setup provided
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤ 15 kBtu/h (4.4 kW) and manual on/off

Optimum Start (Section 6.4.3.3.3)

- C1 Optimum start provided
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤ 15 kBtu/h (4.4 kW) and manual on/off

Zone Isolation (Section 6.4.3.3.4)

- C1 Isolation areas provided
- N1 N/A Continuous operation
- N2 N/A ≤ 15 kBtu/h (4.4 kW) or $\leq 3/4$ hp (0.56 kW)
- N3 N/A All zones on same schedule
- N4 N/A Outdoor air/exhaust air $\leq 5,000$ cfm (2,400 L/s)
- N5 N/A Exhaust flow $< 10\%$

Hotel/Motel Guest Room Controls (Section 6.4.3.3.5)

- C1 Setpoint control provided
- C2 Ventilation control provided
- N1 N/A Continuous operation
- N2 N/A heating and cooling ≤ 15 kBtu/h (4.4 kW) and manual on/off
- N3 N/A 50 guest rooms or less

OSA Shutoff Dampers (Section 6.4.3.4.2)

- C1 Motorized shutoff dampers
- C2 Gravity shutoff dampers on outdoor air and building in Climate Zone 0, 1, 2, or 3
- N1 N/A Outdoor air ≤ 300 cfm (140 L/s)

Exhaust/Relief Shutoff Dampers (Section 6.4.3.4.2)

- C1 Motorized shutoff dampers on exhaust and relief
- C2 Gravity shutoff dampers on exhaust and relief and the building is less than three stories in height

Damper Leakage (Section 6.4.3.4.3)

- *C1 Outdoor air, exhaust, and relief dampers comply with Table 6.4.3.4.3*

Heat Pump Auxiliary Heat (Section 6.4.3.5)

- *C1 Complying controls provided*
- *N1 N/A system is not a heat pump*
- *N2 N/A auxiliary is not electric or is not provided*
- *N3 N/A heat pump covered by NAECA*

Humidification/Dehumidification Deadband (Section 6.4.3.6)

- *C1 Complying controls provided*
- *N1 N/A no humidification and/or dehumidification*

- *N2 N/A Desiccant with direct evap. cooling*
- *N3 N/A Specific humidity levels or precision control required*

Ventilation Control for High-Occupancy Areas (Section 6.4.3.8)

- *C1 All zones comply with Section 6.4.3.8*
- *N1 N/A Space $\leq 500 \text{ ft}^2$ (50 m^2) or < 25 people/1000 ft^2 (25 people/10 m^2)*
- *N2 N/A System does not qualify*
- *N3 N/A exhaust air energy recovery complies with Section 6.5.6.1*
- *N4 N/A system is multiple zone and has pneumatic controls*

- *N5 N/A design outdoor air $< 750 \text{ cfm}$ (375 L/s)*
- *N6 N/A Transfer (or makeup air) $> 75\%$ of design outdoor air*

Duct/Plenum Insulation (Section 6.4.4.1.2)

- *C1 Complying insulation provided*
- *N1 N/A all ducts located in conditioned space*

Duct Sealing (Section 6.4.4.2.1)

- *Enter highest seal level (A, B, or C) for supply and return*

Duct Leakage Test (Section 6.4.4.2.2)

- *Y Ducts will be tested for leakage*
- *N Ducts will not be tested for leakage*