

Mandatory Equipment Efficiency Worksheet (6.4.1.1)

System Tag	Equipment Type (Tables 6.8.1A through K)	Size Category (Tables 6.8.1A through K)	Sub-Category or Rating Condition (Tables 6.8.1A through K)	Units of Efficiency (Tables 6.8.1A through K)	Minimum Efficiency (Tables 6.8.1A through K)		
					Rated	≥	Required
						≥	
						≥	
						≥	
						≥	
						≥	
						≥	
						≥	

Mandatory Non-Standard Centrifugal Chiller Worksheet (6.4.1.1)

Chiller Tag	Leaving Evaporator Temperature (°F)	Leaving Condenser Temperature (°F)	Factors for Adjusted Efficiency from 6.4.1.2 A/B	Type and Size Category (Table 6.8.1C)	Path (A or B)	Table 6.8.1C Minimum Efficiency & Adjusted Efficiency Table 6.8.1C Value/Adjusted value	Minimum Efficiency (Tables 6.8.1H through J)		
							Rated	≥	Required
			/			/		≥	
			/			/		≥	
			/			/		≥	
			/			/		≥	

General Mandatory Requirements

- All heating and cooling equipment meet minimum efficiencies as required in Tables 6.8.1 (A through K) (6.4.1).
- Load calculations are provided for selection of all equipment and systems (6.4.2.1).
- Pump head calculations are provided for selection of all pumps (6.4.2.2).
- Zone control complies with the requirements of 6.4.3.1.1
- Stair and elevator shaft vents provided with motorized dampers (6.4.3.4.1)
- Ventilation fans with motors greater than 0.75 hp (1.0 kW) have automatic controls complying with Section 6.4.3.4.4.

- Enclosed parking garage ventilation systems meet the requirements of (6.4.3.4.5).
- Freeze protection or snow-melting systems meet the requirements of 6.4.3.8
- Piping insulation meets or exceeds the requirements of section 6.4.4.1.3.
- Construction documents require record drawings (6.7.2.1), manuals (6.7.2.2), system balancing (6.7.2.3) and system commissioning (6.7.2.4).

- Independent perimeter heating systems (if any) comply with the control requirements of 6.4.3.1.1.
- Independent heating and cooling thermostatic controls (if any) are interlocked to prevent crossover of set points (6.4.3.2).
- Sensible heating panels are insulated per 6.4.4.1.3
- Radiant floor heating is insulated per 6.4.4.1.5

Special Mandatory Requirements

- Freeze protection or snow/ice melting systems (if any) have controls to prevent operation in warm weather (6.4.3.8).

Project Name:	
Contact Person:	Telephone:

Systems Worksheet (6.4)

System Tag					
Supply CFM					
DX Cooling Capacity					
Supply Motor HP					
OA CFM (i.e. Outdoor Air CFM)					
Deadband (6.4.3.1.2)					
Automatic Shutdown (6.4.3.3.1)					
Setback Controls (6.4.3.3.2)					
Setup Controls (6.4.3.3.2)					
Optimum Start (6.4.3.3.3)					
Zone Isolation (6.4.3.3.4)					
OSA Shutoff Dampers (6.4.3.4.2)					
Exhaust/Relief Shutoff Dampers (6.4.3.4.2)					
Damper Leakage (6.4.3.4.3)					
Heat Pump Aux Heat (6.4.3.5)					
Humidifier Preheat (6.4.3.6)					
Humidification/Dehumidification Deadband (6.4.3.7)					
Ventilation Control for High Occupancy Areas (6.4.3.9)					
Single Zone Fan Control (6.4.3.10)					
Duct/Plenum Insulation (6.4.4.1.2)					
Duct Sealing Levels (6.4.4.2.1) Supply/Return					
Duct Leakage Test (6.4.4.2.2)					

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

Dead Band (6.4.3.1.2)

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

Automatic Shutdown (6.4.3.3.1)

- C1 Complying 7-day timeclock with override
- C2 Complying Occupant sensor
- C3 Complying manually operated timeswitch
- C4 Complying security system interlock
- C5 Complying residential system with 2-day timeclock
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤15 kbtu/h (4.4 kW) and manual on/off

Setback Controls (6.4.3.3.2)

- C1 Setback provided (down to 55F (13C))
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤15 kbtu/h (4.4 kW) and manual on/off
- N3 N/A not in climate zone 2 to 8
- N4 N/A radiant heating
- N5 N/A no heating

Setup Controls (6.4.3.3.2)

- C1 Setup provided (up to 90F (32C))
- N1 N/A continuous operation
- N2 N/A heating and cooling ≤15 kbtu/h (4.4 kW) and manual on/off
- N3 N/A not in climate zone 1b, 2b or 3b
- N4 N/A no cooling

Optimum Start (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
- N3 N/A supply ≤10,000 cfm (4,700 l/s)

OSA Shutoff Dampers (6.4.3.4.2)

- C1 Motorized shutoff dampers
- C2 Gravity shutoff dampers on OA and building in climate zone 1, 2 or 3
- N1 N/A OA ≤300 cfm (142 l/s)

Exhaust/Relief Shutoff Dampers (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 (6.4.3.4.3)

- C1 OSA, exhaust and relief dampers comply with Table 6.4.3.4.3

Zone Isolation (6.4.3.3.4)

- C1 Isolation areas provided
- N1 N/A continuous operation
- N2 N/A ≤15 kbtu/h (4.4 kW) or ≤3/4 hp (0.56 kW)
- N3 N/A all zones on same schedule
- N4 N/A OA/EA ≤5,000 cfm (2,360 l/s)

Heat Pump Aux Heat (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

Humidifier Preheat (6.4.3.6)

- C1 Complying controls provided
- N1 N/A no humidifier

Humidification/Dehumidification Dead Band (6.4.3.7)

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

Ventilation Control for High Occupancy Areas (6.4.3.9)

- C1 All zones comply with 6.4.3.9
- N1 N/A exhaust air energy recovery complies with 6.5.6.1
- N2 N/A system is multiple zone and has pneumatic controls
- N3 N/A design OSA <1,200 cfm (570 l/s)
- N4 N/A design OSA minus transfer (or make up air) <1,200 cfm (570 l/s)

Single Zone Fan Control (6.4.3.10)

- C1 Complies with 6.4.3.10
- N1 N/A CHW unit with supply motor hp <5hp (3.7 kW)
- N2 N/A DX unit with cooling capacity < 110 kbtu/h (32 kW)
- N3 N/A multiple Zone Unit

Duct/Plenum Insulation (6.4.4.1.2)

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

Duct Sealing (6.4.4.2.1)

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

Duct Leakage Test (6.4.4.2.2)

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