

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL ENV-MM
Project Name: New Office Building
Date: 12/1/2011
DESCRIPTION
Building Envelope Measures:
§118(a): Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§118(b): All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 7062 and 707 of Title 24, Part 2.
§117(a): The opaque portions of framed demising walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-13 between framing members.
§116(a): 1: Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft² of window area, 0.3 cfm/ft² of door area for residential doors, 0.3 cfm/ft² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft² for nonresidential double doors (swinging).
§116(a): 2: Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§116(a): 3: Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§116(b): Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
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MECHANICAL MANDATORY MEASURES: NONRESIDENTIAL MECH-MM
Project Name: New Office Building
Date: 12/1/2011
Equipment and System Efficiencies
§111: Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.
§115(a): Fan type central furnaces shall not have a pilot light.
§123: Piping, except that conveying fluids at temperatures between 60 and 105 degrees Fahrenheit, or within HVAC equipment, shall be insulated in accordance with Standards Section 123.
§124: Air handling duct systems shall be installed and insulated in compliance with Sections 601, 602, 603, 604, and 605 of the CMC Standards.
Controls
§122(a): Each space conditioning system shall be installed with one of the following:
1A. Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempt from the requirements of Section 112 (g)) shall be installed with an automatic time switch with an accessible manual override that allows operation of the system during off-hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the device's program and time setting for at least 10 hours if power is interrupted; or
1B. An occupancy sensor to control the operating period of the system; or
1C. A 4-hour timer that can be manually operated to control the operating period of the system.
2. Each space conditioning system shall be installed with controls that temporarily restart and temporarily operate the system as required to maintain a setback heating and/or a setup cooling thermostat setpoint.
§122(g): Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation zones. Each zone: shall not exceed 25,000 square feet; shall be provided with isolation devices, such as valves or dampers that allow the supply of heating or cooling to be setback or shut off independently of other isolation areas; and shall be controlled by a time control device as described above.
§122(c): Thermostats shall have numeric setpoints in degrees Fahrenheit (F) and adjustable setpoint slope accessible only to authorized personnel.
§122(b): Heat pumps shall be installed with controls to prevent electric resistance supplementary heater operation when the heating load can be met by the heat pump alone.
§122(a&b): Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a deadband of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.
Ventilation
§121(a): Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.
§122(f): All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.
§121(f): Ventilation System Acceptance. Before an occupancy permit is granted for a newly constructed building or space, or a new ventilating system serving a building or space is operated for normal use, all ventilation systems serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.
Service Water Heating Systems
§113(c) Installation
3. Temperature controls for public lavatories. The controls shall limit the outlet temperature to 110°F.
2. Circulating service water-heating systems shall have a control capable of automatically turning off the circulating pump when hot water is not required.
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MECHANICAL VENTILATION AND REHEAT MECH-3C
Project Name: New Office Building
Date: 12/1/2011
MECHANICAL VENTILATION (§121(b)2) REHEAT LIMITATION (§144(d))
Table with columns: AREA BASIS, OCCUPANCY BASIS, VAV MINIMUM. Rows include Zone/System, Reception, Office, Treatment Areas, Support, Suite A RTU-1, Office, Treatment Areas, Break Room, Support Areas, Suite A RTU-2, Waiting Area, Offices, Treatment Area, Support Areas, Suite B RTU-3, Totals.
C Minimum ventilation rate per Section §121, Table 121-A.
E Based on fixed seat or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
H Required Ventilation Air (REQD V.A.) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column D or G).
I Must be greater than or equal to H, or use Transfer Air (column N) to make up the difference.
J Design fan supply CFM (Fan CFM) x 50%; or the design zone outdoor airflow rate per §121.
K Condition area (ft²) x 0.4 CFM / ft²; or
L Maximum of Columns H, J, K, or 300 CFM
M This must be less than or equal to Column L and greater than or equal to the sum of Columns H plus N.
N Transfer Air must be provided where the Required Ventilation Air (Column H) is greater than the Design Minimum Air (Column M). Where required, transfer air must be greater than or equal to the difference between the Required Ventilation Air (Column H) and the Design Minimum Air (Column M), Column H minus M.
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MECHANICAL VENTILATION AND REHEAT MECH-3C
Project Name: New Office Building
Date: 12/1/2011
MECHANICAL VENTILATION (§121(b)2) REHEAT LIMITATION (§144(d))
Table with columns: AREA BASIS, OCCUPANCY BASIS, VAV MINIMUM. Rows include Zone/System, Treatment Areas, Support Areas, Suite B RTU-4, Office Suite C, Suite C RTU-5 & 6, Totals.
C Minimum ventilation rate per Section §121, Table 121-A.
E Based on fixed seat or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
H Required Ventilation Air (REQD V.A.) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column D or G).
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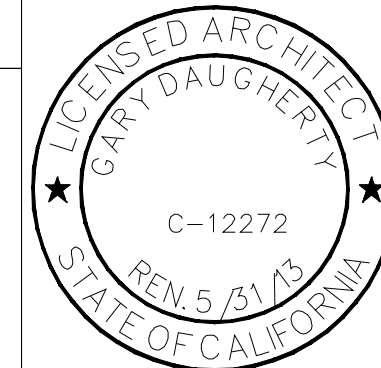
MECHANICAL EQUIPMENT DETAILS (Part 1 of 2) MECH-5C
Project Name: New Office Building
Date: 12/1/2011
CHILLER AND TOWER SUMMARY
Table with columns: Equipment Name, Type, Qty., Efficiency, Tons, Qty., GPM, BHP, Pump Control.
DHW / BOILER SUMMARY
Table with columns: System Name, Type, Distribution, Qty., Rated Input, Vol. (Gals.), Energy Factor or RE, Standby Loss or Pilot, Tank Ext. R-Value, Status.
MULTI-FAMILY CENTRAL WATER HEATING DETAILS
Table with columns: Control, Hot Water Pump, Qty., HP, Type, In Plenum, Outside, Buried, Add 'in' Insulation.
CENTRAL SYSTEM RATINGS
Table with columns: System Name, Type, Qty., Output, Aux. kW, Efficiency, Output, Efficiency, Status.
CENTRAL SYSTEM FAN SUMMARY
Table with columns: System Name, Fan Type, Economizer Type, CFM, BHP, RETURN FAN CFM, BHP.
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AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C
Project Name: New Office Building
Date: 12/1/2011
Table with columns: Item or System Tags, Suite A RTU-1, Suite A RTU-2, Suite B RTU-3. Rows include Heating Equipment Efficiency, Cooling Equipment Efficiency, HVAC Heat Pump Thermostat, Furnace Controls/Thermostat, Natural Ventilation, Mechanical Ventilation, VAV Minimum Position Control, Demand Control Ventilation, Time Control, Setback and Setup Control, Outdoor Damper Control, Isolation Zones, Pipe Insulation, Duct Location/ R-value, Calculated Design Heating Load, Proposed Heating Capacity, Calculated Design Cooling Load, Proposed Cooling Capacity, Fan Control, DP Sensor Location, Supply Pressure Reset (DDC only), Simultaneous Heat/Cool, Economizer, Heat Air Supply Reset, Cool Air Supply Reset, Electric Resistance Heating, Air Cooled Chiller Limitation, Duct Leakage Sealing, Pipe Insulation, Duct Location/ R-value, Calculated Design Heating Load, Proposed Heating Capacity, Calculated Design Cooling Load, Proposed Cooling Capacity, Fan Control, DP Sensor Location, Supply Pressure Reset (DDC only), Simultaneous Heat/Cool, Economizer, Heat Air Supply Reset, Cool Air Supply Reset, Electric Resistance Heating, Air Cooled Chiller Limitation, Duct Leakage Sealing, Pipe Insulation, Duct Location/ R-value.
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AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C
Project Name: New Office Building
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Table with columns: Item or System Tags, Suite B RTU-4, Suite C RTU-5 & 6. Rows include Heating Equipment Efficiency, Cooling Equipment Efficiency, HVAC Heat Pump Thermostat, Furnace Controls/Thermostat, Natural Ventilation, Mechanical Ventilation, VAV Minimum Position Control, Demand Control Ventilation, Time Control, Setback and Setup Control, Outdoor Damper Control, Isolation Zones, Pipe Insulation, Duct Location/ R-value, Calculated Design Heating Load, Proposed Heating Capacity, Calculated Design Cooling Load, Proposed Cooling Capacity, Fan Control, DP Sensor Location, Supply Pressure Reset (DDC only), Simultaneous Heat/Cool, Economizer, Heat Air Supply Reset, Cool Air Supply Reset, Electric Resistance Heating, Air Cooled Chiller Limitation, Duct Leakage Sealing, Pipe Insulation, Duct Location/ R-value, Calculated Design Heating Load, Proposed Heating Capacity, Calculated Design Cooling Load, Proposed Cooling Capacity, Fan Control, DP Sensor Location, Supply Pressure Reset (DDC only), Simultaneous Heat/Cool, Economizer, Heat Air Supply Reset, Cool Air Supply Reset, Electric Resistance Heating, Air Cooled Chiller Limitation, Duct Leakage Sealing, Pipe Insulation, Duct Location/ R-value.
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| NO. | REVISION | BY | DATE |
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DATE: 11.28.11
JOB NO: TM/SL/JH
DRAWN: PK
CHECKED: GD/PK
SCALE: AS NOTED SHEET

M1.4
OF SHEETS