



## CERTIFICATE OF COMPLIANCE

|                    |                     |
|--------------------|---------------------|
| Project Name:      | Enforcement Agency: |
| Dwelling Address:  | Permit Number:      |
| City and Zip Code: | Date Permit Issued: |

## A. GENERAL INFORMATION

|                          |                                 |                                     |                          |                                      |                                                |
|--------------------------|---------------------------------|-------------------------------------|--------------------------|--------------------------------------|------------------------------------------------|
| 01                       | Project Location (city)         |                                     | 04                       | Total Conditioned Floor Area         |                                                |
| 02                       | Climate Zone                    |                                     | 05                       | Total Unconditioned Floor Area       |                                                |
| 03                       | Occupancy Types Within Project: |                                     | 06                       | # of Stories (Habitable Above Grade) |                                                |
| <input type="checkbox"/> | Office                          | <input type="checkbox"/> Retail     | <input type="checkbox"/> | Warehouse                            | <input type="checkbox"/> Hotel/Motel           |
| <input type="checkbox"/> | Low-Rise Residential            | <input type="checkbox"/> Commercial | <input type="checkbox"/> | Healthcare Facility                  | <input type="checkbox"/> School                |
| <input type="checkbox"/> | Auditorium                      | <input type="checkbox"/> Library    | <input type="checkbox"/> | Relocatable School Building          | <input type="checkbox"/> Theater               |
| <input type="checkbox"/> | Classroom                       | <input type="checkbox"/> Gymnasium  | <input type="checkbox"/> | Grocery Store                        | <input type="checkbox"/> Medical Clinic        |
| <input type="checkbox"/> | Restaurant/Commercial Kitchen   |                                     |                          |                                      | <input type="checkbox"/> Religious Facility    |
|                          |                                 |                                     |                          |                                      | <input type="checkbox"/> Financial Institution |
|                          |                                 |                                     |                          |                                      | <input type="checkbox"/> Support Areas         |
|                          |                                 |                                     |                          |                                      | <input type="checkbox"/> Sports Arena          |
|                          |                                 |                                     |                          |                                      | <input type="checkbox"/> Convention Center     |
|                          |                                 |                                     |                          |                                      | <input type="checkbox"/> All Others            |

## B. PROJECT SCOPE

*This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, 170.2(b) or §141.0(b)2 and 180.2(b)2 for alterations.*

**My project consists of (check all that apply)**

| 01                       |                                                          | 02                       |                  | 03                       |                                               |
|--------------------------|----------------------------------------------------------|--------------------------|------------------|--------------------------|-----------------------------------------------|
| Air System(s)            |                                                          | Wet System Components    |                  | Dry System Components    |                                               |
| <input type="checkbox"/> | Heating Air System                                       | <input type="checkbox"/> | Water Economizer | <input type="checkbox"/> | Air Economizer                                |
| <input type="checkbox"/> | Cooling Air System                                       | <input type="checkbox"/> | Pumps            | <input type="checkbox"/> | Electric Resistance Heat                      |
| <input type="checkbox"/> | Ventilation (including DOAS, ERV, HRV systems)           | <input type="checkbox"/> | System Piping    | <input type="checkbox"/> | Fan Systems                                   |
| Mechanical Controls      |                                                          | <input type="checkbox"/> | Cooling Towers   | <input type="checkbox"/> | Ductwork (existing to remain, altered or new) |
|                          |                                                          | <input type="checkbox"/> | Chillers         | <input type="checkbox"/> | Zonal Systems/ Terminal Boxes                 |
| <input type="checkbox"/> | Mechanical Controls (existing to remain, altered or new) | <input type="checkbox"/> | Boilers          |                          |                                               |

**C. COMPLIANCE RESULTS**

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliance for guidance.

| 01                                                                                            |     | 02                                                    |     | 03                                                                        |     | 04                                                                             |     | 05                                                    |     | 06                                                    |     | 07                                                                                             |     | 08                                                    | 09                                                                                                                                     |
|-----------------------------------------------------------------------------------------------|-----|-------------------------------------------------------|-----|---------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------|-----|-------------------------------------------------------|-----|-------------------------------------------------------|-----|------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| System Summary<br>§110.1,<br>§110.2,<br>§140.4,<br>§170.2(c),<br>§141.0(b),<br>§180.2(b)<br>2 | AND | Pumps<br>§140.4(k),<br>§170.2(c)4I                    | AND | Fans/<br>Economizers<br>§140.4(c),<br>§140.4€,<br>§140.4(p),<br>§170.2(c) | AND | System Controls<br>§110.2,<br>§120.2,<br>§140.4(f),<br>§140.4(r),<br>§170.2(c) | AND | Ventilation<br>§120.1,<br>§160.2                      | AND | Terminal Box Controls<br>§140.4(d),<br>§170.2(c)4B    | AND | Distribution §120.3,<br>§120.4,<br>§160.2,<br>§160.3,<br>§141.0(b)<br>2D,<br>§180.2(b)<br>2Bii | AND | Cooling Towers<br>§110.2(e)2                          | Compliance Results                                                                                                                     |
| (See Table F)                                                                                 |     | (See Table G)                                         |     | (See Table H)                                                             |     | (See Table I)                                                                  |     | (See Table J)                                         |     | (See Table K)                                         |     | (See Table L)                                                                                  |     | (See Table M)                                         |                                                                                                                                        |
| <input type="radio"/> Yes<br><input type="radio"/> No                                         | AND | <input type="radio"/> Yes<br><input type="radio"/> No | AND | <input type="radio"/> Yes<br><input type="radio"/> No                     | AND | <input type="radio"/> Yes<br><input type="radio"/> No                          | AND | <input type="radio"/> Yes<br><input type="radio"/> No | AND | <input type="radio"/> Yes<br><input type="radio"/> No | AND | <input type="radio"/> Yes<br><input type="radio"/> No                                          | AND | <input type="radio"/> Yes<br><input type="radio"/> No | <input type="radio"/> COMPLIES<br><input type="radio"/> COMPLIES WITH EXCEPTIONAL CONDITIONS"<br><input type="radio"/> DOES NOT COMPLY |
| Mandatory Measures Compliance (See Table Q for Details)                                       |     |                                                       |     |                                                                           |     |                                                                                |     |                                                       |     |                                                       |     |                                                                                                |     |                                                       | <input type="radio"/> COMPLIES<br><input type="radio"/> DOES NOT COMPLY                                                                |

**D. EXCEPTIONAL CONDITIONS**

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)**



*This table is used to demonstrate compliance for mechanical equipment with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4 (a), §140.4(b), §170.2(c)1, §170.2(c)3, §140.4(k) or §141.0(b)2 and §180.2(b)2 for alterations.*

### Space Conditioning System Information

| 01               | 02       | 03             | 04            | 05         | 06                       | 07                       |
|------------------|----------|----------------|---------------|------------|--------------------------|--------------------------|
| Name or Item Tag | Quantity | System Serving | System Status | Space Type | Utilizing Recovered Heat | Distribution System Type |
|                  |          |                |               |            | <input type="checkbox"/> |                          |

### Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces, unit heaters and DOAS systems)

| 01               | 02                                                               | 03                                         | 04                                                             | 05                                                                                         | 06             | 07                            | 08                           | 09                               | 10                          | 11                                   |
|------------------|------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------|-------------------------------|------------------------------|----------------------------------|-----------------------------|--------------------------------------|
| Name or Item Tag | Equipment Category per Tables 110.2, §140.4(a)2 and §170.2(c)3ai | Equipment Type per Tables 110.2 & Title 20 | Smallest Size Available <sup>1</sup><br>§140.4(a) & §170.2(c)1 | Equipment Sizing per Mechanical Schedule (kBtu/h)<br>§140.4 (a&b), §170.2(c)1 & §170.2(c)2 |                |                               |                              |                                  |                             |                                      |
|                  |                                                                  |                                            |                                                                | Heating Output <sup>2,3</sup>                                                              |                | Cooling Output <sup>2,3</sup> |                              | Load Calculations <sup>3,4</sup> |                             |                                      |
|                  |                                                                  |                                            |                                                                | Per Design (kBtu/h)                                                                        | Rated (kBtu/h) | Supp. Heating Output (kBtu/h) | Sensible Per Design (kBtu/h) | Rated (kBtu/h)                   | Total Heating Load (kBtu/h) | Total Sensible Cooling Load (kBtu/h) |
|                  |                                                                  |                                            |                                                                |                                                                                            |                |                               |                              |                                  |                             |                                      |

<sup>1</sup> FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.

<sup>2</sup> It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.

<sup>3</sup> If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.

<sup>4</sup> Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c)2.

**Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC), Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)**

| 01               | 02                    | 03                    | 04              | 05                                                     | 06                | 07                             | 08              | 09                                                     | 10                |
|------------------|-----------------------|-----------------------|-----------------|--------------------------------------------------------|-------------------|--------------------------------|-----------------|--------------------------------------------------------|-------------------|
| Name or Item Tag | Size Category (Btu/h) | Heating Mode          |                 |                                                        |                   | Cooling Mode                   |                 |                                                        |                   |
|                  |                       | Rating Condition (°F) | Efficiency Unit | Minimum Efficiency Required per Tables 110.2/ Title 20 | Design Efficiency | Refrigerant Loop Heat Recovery | Efficiency Unit | Minimum Efficiency Required per Tables 110.2/ Title 20 | Design Efficiency |
|                  |                       |                       |                 |                                                        |                   |                                |                 |                                                        |                   |
|                  |                       |                       |                 |                                                        |                   |                                |                 |                                                        |                   |

**Dry System Equipment Efficiency (Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP) only)**

| 01               | 02                             | 03                                     | 04         | 05                             | 06                                     | 07         |
|------------------|--------------------------------|----------------------------------------|------------|--------------------------------|----------------------------------------|------------|
| Name or Item Tag | Heating Mode                   |                                        |            | Cooling Mode                   |                                        |            |
|                  | Rated Output Capacity (kBtu/h) | Minimum COP Required per Table 110.2-E | Design COP | Rated Output Capacity (kBtu/h) | Minimum EER Required per Table 110.2-E | Design EER |
|                  |                                |                                        |            |                                |                                        |            |

**Boiler Efficiency and Controls**

|                          |                                                                                                                       |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------|---------------------------------------------------------------|----------------------------------------|-----------------|-----------------------------------------------|-------------------|---------------------------------|---------------------------------------------|
| Boiler System Serving:   |                                                                                                                       |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| <input type="checkbox"/> | 25% of annual space heating is provided by on site renewable energy, site recovered energy, or heat recovery chillers |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| <input type="checkbox"/> | 50% or more of the design heating load is served using perimeter convective heating, and/or radiant panels            |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| <input type="checkbox"/> | Installed In Multifamily Building                                                                                     |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| <input type="checkbox"/> | Boiler system added to an existing building                                                                           |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| 01                       | 02                                                                                                                    | 03  | 04                                           | 05                                                            | 06                                     | 07              | 08                                            | 09                | 09                              | 10                                          |
| Boiler System Serving:   | Equipment Type <sup>1</sup>                                                                                           | Qty | Rated Input Capacity (Btu/h) <sup>2, 3</sup> | Rated Efficiency                                              | Minimum Efficiency Required per §110.2 | Efficiency Unit | Boiler Controls per §140.4(k) & §170.2(c)liii |                   | High Capacity Boiler Exceptions | HVAC Hot Water Supply Temperature §120.2(l) |
|                          |                                                                                                                       |     |                                              |                                                               |                                        |                 | Isolation Valve                               | Temperature Reset |                                 |                                             |
|                          |                                                                                                                       |     |                                              |                                                               |                                        |                 |                                               |                   |                                 |                                             |
| System Efficiency        |                                                                                                                       |     |                                              | Minimum System Efficiency Required per Tables 110.2/ Title 20 |                                        |                 |                                               |                   |                                 |                                             |

<sup>1</sup> FOOTNOTES: Use LMCC-PLB to document compliance with domestic hot water and service water heating systems<sup>2</sup> Maximum capacity-maximum ratings per the certified unit capacity<sup>3</sup> Includes oil-fired (residual)**Chiller & Air To Water Heat Pump Efficiency and Controls**

|                  |                |     |                                   |                                                                  |                    |                                               |                 |                                     |                   |
|------------------|----------------|-----|-----------------------------------|------------------------------------------------------------------|--------------------|-----------------------------------------------|-----------------|-------------------------------------|-------------------|
| 01               | 02             | 03  | 04                                | 05                                                               | 06                 | 07                                            | 08              | 09                                  | 10                |
| Name or Item Tag | Equipment Type | Qty | Size Category <sup>1</sup> (Tons) | Chiller Efficiency "Path B" Exception per §140.4(i) & §170.2(c)g | Rated Efficiencies | Efficiencies Required per §110.2 <sup>2</sup> | Efficiency Unit | Controls per §140.4(k) & §170.2(c)l |                   |
|                  |                |     |                                   |                                                                  |                    |                                               |                 | Isolation Valve                     | Temperature Reset |
|                  |                |     |                                   |                                                                  |                    |                                               |                 |                                     |                   |
|                  |                |     |                                   |                                                                  |                    |                                               |                 |                                     |                   |

<sup>1</sup> FOOTNOTES: Chilled water plants shall not have more than 300 tons provided by air-cooled chillers. Exceptions may apply per §140.4(j).



<sup>2</sup> Efficiency required is a minimum when "EER" or "COP" is the Efficiency Unit in column 08. It is also a minimum when "IPLV" is the unit for air-cooled, absorption, and water cooled gas engine chillers. Efficiency required is a maximum when "kW/ton" is the Efficiency Unit and when "IPLV" is the unit for water cooled electrically operated chillers.

**DX-DOAS EFFICIENCY**

| 01               | 02             | 03       | 04              | 05               | 06                 | 07              | 08                 |
|------------------|----------------|----------|-----------------|------------------|--------------------|-----------------|--------------------|
| Name or Item Tag | Equipment Type | Quantity | Energy Recovery | Rating Condition | Rated Efficiencies | Efficiency Unit | Minimum Efficiency |
|                  |                |          |                 |                  |                    |                 |                    |

**Dual Fuel Heat Pump**

| 01               | 02                 | 03             | 04                    | 05                    | 06              | 07                                                     | 08                | 09              | 10                                                     | 11                |
|------------------|--------------------|----------------|-----------------------|-----------------------|-----------------|--------------------------------------------------------|-------------------|-----------------|--------------------------------------------------------|-------------------|
| Name or Item Tag | Equipment Category | Equipment Type | Size Category (Btu/h) | Heating Mode          |                 |                                                        |                   | Cooling Mode    |                                                        |                   |
|                  |                    |                |                       | Rating Condition (°F) | Efficiency Unit | Minimum Efficiency Required per Tables 110.2/ Title 20 | Design Efficiency | Efficiency Unit | Minimum Efficiency Required per Tables 110.2/ Title 20 | Design Efficiency |
|                  |                    |                |                       |                       |                 |                                                        |                   |                 |                                                        |                   |
|                  |                    |                |                       |                       |                 |                                                        |                   |                 |                                                        |                   |

**Heat Rejection Equipment (Cooling Towers, Condensers, Waterside Economizers) Efficiency and Controls**

| 01                        | 02                          | 03  | 04                          | 05                   | 06                                                                                            | 07                  | 08                                 | 09                                   | 10                                                            | 11                                  | 12                                        |
|---------------------------|-----------------------------|-----|-----------------------------|----------------------|-----------------------------------------------------------------------------------------------|---------------------|------------------------------------|--------------------------------------|---------------------------------------------------------------|-------------------------------------|-------------------------------------------|
| Name<br>or<br>Item<br>Tag | Equipment Type <sup>1</sup> | Qty | Rating<br>Condition<br>(°F) | Rated<br>Performance | Minimum<br>Required<br>Performance<br>per Table<br>110.2-E,<br>§140.4(h)5<br>&<br>§170.2(c)fv | Performance<br>Unit | Fan Speed<br>Control<br>§140.4(h)1 | Tower Flow<br>Turndown<br>§140.4(h)2 | Fan Control<br>in Multiple<br>Cell<br>Equipment<br>§140.4(h)4 | Economizer<br>Controls<br>§140.4(e) | Condenser<br>Water Temp<br>Reset Controls |
|                           |                             |     |                             |                      |                                                                                               |                     |                                    |                                      |                                                               |                                     |                                           |

<sup>1</sup> FOOTNOTES: Centrifugal fan open-circuit towers are not allowed for rated capacities  $\geq 900$  gpm at 95°F condenser water return, 85°F condenser water supply and 75°F outdoor wet-bulb temperature. Exceptions may apply per §140.4(h)4.

**Electric Resistance Heating**

| 01               | 02                    | 03                   | 04                                                                     |
|------------------|-----------------------|----------------------|------------------------------------------------------------------------|
| Name or Item Tag | Equipment Description | Output Capacity (kW) | Applicable Exception to §140.4(g) Allowing Electric Resistance Heating |
|                  |                       |                      |                                                                        |

**Mechanical Heat Recovery**

| 01               | 02                                                   | 03                                                             | 04                                                                | 05                                            | 06                                    | 07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name or Item Tag | Coincident Peak Cooling Load of All High Load Spaces | Design Capacity of All Mechanical Cooling Systems <sup>2</sup> | Design Capacity of All Service Water Heating Systems <sup>1</sup> | Design Capacity for all space heating systems | Simultaneous Mechanical Heat Recovery | Heat Recovery Systems Shall:<br>- Transferring the lesser of the following from spaces in cooling to spaces in heating:<br>- 25% of the peak heat rejection of the cooling system<br>- 25% of design capacity of all service water heating systems + design capacity of all space heating systems<br>- Heat or preheat the service water heating to the smaller of:<br>- 30% of the peak heat rejection of the cooling system; or<br>- 30% of design capacity of all service water heating systems |
|                  |                                                      |                                                                |                                                                   |                                               |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**G. PUMPS**

*This table is used to demonstrate compliance with Prescriptive hydronic system requirements found in §140.4(k) & §170.2(c)4I applicable to pumps < 5hp.*

| 01               | 02             | 03  | 04 | 05                                   | 06                           | 07                 | 08                           |
|------------------|----------------|-----|----|--------------------------------------|------------------------------|--------------------|------------------------------|
| Name or Item Tag | Equipment Type | Qty | HP | Controls per §140.4(k) & §170.2(c)4I |                              |                    |                              |
|                  |                |     |    | Variable Flow                        | Hydronic Heat Pump Isolation | VSD on Pumps > 5HP | Differential Pressure Sensor |
|                  |                |     |    |                                      |                              |                    |                              |



**H. FAN SYSTEMS & AIR ECONOMIZERS**

*This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e) §140.4(m), §170.2(c)3 & §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.*

| System Name:         |          | Quantity |            | Fan System Status: |  | System Zoning |  | Serving Dwelling Units                 |                    | Fan System Airflow (cfm) |                                       | Site Elevation                         |                            | Economizer                         |  |
|----------------------|----------|----------|------------|--------------------|--|---------------|--|----------------------------------------|--------------------|--------------------------|---------------------------------------|----------------------------------------|----------------------------|------------------------------------|--|
| 01                   | 02       | 03       | 04         |                    |  |               |  | 05                                     | 06                 | 07                       | 08                                    | 09                                     | 10                         | 11                                 |  |
| Fan Name or Item Tag | Fan Type | Qty      | Components |                    |  |               |  | Airflow Through Component (%)          | Water Gauge (w.g.) | Allowance                |                                       | Design                                 |                            |                                    |  |
|                      |          |          |            |                    |  |               |  |                                        |                    | Component Allowance      | Fan Allowance <sup>3</sup> (watt/cfm) | Design Electrical Input Power Method   | Motor Nameplate Horsepower | Design Electrical Input Power (kw) |  |
|                      |          |          |            |                    |  |               |  |                                        |                    |                          |                                       |                                        |                            |                                    |  |
|                      |          |          |            |                    |  |               |  |                                        |                    |                          |                                       |                                        |                            |                                    |  |
|                      |          |          |            |                    |  |               |  |                                        |                    |                          |                                       |                                        |                            |                                    |  |
|                      |          |          |            |                    |  |               |  |                                        |                    |                          |                                       |                                        |                            |                                    |  |
|                      |          |          |            |                    |  |               |  | Fan System Allowance <sup>3</sup> (kW) |                    |                          |                                       | Fan System Electrical Input Power (kW) |                            |                                    |  |

<sup>1</sup> Fans serving spaces with design background noise goals below NC35

<sup>2</sup> Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.

<sup>3</sup> Fan system allowance includes fan system base allowance

<sup>4</sup> Filter pressure loss can only be counted once per fan system

<sup>5</sup> Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both

<sup>6</sup> Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document.



<sup>7</sup> FOOTNOTE: Indoor fans meeting the requirements of 140.4(a)3D shall turn off when there is no demand for heating or cooling in the space. At 66% air flow the power draw shall be no more than 51% of the fan power at full fan speed and at 33% airflow the power draw shall be no more than 12% of the fan power at full fan speed.

**Dwelling Unit Fan Efficacy & Energy/Heat Recovery 170.2(C)3b**

| 01                          | 02  | 03                    | 04                | 05                   | 06                 | 07                           | 08                            | 09                    | 10                                  | 11                                    |
|-----------------------------|-----|-----------------------|-------------------|----------------------|--------------------|------------------------------|-------------------------------|-----------------------|-------------------------------------|---------------------------------------|
| Fan System Name or Item Tag | Qty | System Dwelling Units | Forced Air System | System Airflow (cfm) | Design Power (kW ) | Design Watts/CFM §170.2(c)3b | Maximum Watts/CFM §170.2(c)3b | ERV/HRV §170.2(c)3biv | Design Sensible Recovery/Efficiency | Required Sensible Recovery/Efficiency |
|                             |     |                       |                   |                      |                    |                              |                               |                       |                                     |                                       |

**Exhaust Air Heat Recovery 140.4(Q), 170.2(C)4o**

| 01              | 02  | 03                          | 04                         | 05              | 06                                   | 07                                                                              | 08                                                | 09                           | 10                      | 11                     |
|-----------------|-----|-----------------------------|----------------------------|-----------------|--------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|-------------------------|------------------------|
| Fan System Name | Qty | Hours of Operation Per Year | Design Supply Airflow Rate | Outdoor Airflow | % Outdoor Air at Full Design Airflow | Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4o | Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4o | Type Of Heat Recovery Rating | Required Recovery Ratio | Energy Recovery Bypass |
|                 |     |                             |                            |                 |                                      |                                                                                 |                                                   |                              |                         |                        |

**Dedicated Outdoor Air System (DOAS)**

| 01               | 02       | 03                              | 04               | 05                                                    | 06               |
|------------------|----------|---------------------------------|------------------|-------------------------------------------------------|------------------|
| Name or Item Tag | Quantity | Delivered Directly To The Space | DOAS Fan Control | Multi-Zone DOAS with Cooling §140.4(p)4 & §170.2(c)4N | Multifamily DOAS |
|                  |          |                                 |                  |                                                       |                  |

**Fan Energy Index (FEI)**

| 01               | 02            | 03  |
|------------------|---------------|-----|
| Name or Item Tag | FEI Exception | FEI |
|                  |               |     |

**I. SYSTEM CONTROLS**

*This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.*

| 01          | 02            | 03                                                     | 04                                                                                           | 05                                      | 06                                              | 07                                               | 08                                             | 09                                            | 10                                       |
|-------------|---------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------|--------------------------------------------------|------------------------------------------------|-----------------------------------------------|------------------------------------------|
| System Name | System Zoning | Conditioned Floor Area Being Served (ft <sup>2</sup> ) | Thermostats §110.2(b), (c) <sup>1</sup> , §120.2(a), §160.3(a)2a or §141.0(b)2E & §180.2(b)2 | Shut-Off Controls §120.2€ & §160.3(a)2d | Isolation Zone Controls §120.2(g) & §160.3(a)2f | Demand Response §110.12, §120.2(b) & §160.3(a)2b | Supply Air Temp. Reset §140.4(f) & §170.2(c)4d | Window Interlocks per §140.4(n) & §170.2(c)4d | Direct Digital Control (DDC) per §110.12 |
|             |               |                                                        |                                                                                              |                                         |                                                 |                                                  |                                                |                                               |                                          |

<sup>1</sup> FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

**J. VENTILATION AND INDOOR AIR QUALITY**

*This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.*

|    |                          |                                                                                                                                                |                                                                                  |                          |
|----|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|
| 01 | <input type="checkbox"/> | Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table. |                                                                                  |                          |
| 02 | <input type="checkbox"/> | Check this box if the project includes Nonresidential, Hotel/Motel spaces or Multifamily Common Use Spaces                                     | Check this box if the project includes new or altered multifamily dwelling units | <input type="checkbox"/> |
| 03 | <input type="checkbox"/> | Check the box if the project is using natural ventilation in any nonresidential spaces to meet required ventilation rates per §120.1(c)2.      |                                                                                  |                          |

**Nonresidential Hotel/ Motel and Multifamily Common Use Ventilation Systems**



|                        |                                                                          |                                            |                          |                          |                     |                                        |                                       |                                                                                                                                 |  |
|------------------------|--------------------------------------------------------------------------|--------------------------------------------|--------------------------|--------------------------|---------------------|----------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--|
| 04                     |                                                                          | 05                                         |                          |                          | 06                  |                                        |                                       | 07                                                                                                                              |  |
| System Name:           |                                                                          | System Design OA CFM Air Flow <sup>1</sup> |                          |                          |                     | System Design Transfer Air CFM         |                                       | Air Filtration per §120.1(c), §141.0(b)2, 160.2(c)1 and <sup>2</sup>                                                            |  |
|                        |                                                                          |                                            |                          |                          |                     |                                        |                                       |                                                                                                                                 |  |
| 08                     | 09                                                                       | 10                                         | 11                       | 12                       | 13                  | 14                                     | 15                                    | 16                                                                                                                              |  |
| Space Name or Item Tag | Mechanical Ventilation Required per §120.1(c)3 <sup>3</sup> & §160.2(c)3 |                                            |                          |                          |                     | Exh. Vent. per §120.1(c)4 & §160.2(c)4 |                                       | DCV or Occupant Sensor Controls per §120.1(d)3, §120.1(d)5 & §120.2(e)3 <sup>6</sup> , §160.2(c)5d, §160.2(c)5e & §160.2(c)diii |  |
|                        | Occupancy Type <sup>4</sup>                                              | Conditioned Floor Area (ft <sup>2</sup> )  | # of showerheads/toilets | # of people <sup>5</sup> | Required Min OA CFM | Required Minimum CFM                   | Provided per Design CFM               |                                                                                                                                 |  |
|                        |                                                                          |                                            |                          |                          |                     |                                        |                                       | DCV                                                                                                                             |  |
|                        |                                                                          |                                            |                          |                          |                     |                                        |                                       | Occ Sensor                                                                                                                      |  |
| 17                     | Total System Required Min OA CFM                                         |                                            |                          |                          |                     | 18                                     | Ventilation for this System Complies? |                                                                                                                                 |  |

<sup>1</sup> FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system.

<sup>2</sup> Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

<sup>3</sup> Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

<sup>4</sup> See Standards Tables 120.1-A and 120.1-B.

<sup>5</sup> For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

<sup>6</sup> §120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft<sup>2</sup> or smaller, multipurpose rooms less than 1,000ft<sup>2</sup>, classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

<sup>7</sup> Air classification and recirculation limitations of air shall be based on the air classification as listed in Table 120.1-A or Table 120.1-C, and in accordance with the requirements of Sections 120.1(g)1 through 4

**Multifamily Dwelling Unit Ventilation Systems**

|                          |                                                                                                                      |            |                  |                                  |                        |                                   |                          |                                 |                                          |  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|------------|------------------|----------------------------------|------------------------|-----------------------------------|--------------------------|---------------------------------|------------------------------------------|--|
| <input type="checkbox"/> | Check the box if the system is using continuous ventilation to meet the ventilation requirements per §160.2(b)2Aivb2 |            |                  |                                  |                        |                                   |                          |                                 |                                          |  |
| 19                       | 20                                                                                                                   | 21         | 22               | 23                               | 24                     | 25                                | 26                       |                                 | 27                                       |  |
| Space Name or Item Tag   | Mechanical Ventilation Required per §120.1(b)2 & §160.2(b)2                                                          |            |                  |                                  | Ventilation per Design |                                   | Local Exhaust            |                                 | Air Filtration per 120.1(c) & §160.2(b)1 |  |
|                          | Conditioned Floor Area (ft <sup>2</sup> )                                                                            | # bedrooms | # dwelling units | Required Min OA CFM <sup>1</sup> | Supply Air CFM         | Exhaust CFM                       |                          |                                 |                                          |  |
|                          |                                                                                                                      |            |                  |                                  |                        |                                   | <input type="checkbox"/> | Bathroom/Kitchen IAQ            |                                          |  |
|                          |                                                                                                                      |            |                  |                                  |                        |                                   | <input type="checkbox"/> | Bathroom/Kitchen IAQ & Vent.    |                                          |  |
|                          |                                                                                                                      |            |                  |                                  |                        |                                   | <input type="checkbox"/> | Kitchen Range Hood <sup>2</sup> |                                          |  |
| 28                       | Is this a balanced system? <sup>4</sup>                                                                              |            |                  |                                  | 29                     | Meeting Outside Air Requirements? |                          |                                 |                                          |  |

<sup>1</sup> FOOTNOTES: Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

<sup>2</sup> Kitchen range hood will be verified per NA7.18.1 to confirm model is rated by HVI or AHAM.

<sup>3</sup> Air filtration requirements apply to the following three system types per §120.1(b)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

<sup>4</sup> A balanced ventilation system provides ventilation airflow to each dwelling-unit at a rate equal to or greater than the required minimum rate, but not more than twenty percent greater.

**K. TERMINAL BOX CONTROLS**

This table is used to demonstrate compliance with prescriptive zone control requirements in §140.4(d) & §170.2(c)4B.

| 01                                   | 02                                   | 03                       | 04                          | 05                                  | 06                  | 07                              | 08                        | 09                          | 10                                                           | 11                                                                | 12       |
|--------------------------------------|--------------------------------------|--------------------------|-----------------------------|-------------------------------------|---------------------|---------------------------------|---------------------------|-----------------------------|--------------------------------------------------------------|-------------------------------------------------------------------|----------|
| Zone/System/VAV Box Name or Item Tag | Zonal Control Strategy per §140.4(d) | Design                   |                             |                                     | Deadband Compliance |                                 |                           |                             | Reheated, Recooled, Mixed Air Compliance                     |                                                                   | Complies |
|                                      |                                      | Peak Primary Airflow CFM | Primary Air in Deadband CFM | Reheated Recooled Mixed Airflow CFM | Outside Air CFM     | 30% of Peak Primary Airflow CFM | Max Deadb and Airflow CFM | 50% of Peak Primary Airflow | 1 <sup>st</sup> Stage Modulates ≤95°F and Maintains DB Rate? | 2 <sup>nd</sup> Stage Modulates from DB Flow to Heating Max Flow? |          |
|                                      |                                      |                          |                             |                                     |                     |                                 |                           |                             |                                                              |                                                                   |          |



**L. DISTRIBUTION (DUCTWORK and PIPING)**

*This table is used to demonstrate compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.*

| Mandatory Pipe Insulation |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                               |                                   |                                                           |                                                                        |                                      |                                                 |                          |
|---------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------|--------------------------|
| 01                        | <input type="checkbox"/>   | Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed. |                                                               |                                   |                                                           |                                                                        |                                      |                                                 |                          |
| 02                        | 03                         | 04                                                                                                                                                                                                                                                                                                                                                                                                                                     | 05                                                            | 06                                | 07                                                        | 08                                                                     | 09                                   | 10                                              | 11                       |
| System Type               | Nominal Pipe Diameter (in) | Fluid Temperature Range (°F)                                                                                                                                                                                                                                                                                                                                                                                                           | Conductivity Range (Btu-in per hr per ft <sup>2</sup> per °F) | Insulation Mean Rating Temp. (°F) | Min. Insulation Thickness Required per Table 120.3-A (in) | Min. Insulation Thickness Required per §120.3(c)2 & §160.3(c)1dii (in) | Insulation Thickness per Design (in) | Exception to §120.3 & §160.3(c) (if applicable) | Serving Res or NR Space? |
|                           |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                               |                                   |                                                           |                                                                        |                                      |                                                 |                          |

**Duct Leakage Testing**

|                                                                           |  |                                                                                                                                                                                                                                                        |  |
|---------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| The answers to the questions below apply to the following duct system(s): |  | <b>NR/Common Use:</b> Duct leakage testing shall not exceed ____% per NA7.5.3 required for these systems?                                                                                                                                              |  |
|                                                                           |  | <b>Dwelling Units:</b> Total duct leakage of duct system shall not exceed 12% or duct leakage system to outside shall not exceed 6% per RA3.1.4 required for these systems?                                                                            |  |
|                                                                           |  | Duct leakage testing per CMC Section 603.10.1 required for these systems?                                                                                                                                                                              |  |
| 11                                                                        |  | The scope of the project includes only duct systems serving healthcare facilities.                                                                                                                                                                     |  |
| 12                                                                        |  | Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.                                                                                                                             |  |
| 13                                                                        |  | The space conditioning system serves less than 5,000 ft <sup>2</sup> of conditioned floor area.                                                                                                                                                        |  |
| 14                                                                        |  | The combined surface area of ducts located outdoors or in unconditioned spaces is more than 25% of the total surface area of the entire duct system:                                                                                                   |  |
| 15                                                                        |  | The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.                                                                                                                          |  |
| 16                                                                        |  | The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2. |  |
| 17                                                                        |  | All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A                                                                                                                                                              |  |
| 18                                                                        |  | All ductwork is an extension of an existing duct system                                                                                                                                                                                                |  |
| 19                                                                        |  | Ductwork serving individual dwelling unit                                                                                                                                                                                                              |  |
| 20                                                                        |  | < 25 ft of new or replacement space conditioning ducts installed                                                                                                                                                                                       |  |
| 21                                                                        |  | Duct Insulation R-Value                                                                                                                                                                                                                                |  |

**M. COOLING TOWERS**

*This table is used to demonstrate compliance with mandatory requirements in §110.2(e)2 for cooling towers with a rated capacity > 150 tons. This Table calculates the Maximum Achievable Cycles of Concentration using the Langelier Saturation Index (LSI) calculations per §110.2(e)2.*

|                           |                          |                                                                                                                                    |                     |                                            |              |                                                      |                                                      |                     |                       |                              |           |          |        |
|---------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------|--------------|------------------------------------------------------|------------------------------------------------------|---------------------|-----------------------|------------------------------|-----------|----------|--------|
| 01                        | <input type="checkbox"/> | Check the box if the project is showing calculations on the plans, or attaching the calculations instead of completing this Table. |                     |                                            |              |                                                      |                                                      |                     |                       |                              |           |          |        |
| 02                        | 03                       | 04                                                                                                                                 | 05                  | 06                                         | 07           | 08                                                   | 09                                                   | 10                  | 11                    | 12                           | 13        | 14       | 15     |
| Name<br>or<br>Item<br>Tag | Design Conditions        |                                                                                                                                    | Rated<br>Conditions | Maximum<br>Skin Temp<br>(°F)               | Conductivity | M-<br>Alkalinity<br>Excluding<br>Galvanized<br>Steel | M-<br>Alkalinity<br>Including<br>Galvanized<br>Steel | Calcium<br>Hardness | Magnesium<br>Hardness | Total<br>Dissolved<br>Solids | Chlorides | Sulfates | Silica |
|                           | Design<br>GPM            | Min Flow<br>GPM                                                                                                                    | GPM/HP              |                                            |              |                                                      |                                                      |                     |                       |                              |           |          |        |
|                           |                          |                                                                                                                                    |                     |                                            |              |                                                      |                                                      |                     |                       |                              |           |          |        |
| 16                        |                          |                                                                                                                                    |                     | 17                                         |              |                                                      |                                                      | 18                  |                       |                              |           |          |        |
| Target Tower Cycles       |                          |                                                                                                                                    |                     | Maximum Achievable Cycles of Concentration |              |                                                      |                                                      | Complies            |                       |                              |           |          |        |
|                           |                          |                                                                                                                                    |                     |                                            |              |                                                      |                                                      |                     |                       |                              |           |          |        |



**N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

*Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.*

| YES                   | NO                    | Form/Title                                                                | Field Inspector          |                          |
|-----------------------|-----------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|
|                       |                       |                                                                           | Pass                     | Fail                     |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-01-E - Must be submitted for all buildings.                      | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-20-H Duct Leakage Diagnostic Test                                | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-21-H Duct Location Verification                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-22-H Fan Efficacy                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-23-H Airflow Rate                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-24-H Building Envelope Air Leakage Worksheet                     | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-25 Refrigerant Charge Verification                               | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-26-H Rated Space Conditioning System Equipment Verification      | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-27-H Indoor Air Quality and Mechanical Ventilation               | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-28-H Return Duct Design and Air Filter Grille Device Sizing      | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-29-H Duct Surface Area Reduction; Buried Ducts Compliance Credit | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-32-H Local Mechanical Exhaust                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCI-MCH-33-H Variable Capacity Heat Pump Compliance Credit               | <input type="checkbox"/> | <input type="checkbox"/> |

**O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

*Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:*

<http://www.energy.ca.gov/title24/attcp/providers.html>.

| YES                   | NO                    | Form/Title                                                                                                                                                                                                                                                                                            | Systems To Be Field Verified | Field Inspector          |                          |
|-----------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------|--------------------------|
|                       |                       |                                                                                                                                                                                                                                                                                                       |                              | Pass                     | Fail                     |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units.<br><i>Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.</i>                                                                    |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-03-A Constant Volume Single Zone HVAC<br>NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".                                                                       |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-04 Air Distribution Duct Leakage                                                                                                                                                                                                                                                             |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-05-A Air Economizer, DOAS, HRV, & ERV Controls                                                                                                                                                                                                                                               |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO <sub>2</sub> ) concentration setpoints. |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-07-A Supply Fan Variable Flow Controls                                                                                                                                                                                                                                                       |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-08-A Valve Leakage Test                                                                                                                                                                                                                                                                      |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-09-A Supply Water Temperature Reset Controls                                                                                                                                                                                                                                                 |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-10-A Hydronic System Variable Flow Controls                                                                                                                                                                                                                                                  |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-11-A Automatic Demand Shed Controls                                                                                                                                                                                                                                                          |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-12-A FDD for Packaged Direct Expansion Units                                                                                                                                                                                                                                                 |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance                                                                                                                                                                                                                 |                              | <input type="checkbox"/> | <input type="checkbox"/> |



| YES                   | NO                    | Form/Title                                                                                                                                                                                                                                                                                                                                                                                                             | Systems To Be Field Verified | Field Inspector          |                          |
|-----------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------|--------------------------|
|                       |                       |                                                                                                                                                                                                                                                                                                                                                                                                                        |                              | Pass                     | Fail                     |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance<br><i>NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage DX AC Systems are included in the scope, permit applicant should move this form to "Yes".</i>                                                                                                                                                              |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance<br><i>NOTE: This form does not automatically move to "Yes". If Chilled Water Storage, Ice-on-Coil Internal Melt, Ice-on-Coil External Melt, Ice Harvester, Brine, Ice-Slurry, Eutectic Salt, Clathrate Hydrate Slurry (CHS), Cryogenic or Encapsulated (Ice Ball) Systems are included in the scope, permit applicant should move this form to "Yes".</i> |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-16-A Supply Air Temperature Reset Controls                                                                                                                                                                                                                                                                                                                                                                    |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-17-A Condenser Water Temperature Reset Controls                                                                                                                                                                                                                                                                                                                                                               |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-18 Energy Management Control Systems                                                                                                                                                                                                                                                                                                                                                                          |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-19 Occupancy Sensor Controls                                                                                                                                                                                                                                                                                                                                                                                  |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-20 Multi-Family Ventilation                                                                                                                                                                                                                                                                                                                                                                                   |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-21 Multi-Family Envelope Leakage                                                                                                                                                                                                                                                                                                                                                                              |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-22-A MF Duct Leakage                                                                                                                                                                                                                                                                                                                                                                                          |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-23-A MF HRV/ERV Verification                                                                                                                                                                                                                                                                                                                                                                                  |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | NRCA-MCH-24A-Cooling Tower Conductivity Controls                                                                                                                                                                                                                                                                                                                                                                       |                              | <input type="checkbox"/> | <input type="checkbox"/> |

**P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**

*Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be completed by an ECC Rater and provided to the building inspector during construction. The final documents must be created by an ECC Providers registry, but drafts can be found online.*

| YES                   | NO                    | Form/Title                                                                                                                  | Systems To Be Field Verified | Field Inspector          |                          |
|-----------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------|--------------------------|
|                       |                       |                                                                                                                             |                              | Pass                     | Fail                     |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-21 Duct Location Verification<br><i>NOTE: Must be completed by an ECC Rater</i>                                    |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-22-H Fan Efficacy<br><i>NOTE: Must be completed by an ECC Rater</i>                                                |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-23-H Airflow Rate<br><i>NOTE: Must be completed by an ECC Rater</i>                                                |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-24 Enclosure Air Leakage Worksheet<br><i>NOTE: Must be completed by an ECC Rater</i>                               |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-25 Refrigerant Charge Verification<br><i>NOTE: Must be completed by an ECC Rater</i>                               |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-26-H Rated Space Conditioning System Equipment Verification<br><i>NOTE: Must be completed by an ECC Rater</i>      |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-27 Indoor Air Quality and Mechanical Ventilation<br><i>NOTE: Must be completed by an ECC Rater</i>                 |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-28-H Return Duct Design and Air Filter Grille Device Sizing<br><i>NOTE: Must be completed by an ECC Rater</i>      |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-29-H Duct Surface Area Reduction; Buried Ducts Compliance Credit<br><i>NOTE: Must be completed by an ECC Rater</i> |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-32 Local Mechanical Exhaust<br><i>NOTE: Must be completed by an ECC Rater</i>                                      |                              | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="radio"/> | <input type="radio"/> | LMCV-MCH-33-H Variable Capacity Heat Pump Compliance Credit<br><i>NOTE: Must be completed by an ECC Rater</i>               |                              | <input type="checkbox"/> | <input type="checkbox"/> |

*In addition to the Certificates of Compliance, the Standards may also require Certificates of Verification to be submitted to the authority having jurisdiction.*



*This section of the compliance documentation serves as an acknowledgement of, and a declaration that Certificates of Verification are required to be submitted for compliance. The boxes must be checked for every Certificate of Verification that applies to the job.*

#### Q. MANDATORY MEASURES DOCUMENTATION LOCATION

*This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.*

| 01                                                                                                       |  | 02                                           |
|----------------------------------------------------------------------------------------------------------|--|----------------------------------------------|
| Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:                 |  | Plan sheet or construction document location |
|                                                                                                          |  |                                              |
| 03                                                                                                       |  | 04                                           |
| Mandatory Measure                                                                                        |  | Plan sheet or construction document location |
| Heating Equipment Efficiency per §110.1b, Title 20, and federal minimums                                 |  |                                              |
| Cooling Equipment Efficiency per §110.1, Title 20, and federal minimums                                  |  |                                              |
| Furnace Standby Loss Control per §110.2(d)                                                               |  |                                              |
| Duct Insulation per §120.4                                                                               |  |                                              |
| Heating Hot Water Equipment Efficiency per §110.1, Title 20, and federal minimums                        |  |                                              |
| Cooling Chilled and Condenser Water Equipment Efficiency per §110.1                                      |  |                                              |
| Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1                |  |                                              |
| Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3                      |  |                                              |
| Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4                                     |  |                                              |
| Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5                        |  |                                              |
| Pipe Insulation per §120.3(b)                                                                            |  |                                              |
| Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9 |  |                                              |
| Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b)                           |  |                                              |
| The air duct and plenum system is designed per §120.4(a)-(f)                                             |  |                                              |
| Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2               |  |                                              |
| HVAC hot water supply temperature shall be no greater than 130F per 120.2(l)                             |  |                                              |
| Ventilation accessibility requirements of 160.2(b)2xi                                                    |  |                                              |

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

1. I certify that this Certificate of Compliance documentation is accurate and complete.

|                            |                                                           |
|----------------------------|-----------------------------------------------------------|
| Documentation Author Name: | Documentation Author Signature:                           |
| Company:                   | Signature Date:                                           |
| Address:                   | CEA/AEA/ECC Certification Identification (if applicable): |
| City/State/Zip:            | Phone:                                                    |

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

|                            |                                 |
|----------------------------|---------------------------------|
| Responsible Designer Name: | Responsible Designer Signature: |
| Company :                  | Date Signed:                    |
| Responsible Person Scope:  |                                 |
| Address:                   | License:                        |
| City/State/Zip:            | Phone:                          |

|                                               |                |
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#### A. General Information

1. Enter the City the project is located in.
2. Climate Zone: Select from dropdown.
3. Select the applicable Occupancy Types within the project.
4. Enter the total conditioned floor area of the project.
5. Enter the total unconditioned floor area of the project.
6. Enter the total number of habitable above grade stories of the project.

#### B. Project Scope

1. Select whether the project includes heating and/or cooling air systems and/or mechanical controls.
2. Select the wet system components included in your project.
3. Select the dry system components included in your project.

#### C. Compliance Results

1. Results in this table are automatically calculated from data input and calculations in Tables F through M.

#### D. Exceptional Conditions

1. This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

#### E. Additional Remarks

1. Enter any notes or comments for the AHJ.

#### F. HVAC System Summary (Dry and Wet Systems)

##### Space Conditioning System Information

1. Enter the Name or Item Tag.
2. Enter the quantity of the system.
3. Zone(s) that the system is serving: Select from dropdown.
4. Status of the system: Select from dropdown.
5. Space type that the system is serving: Select from dropdown.
6. Is the system utilizing recovered heat?
7. Distribution system type: Select from dropdown.

##### Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces, unit heaters and DOAS systems)

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1. This field is filled out automatically.
2. Equipment category of the system: Select from dropdown.
3. Equipment type of the system: Select from dropdown.
4. Is the equipment the smallest size available?: Select from dropdown
5. Enter the heating output per design of the system.
6. Enter the heating output rated capacity of the system.
7. Enter the supplemental heating output of the system
8. Enter the cooling sensible output per design of the system.
9. Enter the cooling output rated capacity of the system.
10. Enter the total heating load.
11. Enter the total sensible cooling load.

**Dry System Equipment Efficiency (other than package terminal air conditioners (PTAC) and package terminal heat pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)**

1. This field is field out automatically.
2. Size category of the system: Select from dropdown.
3. Rating condition of the system: Select from dropdown.
4. Heating efficiency unit of the system: Select from dropdown.
5. This field is filled out automatically.
6. Enter the heating design efficiency of the system.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Enter the cooling design efficiency of the system.

**Dry System Equipment Efficiency (Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP) only)**

1. This field is field out automatically.
2. This field is filled out automatically
3. This field is filled out automatically
4. Enter the heating mode design COP of the system.
5. This field is filled out automatically.
6. This field is filled out automatically
7. Enter the cooling mode design EER.

**Boiler Efficiency and Controls**

1. Enter the Name or Item Tag.



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2. Equipment type: Select from dropdown.
3. Enter the quantity of identical boilers.
4. Enter the rated input capacity.
5. Enter the rated efficiency.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Select the isolation valve control exception or indicate that it has been included in the design: Select from dropdown.
9. Select the temperature reset control exception or indicate that it has been included in the design: Select from dropdown.
10. High capacity boiler exceptions: Select from dropdown.

#### **Chiller Efficiency and Controls**

1. Enter the name or item tag of the chiller.
2. Select the equipment type: Select from dropdown.
3. Enter the quantity of identical chillers.
4. Size category in tons: Select from dropdown.
5. Chiller efficiency Path B exception: Select from dropdown.
6. Enter the rated efficiencies
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Select the isolation valve control exception or indicate that it has been included in the design: Select from dropdown.
10. Select the temperature reset control exception or indicate that it has been included in the design: Select from dropdown.

#### **Direct-Expansion Dedicated Outdoor Air System (DX-DOAS) EFFICIENCY**

1. This field is filled out automatically.
2. equipment type: Select from dropdown.
3. Enter the quantity of identical DX-DOAS systems.
4. Does the system have energy recovery?: Select from dropdown.
5. Rating condition of the system: Select from dropdown.
6. Enter the rated efficiencies.
7. This field is filled out automatically.
8. This field is filled out automatically.

#### **Dual Fuel Heat Pump**

1. This field is filled out automatically.
2. Equipment category: Select from dropdown.

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3. Equipment type: Select from dropdown.
4. Size category: Select from dropdown.
5. Select the rating condition: Select from dropdown.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Enter the design heating efficiency.
9. This field is filled out automatically.
10. This field is filled out automatically.
11. Enter the design cooling efficiency.

**Heat Rejection Equipment (Cooling Towers, Condensers, Waterside Economizers) Efficiency and Controls.**

1. Enter the name or item tag of the equipment.
2. Equipment type: Select from dropdown.
3. Enter the quantity of identical boilers.
4. Rated input capacity: Select from dropdown.
5. Enter the rated efficiency.
6. This field is filled out automatically.
7. Enter Performance Unit.
8. Fan Speed Control: Select from dropdown.
9. Tower Flow Turndown: Select from dropdown.
10. Fan Control in Multiple Cell Equipment: Select from dropdown.
11. Economizer Controls: Select from dropdown.
12. Condenser Water Temp Reset Controls: Select from dropdown.

**Electric Resistance Heating**

1. Enter the name or item tag of the electric resistance heating system.
2. Equipment description: Select from dropdown.
3. Enter the output capacity.
4. Equipment exception: Select from dropdown.

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## G. Pumps

1. Enter the name or item tag of the pump.
2. Select the equipment type: Select from dropdown.
3. Enter the quantity of identical pumps.
4. Enter the horsepower.
5. Select the exception of the variable flow control or indicate it has been included in the design: Select from dropdown.
6. Select the exception of the heat pump isolation controls or indicate it has been included in the design: Select from dropdown.
7. Select the exception for variable speed drive or indicate it has been included in the design: Select from dropdown.
8. This field is filled out automatically.

## H. Fan Systems & Air Economizers

- Enter the system name.
  - Enter the quantity of identical systems.
  - Select the fan system status: Select from dropdown.
  - Select the system zoning: Select from dropdown.
  - Select what types of spaces the system is serving: Select from dropdown.
  - Enter the fan system airflow.
  - Enter the site elevation.
  - Select the type of economizer or applicable exception: Select from dropdown.
1. Enter the fan name or item tag.
  2. Fan type: Select from dropdown.
  3. Enter the quantity of identical systems.
  4. Select the components included in the system: Select from dropdown.
  5. Enter the airflow through the selected component.
  6. Enter the inches of water gauge in w.g.
  7. This field is filled out automatically.
  8. This field is filled out automatically.
  9. Select the design electrical input power method: Select from dropdown.
  10. Select the motor nameplate horsepower: Select from dropdown.
  11. This field is filled out automatically.

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### **Dwelling Unit Fan Efficacy & Energy/Heat Recovery**

1. This field is filled out automatically.
2. This field is filled out automatically.
3. This field is filled out automatically.
4. Select the system type: Select from dropdown.
5. Enter the system airflow in CFM.
6. Enter the design power in kW.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Select the ERV/HRV exception or indicate is has been included in the design: Select from dropdown.
10. Enter the design sensible recovery/effectiveness.
11. This field is filled out automatically.
12. This field is filled out automatically.

### **Exhaust Air Heat Recovery**

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Hours of operation per year: Select from dropdown.
4. Enter the design supply airflow rate in CFM.
5. Enter the outdoor airflow in CFM.
6. This field is filled out automatically.
7. Select the exemption to exhaust air heat recovery requirements or indicate is has been included in the design: Select from dropdown.
8. This field is filled out automatically.
9. Select the type of heat recovery rating: Select from dropdown.
10. This field is filled out automatically.
11. Select the type of energy recovery bypass control: Select from dropdown.

### **Dedicated Outdoor Air System (DOAS)**

1. Enter the name or item tag of the DOAS system.
2. Enter the quantity of identical DOAS systems.
3. Is the outdoor air delivered directly to the space? : Select from dropdown
4. Select the DOAS fan control: Select from dropdown.
5. Select the multizone DOAS cooling heat recovery controls: Select from dropdown.
6. Is the DOAS serving multifamily common use space? : Select from dropdown

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### **Fan Energy Index (FEI)**

1. The field is filled out automatically.
2. Select the FEI exception that applies: Select from dropdown.
3. Enter the fan energy index.

### **I. System Controls**

1. Enter the system name.
2. Select the system zoning: Select from dropdown.
3. Select the conditioned floor area being served: Select from dropdown.
4. Select the type of thermostats: Select from dropdown.
5. Select the type of shut-off controls: Select from dropdown.
6. Select the type of isolation zone controls: Select from dropdown.
7. Select the type of demand response controls: Select from dropdown.
8. Select the type of supply air temperature reset controls: Select from dropdown.
9. Select the window interlock exceptions or indicate they have been included in the design: Select from dropdown.
10. Select the direct digital control exceptions or indicate they have been included in the design: Select from dropdown.

### **J. Ventilation And Indoor Air Quality**

1. Check the box to confirm that the ventilation calculations are included in the plans or as part of a separate document.
2. Check the box to confirm that the project includes NR, Hotel/Motel or multifamily common use space. Check the box to confirm that the project includes new or altered multifamily dwelling units.
3. Check the box to confirm that the project is using natural ventilation to meet required ventilation rates.
4. Enter the system name.
5. Enter the system design outside airflow in CFM.
6. Enter the system design transfer air in CFM.
7. Select the air filtration device: Select from dropdown.
8. Enter the space name or item tag.
9. Select the occupancy type: Select from dropdown.
10. Enter the conditioned floor area in square feet.
11. Enter the number of showerheads or toilets.
12. Enter the number of designed occupants for the space.
13. This field is filled out automatically.

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14. This field is filled out automatically.
15. Enter the provided exhaust ventilation airflow in CFM.
16. Select the demand control ventilation and occupant sensor controls: Select from dropdowns.
17. This field is filled out automatically.
18. This field is filled out automatically.

### **Multifamily Dwelling Unit Ventilation Systems**

- Check the box to confirm that the system is using continuous ventilation to meet the ventilation requirements.
19. Enter the space name or item tag.
  20. Enter the conditioned floor area in square feet.
  21. Enter the number of bedrooms.
  22. Enter the number of dwelling units.
  23. This field is filled out automatically.
  24. Enter the supply airflow in CFM.
  25. Enter the exhaust airflow in CFM.
  26. Check the boxes with the applicable types of local exhaust.
  27. Has air filtration been included?: Select from dropdown.

### **K. Terminal Box Controls**

1. Enter the zone/system/VAV box name or item tag
2. Select the zonal control strategy: Select from dropdown.
3. Enter the peak primary airflow in CFM.
4. Enter the primary airflow in the deadband in CFM.
5. Enter the reheated, recooled, or mixed airflow in CFM.
6. Enter the outside airflow in CFM.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. This field is filled out automatically.
10. Does the 1<sup>st</sup> stage modules and maintain the DB rate?
11. Does the second stage modulate from DV flow to heating max airflow?
12. This field is filled out automatically.

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#### **L. Distribution (Ductwork and Piping)**

1. Check the box to confirm that the insulation is protected from damage including damage due to sunlight, moisture, equipment maintenance and wind.
2. Select the system type: Select from dropdown.
3. Select the nominal pipe diameter in inches: Select from dropdown.
4. Select the fluid temperate range in Fahrenheit: Select from dropdown.
5. Select the conductivity rage in BTU-inch per hour per square foot per degree Fahrenheit: Select from dropdown.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Enter the min insulation thickness required.
9. Enter the insulation thickness per design.
10. Select the exception for pipe insulation requirements or indicate the requirements apply: Select from dropdown.
11. Is the distribution system serving residential or nonresidential space? : Select from dropdown.

#### **Duct Leakage Testing**

12. Does the duct system serve a licensed healthcare facility?: Select from dropdown.
13. Does the duct system provided conditioned air to an occupiable space for a constant volume single zone space conditioning system?: Select from dropdown.
14. Does the space conditioned system serve less than 5,000 square feet of conditioned floor area?: Select from dropdown.
15. Is 25% or more of the total surface area of the combined duct system located outdoors or unconditioned spaces?: Select from dropdown.
16. Does the scope of the project include extending and existing duct system which is constructed, insulated or sealed with asbestos?: Select from dropdown.
17. Does the scope of the project include an existing duct system that is documented to have been previously sealed as confirm through field verification and diagnostic testing in accordance with Reference Appendix NA2?: Select from dropdown.
18. Are all ductwork and plenums with pressure class ratings sealed to Seal Class A?: Select from dropdown.
19. Is all the ductwork an extension of an existing duct system?: Select from dropdown.
20. Is the ductwork serving and individual dwelling unit?: Select from dropdown.
21. Is less than 25 feet of new or replacement ducting installed?: Select from dropdown.

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### **M. Cooling Towers**

1. Check the box to confirm that the project is showing cooling tower calculations on the plans or attaching calculations instead of completing the NRCC cooling tower table.
2. Enter the name or item tag of the cooling tower.
3. Enter the design gallons per minute.
4. Enter the min flow in gallons per minute.
5. Enter the rated condition gallons per minute per horsepower.
6. Enter the maximum skin temperature in Degrees Fahrenheit.
7. Enter the conductivity.
8. Enter the M-alkalinity.
9. Enter the calcium hardness.
10. Enter the magnesium hardness.
11. Enter the target tower cycles.
12. This field is filled out automatically.
13. This field is filled out automatically.
14. This field is filled out automatically.
15. This field is filled out automatically.

### **N. Declaration of Required Certificates of Installation**

1. Selections have been automatically made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

### **O. Declaration of Required Certificates of Acceptance**

1. Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

### **P. Declaration of Required Certificates of Verification**

1. Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

### **Q. Mandatory Measures**

1. Are mandatory measures documented through the mandatory measures note block?: Select from dropdown.
2. Enter the plan sheet or construction document location of the mandatory measure documentation.
3. List of mandatory measures.  
-Enter the plan sheet or construction document location of the heating equipment efficiency per §110.1.



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- Enter the plan sheet or construction document location of the cooling equipment efficiency per §110.1.
  - Enter the plan sheet or construction document location of the furnace standby loss per §110.2(d).
  - Enter the plan sheet or construction document location of the duct insulation per §120.4.----Enter the plan sheet or construction document location of the heating hot water equipment efficiency per §110.1
  - Enter the plan sheet or construction document location of the cooling chilled and condenser water equipment efficiency per §110.1.
  - Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1.
  - Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3.
  - Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4.
  - Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5.
  - Enter the plan sheet or construction document location of the Pipe Insulation per §120.3(b).
  - Enter the plan sheet or construction document location of the Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9.
  - Enter the plan sheet or construction document location of the Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b).
  - Enter the plan sheet or construction document location of the air duct and plenum system per §120.4(a)-(f).
  - Enter the plan sheet or construction document location of the Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
4. Plan sheet or construction document location.

#### Documentation Declaration Statements

1. The person who prepared the LMCC will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature.
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields for their name, company (if applicable), address, phone number, license number (if applicable), date and signature.