



## Commercial—Additional Energy Efficiency Supplemental Form: Mechanical Permit

Complete and submit this supplemental form with **your Mechanical Permit application** for verification of Energy Compliance Credit.

**Permit Application Information**

Provide the full address of property and the name of the Owner/Applicant.

**A**

Property Address: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_

Applicant Name: \_\_\_\_\_

**More Efficient HVAC Equipment Performance Credit**

Complete this section to obtain credit for more efficient HVAC equipment performance in accordance with Section C406.2.

\*Note that any installed variable refrigerant flow systems not listed shall be limited to 10% of the total building system capacity for heating and cooling equipment in the evaluation of efficiency credit eligibility.

\*\*Note that any HVAC Equipment not listed shall be limited to 10% of the total building system capacity for heating equipment in the evaluation of efficiency credit eligibility.

\*\*\*All HVAC equipment installations shall correspond to specified equipment selection under the HVAC equipment analysis.

**B**

**More Efficient HVAC Equipment Performance**

Please select one or more of the following:

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | <b>More Efficient Heating Equipment Performance</b> [Complete Part 1 & Part 2 of Section B] |
| <input type="checkbox"/> | <b>More Efficient Cooling Equipment Performance</b> [Complete Part 1 & Part 3 of Section B] |

**Part 1: Variable refrigerant Flow Systems**

Where Efficient HVAC Equipment credits are selected, the following shall be verified for Variable Refrigerant Flow System Equipment prior to final inspection:

|  |                                 |                                 |                                 |
|--|---------------------------------|---------------------------------|---------------------------------|
| Variable refrigerant flow systems will be equipped with economizer(s) and fault detection and diagnostics systems in accordance with IECC, Section C403.5.5. | Yes<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |                                 |
| Variable refrigerant flow systems are listed in the energy efficiency provisions of ASHRAE 90.1.   | Yes<br><input type="checkbox"/> | No*<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |

**Part 2: Heating Efficiency Improvement Credits**

Please ensure the following is provided with the Mechanical Permit application:

- A **ComCheck Analysis with Mechanical Compliance Certificate** (or equivalent calculation analysis) has been submitted with the Mechanical Permit application, which includes **equipment manufacturer's specifications** and corresponds to the submitted **equipment schedule** and **mechanical plans** in the permit application. [Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.]

Where Heating Efficiency Improvement credits are selected, the following shall be verified for the system design:

|   |                                 |                                  |                                 |
|---|---------------------------------|----------------------------------|---------------------------------|
| HVAC Heating Equipment are listed in the energy efficiency provisions of the 2021 IECC, Tables C403.3.2(1) through C403.3.2(9). | Yes<br><input type="checkbox"/> | No**<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |
| Heating Equipment installations are listed in the energy efficiency provisions of ASHRAE 90.1.                                  | Yes<br><input type="checkbox"/> | No**<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |

Please select only one (1) of the following based on efficiency analysis\*\*\*:

- Five-Percent (5%) Heating Efficiency Improvement:** The HVAC equipment analysis and equipment selection provided demonstrates a minimum Five-Percent (5%) Heating Efficiency Improvement in accordance with Section C406.2.1.
- Ten-Percent (10%) Heating Efficiency Improvement:** The HVAC equipment analysis and equipment selection provided demonstrates a minimum Ten-Percent (10%) Heating Efficiency Improvement in accordance with Section C406.2.4.

Continue to next page



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**More Efficient HVAC Equipment Performance Credit**

Complete this section to obtain credit for more efficient HVAC equipment performance in accordance with Section C406.2.

Note: Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.

\*Note that any installed variable refrigerant flow systems not listed in the energy efficiency provisions of ASHRAE 90.1 shall be limited to 10% of the total building system capacity for cooling equipment.

\*\*All HVAC equipment installations must correspond to specified equipment selection under the HVAC equipment analysis.

**B**

**Part 3: Cooling Efficiency Improvement Credits**

Please ensure the following is provided with the Mechanical Permit application:

|  |                          |
|--|--------------------------|
| A <b>ComCheck Analysis with Mechanical Compliance Certificate</b> (or equivalent calculation analysis) has been submitted and includes <b>equipment manufacturer's specifications</b> and corresponds to the completed <b>equipment schedule</b> and <b>mechanical plans</b> in the permit application submission. | <input type="checkbox"/> |
|--|--------------------------|

Where cooling efficiency improvement credits are selected, the following shall be verified for the system design:

|   |                                 |                                 |                                 |
|---|---------------------------------|---------------------------------|---------------------------------|
| HVAC Cooling Equipment are listed in the energy efficiency provisions of the 2021 IECC, Tables C403.3.2(1) through C403.3.2(9). | Yes<br><input type="checkbox"/> | No*<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |
| Cooling Equipment installations are listed in the energy efficiency provisions of ASHRAE 90.1.                                  | Yes<br><input type="checkbox"/> | No*<br><input type="checkbox"/> | N/A<br><input type="checkbox"/> |

Please select only one (1) of the following based on efficiency analysis\*\*:

|  |                          |
|--|--------------------------|
| <b>Five-Percent (5%) Cooling Efficiency Improvement:</b> The HVAC equipment analysis and equipment selection provided demonstrates a minimum Five-Percent (5%) Cooling Efficiency Improvement in accordance with Section C406.2.2.           | <input type="checkbox"/> |
| <b>Ten-Percent (10%) Cooling Efficiency Improvement:</b> The HVAC equipment analysis and equipment selection provided demonstrates a minimum Ten-Percent (10%) Cooling Efficiency Improvement in accordance with Section C406.2.4.           | <input type="checkbox"/> |
| <b>More than Ten-Percent (10%) Cooling Efficiency Improvement:</b> The HVAC equipment analysis and equipment selection provided demonstrates More than Ten-Percent (10%) Cooling Efficiency Improvement in accordance with Section C406.2.5. | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>A completed <b>Credit Eligibility Calculation Form (P_055_F)</b> to show calculations for additional credit eligibility must be submitted.</li> </ul>   | <input type="checkbox"/> |

**Efficient Kitchen Equipment Credit**

Complete this section to obtain credit for efficient kitchen equipment in accordance with Section C406.12.

Note: Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.

**C**

**Efficient Kitchen Equipment**

Please ensure the following are provided with the Mechanical Permit application:

|   |                          |
|---|--------------------------|
| <b>Site Plan</b> is provided with location and dimensions of the full kitchen area. Location of each kitchen equipment is identified on plans.  | <input type="checkbox"/> |
| <b>Kitchen Equipment schedule</b> is provided to ensure minimum efficiency requirements have been met for the following equipment types [select at least one (1) applicable equipment type]:  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Commercial Fryers, to include fryer type, cooking energy efficiency, idle energy rate, and test procedure. Minimum efficiency performance to comply with IECC 2021, Table C406.12(1)).</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Commercial Steam cookers, to include fuel type, pan capacities, cooking energy efficiency, idle energy rate, and test procedure. Minimum efficiency performance to comply with IECC 2021, Table C406.12(2)).</li> </ul>                                      | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Commercial Dishwashers for both high temperature and low temperature settings, to include machine type, idle energy rate, water consumption rate, and test procedure. Minimum efficiency performance to comply with IECC 2021, Table C406.12(4)).</li> </ul> | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Commercial Ovens, to include fuel type, oven classification, cooking energy efficiency, idle energy rate, and test procedure. Minimum efficiency performance to comply with IECC 2021, Table C406.12(4)).</li> </ul>   | <input type="checkbox"/> |
| A <b>ComCheck Analysis Report</b> with additional credit eligibility results submitted for this credit package selection.   | <input type="checkbox"/> |
| All proposed kitchen equipment selection and installation maintain the minimum efficiency performance requirements in accordance with IECC 2021, Section C406.12.   | <input type="checkbox"/> |



**Dedicated Outdoor Air Credit**

Complete this section to obtain credit for dedicated outdoor air in accordance with Section C406.6.

\* Examples of energy recovery devices can include:

- Fan Coils
- Radiant Systems,
- Variable air Volume Direct Exchange
- VAV Chilled Water Energy Recovery Wheel
- Variable Fan Drives
- Direct Evaporative Cooling
- Modulating Furnace DCV

**D**

**Dedicated Outdoor Air**

Please ensure the following Ventilation System Design meet the applicable requirements:

|  |                          |
|--|--------------------------|
| Building Systems are proposed to be installed with one (1) of the following equipment & systems  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Boiler Turndown [<i>for Systems with Design Inputs &gt; 1,000,000 Btu/hr</i>] (C403.3.4)</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Hydronic System Controls [<i>for systems heating fluids that have been previously mechanically cooled, or cooling of fluids that have been previously mechanically heated</i>] (C403.4.3)</li> </ul>                                  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Hydronic System Controls [<i>for Systems Comprised of Multiple-Packaged Boilers Designed to Deliver Conditioned Water or Steam into a Common Distribution System</i>] (C403.4.3)</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Hydronic System Controls [<i>for Systems Composed of a single boiler greater than 500,000 Btu/hr input design</i>] (C403.4.3)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Part-Load Controls [<i>for Systems with Design Output Capacity <math>\geq 300,000</math> Btu/hr</i>] (C403.4.4)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Pump Isolation [<i>for Chilled Water Plants with more than one (1) Chiller, OR for Boiler Systems with more than one (1) Boiler</i>] (C403.4.5)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• AC Systems serving Multiple-Zone (C403.6)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Fractional HP Fan Motors [<i>operation between 1/12 hp (0.062 kW) and 1 hp (0.746 kW)</i>] (C403.8.4)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Fan Control [<i>including Fan-Powered Condensers Serving Refrigeration Systems</i>] (C403.8.6).</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Fan Airflow Control [<i>for Direct Exchange Cooling or Chilled Water &amp; Evaporative Cooling Systems</i>] (C403.8.6.1)</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Heat Rejection—Fan Speed Control [<i>for Fan Systems Powered by an Individual Motor, or an Array of Motors with connected power totaling 5 hp or more</i>] (C403.10.1)</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Multiple-Cell Heat Rejection Equipment [<i>with variable speed fan drives installed</i>] (C403.10.2)</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Centrifugal Fan Open-Circuit Cooling Towers [<i>with combined rated capacity of 1,100 gpm or greater</i>] (C403.10.3)</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Open-circuit cooling towers [<i>used on Water-Cooled Chiller Systems with Multiple- or Variable-Speed Condenser Water Pumps</i>] (C403.10.4)</li> </ul>   | <input type="checkbox"/> |
| Ventilation System Design Analysis Report documentation has been provided to demonstrate:  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Minimum 100% of the Outdoor Air Supply Rate is provided in accordance with 2021 IMC, Table 403.3.1.1.</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>• Energy Recovery devices have been designed to be capable of total energy recovery in the ventilation system, with all energy recovery equipment identified in the mechanical equipment schedule and mechanical drawings. *</li> </ul> | <input type="checkbox"/> |
| HVAC System has been designed with supply-air temperature controls that automatically reset the supply-air temperature in response to representative building loads or to outdoor air temperatures.  | <input type="checkbox"/> |
| HVAC controls have been designed to reset the supply-air temperature not less than 25 percent of the difference between the design supply-air temperature and the design room-air temperature.   | <input type="checkbox"/> |



**Reduced Energy Use in Service Water Heating Credit**

Complete this section to obtain credit for reduced energy use in service water heating in accordance with Sections C406.7.2, through C406.7.4.

E

**Reduced Energy Use in Service Water Heating**

Please select one (1) of the following:

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | <b>Efficient Fossil Fuel Water Heater, <u>OR</u></b> [Complete Part 1 & Part 2 of Section E] |
| <input type="checkbox"/> | <b>Heat Pump Water Heater, <u>OR</u></b> [Complete Part 1 & Part 3 of Section E]             |
| <input type="checkbox"/> | <b>Recovered or Renewable Water Heating</b> [Complete Part 1 & Part 4 of Section E.]         |

**Part 1: Qualified Building Types/Use Groups**

Where credit is selected, please identify the eligible use group to qualify for this credit. *Note that the additional energy efficiency credit shall be pro-rated by conditioned floor area of the portion of the building comprised of the following use groups:*

|   |  |
|---|--|
| <input type="checkbox"/> Group R-1: Boarding Houses, Hotels or Motels   | <input type="checkbox"/> Group F: Laundries  |
| <input type="checkbox"/> Group A-3: Health Club and Spas  | <input type="checkbox"/> Group R-2   |
| <input type="checkbox"/> Group I-2: Hospitals, Psychiatric Hospitals and Nursing Homes                            | <input type="checkbox"/> Group E: Schools with Full-Service Kitchens or Locker Rooms with Showers  |
| <input type="checkbox"/> Group A-2: Restaurants and Banquet Halls, or Buildings containing Food Preparation Areas | <input type="checkbox"/> Buildings Showing a Service Hot Water Load of 10% or More of Total Building Energy Loads, as shown with a Total Building Performance energy analysis as described in Section C407 |

**Part 2: Efficient Fossil Fuel Water Heater**

Where credit is selected, combined input-capacity weighted average equipment rating ( $E_{avg}$ ) must be greater than 95%  $E_t$  or 0.95 EF.

Please review and verify the following compliance requirements:

|  |                          |
|--|--------------------------|
| <b>Equipment specifications</b> have been provided with the mechanical permit application and shall be made available to field inspection staff prior to final inspection.   | <input type="checkbox"/> |
| Select one of the following methods of compliance:   |                          |
| <ul style="list-style-type: none"> <li>All fossil fuel water heater equipment proposed will have an efficiency rating greater than 95% <math>E_t</math> or 0.95 EF.</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Where fossil fuel water heater equipment installations propose efficiency rating less than or equal to 95% <math>E_t</math> or 0.95 EF, the <b>combined input-capacity weight average equipment rating analysis</b> has been provided with the permit submission to demonstrate minimum efficiency requirements for fossil fuel water heating equipment of at least 95% <math>E_t</math> or 0.95 EF. [Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.]</li> </ul> | <input type="checkbox"/> |

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**Reduced Energy Use in Service Water Heating Credit**

Complete this section to obtain credit for reduced energy use in service water heating in accordance with Sections C406.7.2, through C406.7.4.

E

**Part 3: Heat Pump Water Heater**

Where credit is selected, combined input-capacity weighted average equipment rating (EF<sub>avg</sub>) of all electric resistance water heaters must be greater than EF of 3.0.

Equipment specifications shall be made available to field inspection staff prior to final inspection.

Please review and verify the following compliance requirements:

|  |                          |
|--|--------------------------|
| <b>Equipment specifications</b> have been provided with the mechanical permit application and shall be made available to field inspection staff prior to final inspection.   | <input type="checkbox"/> |
| Air-source heat pump water heaters design and installation does NOT draw conditioned air from within the building, except for exhaust air that would otherwise be exhausted to the exterior.   | <input type="checkbox"/> |
| Select one of the following methods of compliance:   |                          |
| <ul style="list-style-type: none"> <li>All electric resistance water heater equipment proposed will have an efficiency rating greater than 3.0 EF.</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Where fossil fuel water heater equipment installations propose efficiency rating less than or equal to 3.0 EF, a <b>combined input-capacity weight average equipment rating analysis</b> has been provided with the permit submission to demonstrate minimum efficiency rating requirements for electric resistance water heating equipment of at least 3.0 EF. <i>[Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.]</i></li> </ul> | <input type="checkbox"/> |

**Part 4: Recovered or Renewable Water Heating Credit**

Where credit is selected, the following shall be verified to qualify for Recovered or Renewable Water Heating Credits:

|  |                          |
|--|--------------------------|
| <b>Equipment Specification</b> and <b>Mechanical Schedule</b> Documentation is provided with the Mechanical Permit application, to include water heating system input ratings and sizing. <i>[Any field installation deviations from equipment specifications identified in the permit submission will require permit amendments.]</i> | <input type="checkbox"/> |
| <b>Engineering Design Analysis</b> for Recovered or Renewable Water Heating Systems, based on the Building's annual hot water requirements and selected equipment identified on the mechanical equipment schedule, is provided with the Mechanical Permit application.   | <input type="checkbox"/> |
| All recovered or renewable water heating equipment systems identified are not being used to qualify for energy efficiency credits for On-Site Renewable Energy credits per Section C406.5.   | <input type="checkbox"/> |
| Identify if the recovered or renewable water heating equipment is required to comply with condenser heat recovery installation per Section C403.10.5 based on all the following conditions:  |                          |
| <ul style="list-style-type: none"> <li>Service Water heating systems required to operate 24 hours a day</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Service Water heating systems sized with a water-cooled system heat rejection capacity that exceeds 6,000,000 Btu/hr</li> </ul>   | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Service Water Heating load exceeds 1,000,000 Btu/hr</li> </ul>  | <input type="checkbox"/> |
| Select one (1) of the following methods of compliance:   |                          |
| <ul style="list-style-type: none"> <li>Where condenser heat recovery is required per C403.10.5, the design capacity of the recovered or renewable service water heating system provides a minimum of 70% of the building's annual hot water requirements, which is supported by the submitted engineering design analysis.</li> </ul>  | <input type="checkbox"/> |
| <ul style="list-style-type: none"> <li>Where condenser heat recovery is NOT required per C403.10.5, the design capacity of the recovered or renewable service water heating system provides a minimum of 30% of the building's annual hot water requirements, which is supported by the submitted</li> </ul>                           | <input type="checkbox"/> |
| Where condenser heat recovery is NOT required per C403.10.5, the design capacity of the recovered or renewable service water heating system provides a minimum of 30% of the building's annual hot water requirements, which is supported by the submitted engineering design analysis.  | <input type="checkbox"/> |

**Declaration & Signature**

I hereby certify that the information contained herein are true and correct to the best of my knowledge and belief.

Design Professional Name (Print): \_\_\_\_\_ Phone Number: \_\_\_\_\_

Design Professional's Signature: \_\_\_\_\_ Date: \_\_\_\_\_