

# Compliance Forms— Performance Rating Method

The following pages describe information that must be submitted to the rating authority when documenting compliance with energy code or above code performance following the Performance Rating Method of ASHRAE/IES Standard 90.1 (Appendix G). An electronic version is available for download from ASHRAE's website.

The documentation must meet requirements in Section G1.3.2 and make clear to the rating authority or building official what the building characteristics are and how the rating method has been applied.

## Contact Information

This section records building address and the contact information of permit applicant, design professionals and energy modeler.

## General Project Information

The section includes the following:

- a. Title and date for the design document package (drawings and specifications) that the proposed design model is based on.
- b. Whether submittal is for documenting minimum code compliance or above-code performance
- a. The version of the simulation program and the link to the website that contains the ASHRAE Standard 140 results for the version used in accordance with Section G2.2.4.
- b. Weather station used in the simulation and type of the weather file (e.g. TMY2, TMY3, etc.)
- c. Project climate zone
- d. Description of building areas and systems excluded from energy model, if any, as allowed by Table G3.1 #2.
- e. Description of yet to be designed systems and components, if any (Table G3.1 Proposed Building Performance column #1(c)).

## Table 1 Building Area Summary

This section reports the different building uses included in the building as required in G1.3.2 b. The following must be provided for each building area type:

- a. Number of above and below grade floors
- b. Floor area broken out by space conditioning category as defined in Section 3 including conditioned, semi-heated, unconditioned and un-enclosed spaces.
- c. For each space conditioning category, new construction versus alteration floor area must be reported.

In addition, the Building Performance Factor (BPF) for each building use for the project climate zone from Table 4.2.1.1 is entered. The total area area-weighted BPF is calculated here, and will be used later to determine project compliance.

## Table 2 Energy Sources

This section lists all purchased energy sources used in the proposed design such as electricity, gas, district steam and chilled water (G1.3.2 m). For each energy source, the energy consumption units (e.g. kWh, MMBtu), energy demand units (e.g. kW, Btu/hr) are provided and utility rate structure used in the simulation is described, including but not limited to energy and demand charges, time of use charges and block rates. For example, description of electricity rate structure may include off peak \$/kWh and \$/kW charges, the corresponding peak and off-peak time intervals, and variation in rates by month and day of the week. The source of utility rates must be included for each energy source (G2.4.2).

**Table 3 Advisory Messages**

This section reports information from the simulation runs that is helpful in identifying modeling problems or special situations (G1.3.2 n). It also includes the number of hours when heating and cooling loads were not met, to allow verifying compliance with requirements in G3.1.2.3

**Description of Proposed and Baseline Design Models**

This section includes the detailed information about systems and components in the proposed design model, the corresponding mandatory and prescriptive requirements, and the components in the baseline design model.

Sub-sections are required for building envelope, HVAC, service water heating, power, lighting and other equipment. The level of detail provided for each system and component must be aligned with that in the compliance forms for Sections 5 – 10.

In addition, there will be a sub-section describing any process equipment included in the simulation and a sub-section for any other special systems such as combined heat and power.

The details provided in each subsection must include the following:

- a. A list of the *energy*-related features that are included in the design and on which the performance rating is based. This list shall document all *energy* features that differ between the models used in the *baseline building performance* and *proposed building performance* calculations. (G1.3.2 c)
- b. A list identifying those aspects of the *proposed design* that are less stringent than the requirements of Sections 5.5, 6.5, 7.5, 9.5, and 9.6 (prescriptive provisions) (G1.3.2 e) and a list of those aspects that exceed the prescriptive requirements (G1.3.2 a)
- c. A list showing compliance for the *proposed design* with all the requirements of Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 (mandatory provisions). (G1.3.2 d)

**Renewable Energy**

The information included in this section describes the renewable energy systems in the proposed design including technology type, system location, system ownership and generation output capacity, to establish applicability of renewable energy requirements in Section G2.4.1.

**Exceptional Calculations**

The section includes the list of exceptional calculations and a checklist to confirm that required supporting documentation for each exceptional calculation method is submitted (G2.5).

**Table 4 Energy Use and Cost Summary by Energy Source and End Use**

This table reports the energy consumption and energy cost for the proposed and baseline buildings by end use. Each end use is grouped under either regulated or unregulated energy. Total regulated and unregulated energy cost is calculated and summed to find the total building energy cost. In addition, energy savings calculated using the exceptional calculations are reported. Regulated, unregulated and total energy cost for the baseline and proposed design models and exceptional calculation results will be used in the next section.

**Table 5 Energy Use by Energy Source**

This section summarizes energy use and cost by fuel type for the proposed and baseline building.

**Table 6 Performance Cost Index and Performance Cost Index Target**

This section is used to calculate the Performance Cost Index Target (PCI<sub>t</sub>) that the proposed building must meet. The total area weighted BPF and the regulated, unregulated and total energy cost for the baseline building are transferred from previous tables and used in the calculation. The Performance Cost Index (PCI) is also calculated. The PCI including solar is then compared to the PCI<sub>t</sub>, and the building complies if the PCI does not exceed PCI<sub>t</sub>.

**Supporting Documentation Checklist**

This section lists supporting documentation that must be included along with the filled out compliance form (G1.3.2).