| v3 - LEED 2009

# Minimum energy performance

EAp2 | Required

Glossary

## Intent

To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

## Requirements

**Option 1. Whole building energy simulation**

Demonstrate a 10% improvement in the proposed building performance rating for new buildings, or a 5% improvement in the proposed building performance rating for renovations to existing buildings, compared with the baseline building performance rating. Calculate the baseline building performance rating according to the building performance rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda[1]) using a computer simulation model for the whole building project. Projects outside the U.S. may use a USGBC approved equivalent standard[2].

Appendix G of Standard 90.1–2007 requires that the energy analysis done for the building performance rating method include all energy costs associated with the building project. To achieve points using this credit, the proposed design must meet the following criteria:

- Compliance with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4) in Standard 90.1–2007 (with errata but without addenda[1]).
- Inclusion of all the energy costs associated with the building project or USGBC approved equivalent.
- Comparison against a baseline building that complies with Appendix G of Standard 90.1–2007 (with errata but without addenda[1]) or USGBC approved equivalent. There is no default process energy cost.

For the purpose of this analysis, process energy is considered to include, but is not limited to, office and general miscellaneous equipment, computers, elevators and escalators, kitchen cooking and refrigeration, laundry washing and drying, lighting exempt from the lighting power allowance (e.g., lighting integral to medical equipment), and other (e.g., waterfall pumps).

Regulated (nonprocess) energy includes lighting (for the interior, parking garage, surface parking, façade, building grounds, etc., except as noted above); heating, ventilation, and air-conditioning (HVAC) (for space heating, space cooling, fans, pumps, toilet exhaust, parking garage ventilation, kitchen hood exhaust, etc.); and service water heating (for domestic or space heating purposes).

Process loads shall be identical for both the baseline building performance rating and for the proposed building performance rating. However, project teams may follow the exceptional calculation method (ANSI/ASHRAE/IESNA Standard 90.1–2007, G2.5) or USGBC approved equivalent to document measures that reduce process loads. Documentation of process load energy savings must include a list of the assumptions made for both the base and the proposed design, and theoretical or empirical information supporting these assumptions.

Many of the industry standard baseline conditions for commercial kitchen equipment and refrigeration have been defined in Tables 1–4 in the Requirements section of EA Credit 1. No additional documentation is necessary to substantiate these predefined baseline systems as industry standard. If USGBC approved equivalent addresses process loads within the standard rather than using an exceptional calculation method, demonstrate how the requirements of Tables 1-4 are being met by the standard.

Projects in California may use Title 24–2005, Part 6, in place of ANSI/ASHRAE/IESNA Standard 90.1–2007 for Option 1.

**OR**

**Option 2. Prescriptive compliance path: ASHRAE Advanced Energy Design Guide**

Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide for Small Retail Buildings 2006. Project teams must fully comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located. Projects outside the U.S. may use ASHRAE/ASHRAE/IESNA Standard 90.1-2007 Appendices B and D to determine the appropriate climate zone.

The building must meet the following requirements:

- Less than 20,000 square feet (1,800 square meters).
- Retail occupancy.

**OR**

**Option 3. Prescriptive compliance path: Advanced Buildings™ Core Performance™ Guide**

Comply with the prescriptive measures identified in the Advanced Buildings™ Core

Performance™ Guide developed by the New Buildings Institute. The building must meet the following requirements:

- Less than 100,000 square feet (9,300 square meters).
- Comply with Section 1, Design Process Strategies, and Section 2, Core Performance Requirements.
- Projects less than 100,000 square feet (9,300 square meters) must comply with Section 1 and Section 2 of the Core Performance Guide.
- Health care, warehouse, and laboratory projects are ineligible for this option.

Projects outside the U.S. may use ASHRAE/ASHRAE/IESNA Standard 90.1-2007 Appendices B and D to determine the appropriate climate zone.

**OR**

**Option 4. Brazil compliance path: PBE Edifica**

Projects in Brazil that are certified at the "A" level under the Regulation for Energy Efficiency Labeling (PBE Edifica) program for all attributes (Envelope, Lighting, HVAC) achieve this prerequisite. The following building types cannot achieve this prerequisite using this option: Healthcare, Data Centers, Manufacturing Facilities, Warehouses, and Laboratories.

### Pilot ACPs Available

The following pilot alternative compliance path is available for this prerequisite. See the pilot credit library for more information.

EApc95: Alternative Energy Performance Metric ACP

**Address**
2101 L Street NW
Suite 500
Washington, DC 20037

**Within the United States:**
1-800-795-1747

**Outside the United States:**
1-202-742-3792

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