LEED ND: Plan | v3 - LEED 2009

Building energy efficiency

GIBc2 | Possible 2 points

Intent

To encourage the design and construction of energy-efficient buildings that reduce air, water, and land pollution and adverse environmental effects from energy production and consumption.

Requirements

The following requirement applies to 90% of the building floor area (rounded up to the next whole building) of all nonresidential buildings, mixed-use buildings, and multiunit residential buildings four stories or more constructed as part of the project or undergoing major renovations as part of the project.

New buildings must demonstrate an average 18% (1 point) or 26% (2 points) improvement over ANSI/ASHRAE/IESNA Standard 90.1–2007, with errata but without addenda (or a USGBC-approved equivalent standard for projects outside the United States). Buildings undergoing major renovations as part of the project must demonstrate an average 14% (1 point) or 22% (2 points) improvement over ANSI/ASHRAE/IESNA Standard 90.1–2007. For projects outside the United States, consult ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendixes B and D, to determine the appropriate climate zone.

Projects must document building energy efficiency using one or a combination of the following:

a. Produce a LEED-compliant energy model following the methodology outlined in the LEED rating system appropriate to each building's scope, including demonstration by a whole building project computer simulation using the building performance rating method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1–2007. Appendix G requires that the energy analysis done for the building performance rating method include all energy costs associated with the building project. Projects in California may use Title 24–2005, Part 6, in place of ANSI/ASHRAE/IESNA Standard 90.1–2007 (or USGBC approved equivalent standard for projects outside the United States).

b. Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide listed below, appropriate to each building's scope. Comply with all applicable criteria as established in the guide for the climate zone in which the project is located. For projects outside the United States, consult ANSI/ASHRAE /IESNA Standard 90.1–2010, Appendixes B and D, to determine the appropriate climate zone.

    a. ASHRAE Advanced Energy Design Guide for Small Office Buildings 2004 (office occupancy buildings less than 20,000 square feet or 1,800 square meters).
    b. ASHRAE Advanced Energy Design Guide for Small Retail Buildings 2006 (retail occupancy buildings less than 20,000 square feet or 1,800 square meters).
    c. ASHRAE Advanced Energy Design Guide for Small Warehouses and Self-Storage Buildings 2008 (warehouse or self-storage occupancy less than 50,000 square feet or 4,600 square meters).
    d. ASHRAE Advanced Energy Design Guide for K–12 School Buildings (K–12 school occupancy less than 200,000 square feet or 18,600 square meters).

c. For buildings less than 100,000 square feet (9,300 square meters), comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute, as follows:

    a. Comply with Section 1, Design Process Strategies, and Section 2, Core Performance Requirements, of the Core Performance Guide.
    b. Health care, warehouse and laboratory projects are ineligible for this path.

If method (a) is used for all of the floor area evaluated in this prerequisite, the total percentage improvement is calculated as a sum of energy costs for each building compared with a baseline. If any combination of methods (a), (b), and (c) is used, the total percentage improvement is calculated as a weighted average based on building floor area. In determining the weighted average, buildings pursuing (a) will be credited at the percentage value determined by the energy model. Buildings pursuing (b) or (c) will be credited at 12% better than ANSI/ASHRAE/IESNA Standard 90.1–2007 (or USGBC-approved equivalent standard for projects outside the United States) for new buildings and 8% better for existing building renovations.

AND

For new single-family residential buildings and new multiunit residential buildings three stories or fewer, 90% of the buildings must achieve a Home Energy Rating System (HERS) index (or a USGBC approved equivalent) score of at least 75.

Project teams wishing to use ASHRAE-approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

Pilot Alternatives Available

The following pilot alternative compliance paths are available for this credit. See the pilot credit library for more information.

EApc107 - Energy Performance Metering Path