

Information Sheet: Residential Energy Code Compliance

This document applies to any building under the scope of the Residential Energy [RE] provisions of the 2018 International Energy Conservation Code (IECC). New one- and two-family dwellings and townhouses three stories or less in height above grade must fully comply with the requirements of the 2018 International Residential Code (IRC) and the 2018 IECC [RE]. New one- and two-family dwellings and townhouses four stories or greater in height above grade and Group R-2, R-3, and R-4 buildings three stories or less in height above grade must fully comply with the International Building Code (IBC) and the 2018 IECC [RE]. For a visual representation, please review the flow chart found here: [Which Code Do I Use](#).

All dates contained in this document refer to the date of permit application.

I. Compliance Path Options

For buildings types described above, permit applicants may choose between five main energy code compliance paths: Prescriptive, Prescriptive with Envelope Tradeoffs, Performance, Energy Rating Index, and Above Code Programs. Regardless of which compliance path is chosen, the applicant must meet all requirements in the IECC that are designated as “mandatory”. For a visual representation, refer to: [Energy Code Compliance Path Flowcharts](#).

A. Optional Simulated Performance Alternative

To receive a building permit under this path, the permit application shall be accompanied by a preliminary 2018 (as applicable) IECC Report produced using REM/Rate, Ekotrope, or other software meeting the requirements of IECC Section R405.6. To be eligible for a certificate of occupancy, permit applicants choosing this optional compliance path shall provide a final 2018 (as applicable) IECC Report calculated based on performance testing results and as-built conditions.

B. Optional Energy Rating Index (ERI) Compliance Alternative

When following the optional Energy Rating Index (ERI) Compliance Alternative, all verification shall be performed by a RESNET-certified HERS Rater following RESNET/ICC Standard 301. Field data may be collected by a RESNET-certified Ratings Field Inspector (RFI). To receive a building permit under this path, the permit application shall be accompanied by a preliminary HERS or ERI Report produced using REM/Rate, Ekotrope, or other RESNET-accredited HERS Rating software programs. To be eligible for a certificate of occupancy, the HERS Rater or permit holder must submit to the inspector an ERI Report¹ and a completed, software-generated Energy Code Inspection Checklist.

C. Optional Above Code Programs Alternative

To receive a building permit under this path, the permit application shall be accompanied by a preliminary HERS or ERI Report produced using REM/Rate, Ekotrope, or other RESNET-accredited HERS Rating software programs. To be eligible for a certificate of occupancy, permit applicants choosing this optional compliance path shall provide an ENERGY STARTM certificate or [PECO New Home Rebates](#) certificate to the inspector.²

¹ When using a HERS Rating software program that does not incorporate Pennsylvania-specific amendments, the ERI Report shall be a 2018 IECC ERI Report and may show a failing result provided the only failing items are the ERI score and building envelope air leakage. In such cases, the ERI score shall be 62 or lower and the air leakage rate shall be 5.0 ACH50 or less.

² A temporary certificate of occupancy may be issued to allow for completion of final certification paperwork.



II. Duct & Envelope Testing Form

Effective April 1, 2019, the [L&I Duct & Envelope Testing \(DET\) Certificate Form](#) shall be completed and signed by the entity performing the test and provided to the inspector prior to scheduling the final inspection. For Group R buildings, testing agencies may submit a summary report including a list of all units that are exempt from testing (duct leakage only) and test results for all tested units.

A. Building Envelope Air Leakage Testing

Blower door testing shall be performed in accordance with ASTM E 779 or ASTM E 1827 on each building or dwelling unit to verify the building envelope air leakage rate does not exceed 5.0 air changes per hour when tested at a pressure of 50 Pascals (ACH50).

UPDATE: Buildings constructed under the Residential Code may not exceed 3.0 air changes per hour if permit application was filed on or after August 14, 2022 (and subject to 2018 IRC Code provisions, with state and local amendments).

As of July 1, 2019, blower door testing shall be performed by an approved third party who shall hold one of the following certifications:

- RESNET-Certified HERS Rater
- RESNET-Certified Rating Field Inspector (RFI)
- BPI Building Analyst
- BPI Infiltration & Duct Leakage
- BPI Energy Auditor
- Envelope Professional

B. Duct Leakage Testing

Duct leakage shall be tested for all HVAC systems (excluding standalone ventilation systems) with any part of the system not located completely within the building thermal envelope. Under the prescriptive path, all forced-air systems shall be verified as having a total leakage of ≤ 4.0 cfm per 100 square feet of conditioned floor area served by that system, or ≤ 3.0 cfm per 100 square feet if testing is performed prior to installation of the air handler, when tested at a pressure of 25 Pascals.

As of July 1, 2019, duct leakage testing shall be performed by individuals holding one of the following certifications:

- RESNET-Certified HERS Rater
- RESNET-Certified Rating Field Inspector (RFI)
- BPI Energy Auditor
- BPI Infiltration & Duct Leakage
- BPI Heating Professional
- BPI/DOE Quality Control Inspector

III. HVAC Equipment Design

The [L&I HVAC Equipment Design Form](#) shall be submitted with each mechanical permit application.

Equipment sizing and selection. The *L&I HVAC Equipment Design Form* will certify that the proposed mechanical equipment has been sized and selected in accordance with ACCA Manuals J and S.

Whole-house mechanical ventilation. The *L&I Whole-House Mechanical Ventilation Design Worksheet* will certify that a whole-house mechanical ventilation system has been specified and the fan meets IECC minimum airflow (CFM) and efficacy (Watts/CFM) requirements.

IV. Air Barrier & Insulation Inspections

As of July 1, 2019, air barrier and insulation inspections shall be performed by an *approved* third party in accordance with the [L&I Air Barrier & Insulation Installation Checklist](#), based on IECC Table N1102.4.1.1.

Approved third party inspectors shall be independent from the design and construction of the building, and individuals performing the inspection(s) shall hold one of the following certifications:

- RESNET-Certified HERS Rater
- RESNET-Certified Rating Field Inspector (RFI)