To: Development Services Customers

SUBJECT: INFORMATION BULLETIN 167
IECC Residential Energy Inspection Forms


CREATED BY: Plan Review Division

Purpose:

As a customer service initiative, the Development Services Department (DSD) created this Information Bulletin (IB) 167 with the information and form to submit to clear Energy Inspections relating to compliance with the International Energy Conservation Code (IECC). The Information Bulletin has been revised to reflect the State of Texas use of the Energy Star score as a fourth path of compliance, as well as add Solar and Electric Vehicle ready.

Scope:

The currently adopted IECC - Residential Provisions apply to:

- Any new, alteration, or additions to a residential dwelling designed under the International Residential Code. This includes single family, duplex dwelling units, and townhomes.
- The residential provisions also applies to dwellings designed under the International Building Code, i.e., the residential portions of any mixed-use building, live work units, or buildings classified as Occupancy Groups R-2, R-3, and R-4, all three stories or less in height above grade plane. Those portions of the building that are not residential, or if the building is over three stories, are regulated under the Commercial provisions of the IECC (see IB 221 for forms related to commercial).

Residential Compliance Path Options:

There are four energy conservation compliance paths in the currently adopted IECC/State of Texas energy codes.

Three of the compliance paths require that certain mandatory provisions of the IECC be met and are in the 2021 IECC. Prescriptive/UA Alternative, Performance and the ERI.
The fourth compliance path is the EPA Energy Star ANSI/RESNET/ICC 301 option allowed by the State of Texas Health and Safety Code Ch. 388. Sec 388.003(i). This home energy rating system utilizes Standard 301 of the American National Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index, commonly cited as ANSI/RESNET/ICC 301, as it existed on January 1, 2021. This compliance path must meet the mandatory requirements of Section R406.2 of the 2018 International Energy Conservation Code; and the building thermal envelope is equal to or greater than the levels of efficiency and solar heat gain coefficient in Table R402.1.2 or Table R402.1.4 of the 2018 International Energy Conservation Code. Under this compliance path, ANSI/RESNET/ICC 301, as it existed on January 1, 2021, uses an energy rating index as follows:
  - 59 or lower on or after September 1, 2022.
  - 57 or lower on or after September 1, 2025; and
  - 55 or lower on or after September 1, 2028.

Each of these paths (2021 IECC and the State of Texas allowed EPA Energy Star) requires inspections as well as tests performed to ensure the energy systems are energy efficient. The Residential Energy Compliance Form is attached to this Information Bulletin and is submitted online as a pdf to clear those inspections.

**Inspection Requirements and the Residential Energy Compliance Form**

The following new home residential energy inspections are cleared with submittal of the Residential Energy Compliance Form (attached to this IB). Parts of the form correspond to individual inspections as follows:

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Energy Compliance Form Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building - Insulation with Letter</td>
<td>Insulation Materials, R-Value</td>
</tr>
<tr>
<td>Energy – Air Leakage Blower Door</td>
<td>Building Envelope Air Leakage Test</td>
</tr>
<tr>
<td>Energy - Residential Insulation Air Barrier</td>
<td>Building Envelope Air Barrier</td>
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<tr>
<td>Energy - Residential Windows</td>
<td>Fenestration U-Factors Solar Heat Gain</td>
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<tr>
<td>Energy - Residential Mech System</td>
<td>Mechanical Insulation, Efficiency, Ventilation</td>
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<tr>
<td></td>
<td>HVAC Duct Air Leakage</td>
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<tr>
<td>Energy - Residential Hot Water System</td>
<td>Plumbing System Hot Water Insulation Controls</td>
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<tr>
<td>Energy - Residential Electrical System</td>
<td>Lighting System</td>
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<tr>
<td></td>
<td>Photovoltaic Capable</td>
</tr>
<tr>
<td></td>
<td>Electric Vehicle Ready</td>
</tr>
<tr>
<td>None*</td>
<td>ERI or EPA Energy Star Path</td>
</tr>
</tbody>
</table>
*The ERI or EPA Energy Star Path* – This must be checked on the Residential Energy Compliance Form if either of these two compliance paths are chosen. Be aware that if using the ERI compliance path or the Energy Star compliance path, a certificate or report must be uploaded showing that the ERI is equal to or less than the ERI in the IECC (ERI path) or the State of Texas Requirement (Energy Star).

**Compliance Path and Respective Inspection Requirements – Residential Additions**

The following indicate the information needed to submit through the Residential Energy Compliance Form for a home addition:

**Prescriptive Only** – Section R502:
- Insulation materials, R-Value, and Continuous Air Barrier as installed.
- Fenestration U-Factors, Solar Heat Gain Coefficients as installed.
- Mechanical HVAC ((only required with a new complete HVAC system)
- Plumbing hot water system (only required with a new Hot Water system.)
- Testing for air leakage is NOT required under the 2021 IECC.

**Batch Testing - Thermal Envelope and Duct Testing for R-2, R-3, and R-4 Occupancies**

Batch Testing - For a building having seven (7) or more dwelling units, a minimum of 15% of the dwelling units in each building must be tested as required by Sections R402.4.1.2 - building envelope testing, and R403.3.5 - duct testing. For building with less than seven (7) dwelling units, one unit will be tested. If each tested dwelling unit within the batch meets code requirements, then all dwelling units in the batch are considered to meet code.

Batch Identification and Sampling - The builder shall identify a "batch" which is a building where the dwelling units are completed and ready for testing. The third-party testing contractor randomly selects at least 15% of dwelling units from a batch for testing. All units within the batch must be ready for testing (drywall complete, interior door jams installed, HVAC system installed, and final air sealing completed) before the testing contractor can select the units to be tested.

Failure to Meet Batch and Sampling Code Requirement(s)
1. If any dwelling units within the identified batch fail to meet a code requirement because of testing, the builder will be directed to fix the cause(s) of failure, and 30% of the remaining dwelling units in the batch will be randomly selected for testing regarding the specific cause(s) of failure.
2. If any failures occur in the additional dwelling units, all remaining dwelling units in the batch must be individually tested for code compliance.
3. No building may be issued a Certificate of Occupancy until testing has been performed and passed on the prescribed number of dwelling unit(s) selected for testing as indicated above.
For R-2, R-3, and R-4 buildings with batch testing of multiple dwelling units, one set of Energy Compliance Documents shall be submitted that covers compliance for the batch/entire building. Separate documents are not required for each dwelling unit.

**Submittal of the Residential Energy Compliance Form:**

The attached Residential Energy Compliance Form may be submitted with one item checked to clear one inspection or may be submitted with all or multiple certifications checked to clear all or multiple related energy inspections. Both pages of the form are always required.

When a post-construction energy report (for a Performance Path, ERI, or EPA Energy Star program) is submitted, the form is still required.

Submittal of the Residential Energy Compliance Form and any Compliance Report must be uploaded to the permit record through the BuildSA Customer Portal located at:


After logging into the BuildSA Customer Portal, under the Building tab, choose the residential new building permit record. Open the permit record and under the Record Information tab, upload a pdf file of the Residential Energy Compliance Form under the section “Attachments”. Uploading a pdf version of the form will create a city document review task on the permit to clear “Energy Inspections” after review. Be aware that opening the application record and trying to upload the form to that record rather than the permit record will not create a review by the City.

**Summary:**

This Information Bulletin is for informational purposes only.

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**Reviewed by:** Ramiro Carrillo, Development Services Manager

**Authorized by:** Crystal Gonzales, P.E. CBO, Assistant Director
Residential Energy Compliance Form – Submittal of both pages are required

Three items require a 3rd party inspection under the IECC: Page 1 of the Residential Energy Compliance Form (attached):

1. **Building thermal envelope leakage rate.**
   The City of San Antonio amendments to the IECC require that the 3rd party testing of the building envelope for leakage be performed, and information submitted by an independent certified RESNET energy rater, Texas Licensed Architect/Engineer, or DSD approved alternate such as Building Performance Institute (BPI).

2. **Building thermal envelope installation details.**
   The City of San Antonio amendments to the IECC require that the 3rd party testing of the building envelope for installation of the air barrier under Table R402.4.1.1, and information submitted by an independent certified RESNET energy rater, Texas Licensed Architect/Engineer, or DSD approved alternate such as Building Performance Institute (BPI).

3. The ERI or EPA Energy Star – The Residential Energy Compliance Form may be submitted by submitted by an Energy Rating Company or Builder/Developer that are partners with the EPA Energy Star Residential New Construction program. These are certified under RESNET or BSI.

   Other parties, including 3rd party inspectors, may submit page 2 of the Residential Energy Compliance Form:

4. **2021 IECC Compliance Paths** - The Residential Energy Compliance Form may be submitted by the installer or any system, the homeowner/homebuilder, an architect or engineer, or the 3rd party inspector/company. These include RESNET or BPI certified inspectors.

5. **Required Form section for residential additions**

<table>
<thead>
<tr>
<th>Required Sections:</th>
<th>If Applicable, Sections:</th>
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<tbody>
<tr>
<td>Insulation Materials, R-Value</td>
<td>HVAC Duct Air Leakage</td>
</tr>
<tr>
<td>Fenestration U-Factors, Solar Heat Gain</td>
<td>Mechanical System (HVAC)</td>
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<tr>
<td></td>
<td>Plumbing Hot Water System</td>
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<td>Lighting - High efficacy lamps</td>
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</table>
RESIDENTIAL ENERGY COMPLIANCE FORM

Project Address: ________________________________

Owner/Builder: ________________________________

Building Permit Number: ____________________________

Project is a (check one) New Building: ____________ Addition: ________________

Indicate the Energy Compliance Path chosen by the home designer (check one):

Prescriptive ____________ Performance ____________ ERI ____________ Energy Star ____________

INSTALLATION TEST/CERTIFICATIONS: Required to be signed by the 3rd party certified energy rater

☐ Building Envelope Air Leakage Tests  Test/Inspection Date: __________________________

I certify that the building envelope has been tested per ASTM E 779 or ASTM E 1827 and the air leakage does not exceed five air changes per hour per Section R402.4.1.2 of the IECC.

☐ Building Envelope Air Barrier  I certify that the building envelope air barrier has been installed per Table R402.4.1.1 of the IECC.

☐ ERI Path, or EPA Energy Star Path (if either compliance path used in the energy design) I certify that the ERI or the Energy Star report/certificate shows that the home meets the maximum IECC or State of Texas Energy Star ERI requirements.

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<tr>
<th>Date:</th>
<th>Phone:</th>
<th>Certification Number or Accredited Rating Provider:</th>
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<th>Certifying Company Name:</th>
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<th>Certifying Name (print or type):</th>
<th>Signature:</th>
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APARTMENTS ONLY

☐ Batch Testing of the Building Envelope and Ducts for Air Leakage – R-2, R-3 and R-4 Occupancies (Not applicable for Single Family, Duplex or Townhomes)

Total Number of Dwelling Units _________  Number of Dwelling Units Tested ____________
RESIDENTIAL ENERGY COMPLIANCE FORM

- Insulation Materials, R-Value, as installed:
  - R-Value Walls_________ R-Value Ceiling ___________ R-Value Floor (pier on beam)_________

- Fenestration (Window/All Glass) U-Factors, Solar Heat Gain Coefficients as installed:
  - Window U-Factor____________ Window SHGC____________

- Mechanical System Insulation, Equipment Size/Efficiencies, and Mechanical Whole Home Ventilation
  - Measured whole house ventilation rate (cfm) __________
  - Timer Settings for percent % run time if ventilation is not continuous: ________________

- HVAC Duct Air Leakage Tests
  - Test/Inspection Date: ________________________
  - I certify that the rough-in construction duct test results for air leakage meet the requirement of Section 403.3.3 (2018 IECC) Section 403.3.5 (2021 IECC).

- Plumbing System Hot Water Piping Insulation and Controls for Hot Water Loop Systems
  - R-Value of hot water piping insulation __________

- Lighting System (2018 IECC Only)
  - Percent of High Efficacy Lamps as installed __________

- Photovoltaic Capable
  - I certify that that the main electrical service panel meets the minimum requirements of Section R409.1 of the City amendments to the 2021 IECC.

- Electric Vehicle Ready
  - I certify that that the garage has a dedicated 40amp/240volt single receptacle for EV use per the City amendments to the 2021 IECC

CERTIFICATION STATEMENT:
All items checked and noted above were tested and/or inspected and found in conformance with the requirements of the applicable 2018 or 2021 International Energy Conservation Code or Energy Star

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<thead>
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<th>Date:</th>
<th>Phone:</th>
<th>Company Name</th>
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<th>Company Address:</th>
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<tr>
<th>Certifying Name (print or type):</th>
<th>Certifying Name (Signature):</th>
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