

<b>Title:</b>	<i>Policy – IECC Blower Door Testing</i>	<b>Policy#:</b> Building Section – B.2
<b>Departments/ Division:</b>	Community Development Building Services Section	<b>References:</b> 2018 IRC [2018 IECC] Code Section: N1102.4 [R402.4] Air leakage Referenced Amendment: IDAPA 07.03.01.004.04.
<b>Original Date:</b>	12/14/2020	<b>Revision Dates:</b> TBD
<b>Review Committee:</b> Sam Zahorka, Bruce Freckleton, Kevin Pitt, Bret Caulder, Joe Barlow, Mindi Smith		

**Purpose** To adhere with the adopted 2020 Building Idaho statutes and administrative Rules and the adopted City of Meridian ordinance, building thermal envelope air leakage testing will be subject to enforcement effective on July, 1st 2021.

The City of Meridian intends to utilize the initial six (6) month period of implementation to collect and analyze test result data from individual residential building contractors. If the data collected indicates standard construction and installation practices provide adequate thermal envelope sealing (less than 5 ACH) the city may consider waiving this requirement for that contractor as outlined in IDAPA 07.03.01.004.04. Section h. 2.2. of the 2020 IDAPA building statutes and rules handbook.

**Scope** A “Blower Door Test” is an International Energy Conversation Code (IECC) required *Building thermal envelope* air leakage test and is conducted to show how leaky or tight a home or building is. A completed blower door test will indicate how much air infiltrates the air barrier through cracks and gaps occurring during the construction process. A blower door test is conducted after all electrical, plumbing, and HVAC system components penetrating the air barrier have been installed. A blower door test is required on 20% of homes built by a contractor (this requirement is a reduction and has an implementation schedule of an additional 6 months after January 1, 2021, code adoption for soft implementation for education period for contractors).

**Policy** Effective July 1, 2021, the building thermal envelope of eighty percent (80%) of all new single-family homes constructed by each builder shall comply with Section R402.4.1.1 (Installation) **and either** Section R402.4.1.2 (Testing) or Section R402.4.1.3 (Visual inspection). The building thermal envelope of a minimum of twenty percent (20%) of all new single-family homes constructed by each builder shall comply with the (Installation) and (Testing) requirements. The building permit holder shall provide all building air leakage test results to the City of Meridian including tests failing to meet the minimum air leakage requirements.

- **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction.
- **R402.4.1.2 Testing.** Testing building envelope tightness and insulation installation shall be considered acceptable when tested air leakage is less than five (5) air changes per hour (ACH) when tested with a blower door at a pressure of 33.5 psf (50 Pa). Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances. Testing shall be conducted in accordance with RESNET/ ICC 380, ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2-inch w.g. (50 Pascals). During testing: 1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed. 2. Dampers shall be closed, but not sealed, including exhaust, intake, makeup air, backdraft and flue dampers. 3. Interior doors shall be open. 4. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed. 5. Heating and cooling system(s) shall be turned off. 6. HVAC ducts shall not be sealed. 7. Supply and return registers shall not be sealed. (All dampers to remain open so the ducting will be included in the test)
- **R402.4.1.3 Visual inspection.** Building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table R402.4.1.1, applicable to the method of construction, are field verified. Where required by code official an approved party independent from the installer of the insulation shall inspect the air barrier and insulation.

## Procedure

Each individual residential building contractor permitting a new-single family residential home in the City of Meridian shall be responsible to perform a blower door test on every fifth home permitted after all electrical, plumbing, and HVAC system components penetrating the air barrier have been installed.

- When applying electronically for a building permit through the City of Meridian Accela Citizen Access (ACA) Portal for a new single-family dwelling, the applicant shall select yes that a blower door certification test will be performed. This will be a question asked of the applicant while completing the permit request.
- A required blower door certification inspection will be created in the Accela Citizen Access (ACA) portal. This will auto schedule as pending when the applicant selects the yes checkmark in (ACA).
- After all electrical, plumbing, and HVAC system components penetrating the air barrier have been installed, the applicant/contractor, shall perform a blower door test.

- The applicant contractor shall then upload the blower door test results for their project to the City of Meridian Citizen Access Portal (ACA).
- At Final inspection, the building inspector shall verify the blower door test report has been provided by the contractor/applicant.
- If the home being tested does not comply, the building inspector shall provide the “Corrective Measures” handout and utilize this as a learning experience for our customer. Re-testing will not be required but highly recommended. A two-hour free training on envelope tightness will be recommended. Multiple failures will not be acceptable and this free training is needed to avoid future failures.
- The building inspector shall pass the blower door certification inspection and the final inspection at this time. An inspection note stating the blower door certification passed or failed shall be entered in the inspection resulting notes.
- The City of Meridian intends to utilize the initial six (6) month period of implementation to collect and analyze test result data. If significant data collected indicates standard construction and installation practices provide adequate thermal envelope sealing (less than 5 ACH) the city may consider waiving this requirement.

Certified Building Official

Signature

Date

Development Services Manager

Signature

Date

*Sam Zapucha*

5/25/2021

*[Handwritten Signature]*

5.25.2021

## Corrective Action for Failed Envelope Tightness Test

- Seal all can lights to air barrier
- Seal all receptacles/switch boxes to air barrier
- Seal all light boxes to air barrier
- Seal all utility penetration
- Seal crawl and attic access covers
- Seal all accessible plumbing penetrations
- Seal all other identifiable sources of infiltration that are accessible

Retesting is not required but highly recommended to support the effectiveness of the corrective measures

It would be recommended that all builders or their designated agents, who fail blower door testing, be encouraged to attend a 2-hour free training on envelope tightness.

Classes will be schedule in all chapter regions throughout 2020 and 2021

It should be portrayed to builder that multiple failures will not be acceptable and classes are needed to avoid failures.

Attached is a recommended form for compliance that shall be filled out by the agent performing the test.

All tester must be certified. Acceptable certifications include: BPI, HERS, and IDABO DET.