

## **Technical Bulletin: Diagnosing Blower Door Problems**

Residential New Construction Program



*BUILDING A SMARTER ENERGY FUTURE<sup>SM</sup>*

One of the main requirements for the Duke Energy RNC rebate program is a blower door test result at or below 4.0 ACH50. For builders, preparing each lot to pass the blower door test can help to avoid costly fixes after the house is completed. For raters, being able to assist the builder in fixing these issues when the test fails is an important part of the job. This month's technical bulletin will give guidance on diagnosing blower door problems when the test results are over 4.0 ACH50.

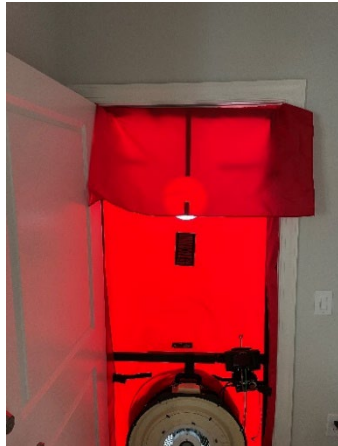
### **Diagnosing problems**

- Raters should double check all exterior doors to ensure weatherstripping and door sweeps are present.
- Make sure the hoses, blower door, TEC Wi-Fi link, and fan controller are setup properly.
- Gauge which areas of the house are leaking the most by turning the blower door on and opening doors just crack. If the door closes by itself or you feel air rushing out of the room, this means there is a source of leakage present in the room.
- Pressurize the house and go in the attic. Feel around kneewalls, rim joists, or ceilings to determine spots of air leakage. If there is leakage you will feel air blowing from the house into the attic.
- Check all drywall penetrations such as
  - Outlets
  - Exhaust fans
  - Plumbing, electrical, or HVAC penetrations
- While depressurizing the house, feel around the baseboard subfloor connection for air leakage.
- Review rough inspection and use that to target where to check for air leakage or to make recommendations.
- Top plate gaskets are a large source of leakage. There are two main top plate sealing products, sill seal and spray foam gasket. When diagnosing problems, be aware of the product used as it changes the approach to diagnosing the issue. Below include the instructions for diagnosing problems with each product.
  - Sill seal - While in the attic, look around for balled up sill seal. Often drywallers will remove it – if so, take a photo and send it to your builder contacts. A rater can also carefully find a wall and move the insulation above it. Check for sill seal in the cracks around top plate and drywall.
  - Foam gasket – Brushing the insulation to the side to get a good view at the top plate from the attic will help determine issues. Visually inspect the gaps of the top plate to determine the effectiveness of the gasket. Also, pressurize the house and feel around the top plates to verify the foam is gasketing properly. You may see insulation being blown around this is a good indication of a gap in the foam.
- Carpeting can account for up to a 100 CFM decrease on some houses. Recommend adding carpet when possible.

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Blower door has a gap at the top right corner.  
Adjust door to be snug with framing.



The DG1000 has a tubing assistant feature, this can be used to ensure hoses are connected correctly.



Attic scuttle is not aligned with the framing leaving gaps.



Bath fan exhaust is not completely caulked to the drywall.



Attic scuttle door is missing weatherstripping on the sides.



Rear door does not have weatherstripping.