

You Can't Fix What You Can't See



**USING BLOWER DOOR
DEPRESSURIZATION & THERMAL
IMAGING FOR QUALITY CONTROL**

ANTITRUST POLICY STATEMENT FOR SPRAY POLYURETHANE FOAM ALLIANCE MEETINGS



- It is and shall remain the policy of the Spray Polyurethane Foam Alliance (“SPFA”), and it is the continuing responsibility of every SPFA member company, SPFA meeting or event participant, as well as SPFA staff and leadership to comply in all respects with federal and state antitrust laws. No activity or discussion at any SPFA meeting or other function may be engaged in for the purpose of bringing about any understanding or agreement among members to (1) raise, lower or stabilize prices; (2) regulate production; (3) allocate markets; (4) encourage boycotts; (5) foster unfair or deceptive trade practices; (6) assist in monopolization; or (7) in any way violate or give the appearance of violating federal or state antitrust laws.
- Any concerns or questions regarding the meaning or applicability of this policy, as well as any concerns regarding activities or discussions at SPFA meetings should be promptly brought to the attention of SPFA’s Executive Director and/or its legal counsel.

Jamie Kaye: Envelope Expert



Jamie Kaye is the owner of Elm Energy Group. He has more than 13 years in the residential housing industry, first as a home builder/renovator and then a building science practitioner.

Kaye holds the following qualifications:

- **Certified Home Energy Rater (HERS)**
- **BPI Certified Building Analyst**
- **NGBS 2012 Verifier**
- **Level 1 Certified Thermographer**
- **Licensed Residential Builder**
- **Council-Certified Indoor Environmentalist**
- **NCI Certified Air & Light Commercial Balancing and HVAC Diagnostics**
- **Aeroseal Duct Sealing Certified Technician**

Mason Knowles: Spray Foam Expert



- Mason Knowles is the President of Mason Knowles Consulting LLC, a consulting company specializing in providing technical information, education and training for the SPF industry.
- He has more than 47 years experience in the spray polyurethane industry as a consultant, contractor, material supplier/manufacturer, equipment manufacturer and trade association professional.
- Knowles is a member of Spray Polyurethane Foam Alliance (SPFA), Insulation Contractors Association of America (ICAA) and contributes frequent web-based presentations on SPF issues. He is a SPFA Certified Field Examiner, Chair of SPFA Consultant's Committee, accredited building envelope and roofing inspector and instructor. Knowles chaired the ASTM committees on SPF roofing (D08.06) and standard specification for closed cell SPF (C-1029) for 20 years. He has written more than 200 articles for national trade journals, provides presentations for trade groups and other organizations on the SPF industry.

Building Science Facts



- **Buildings should be constructed as air-tight as possible**
 - Enables ventilation systems to be designed and operate more efficiently and cost effectively
 - Allows the HVAC contractor to condition the air going in and out of the structure
 - Controls unwanted outside air from getting into the building
 - Helps increase the performance of insulation

Spray Foam Facts



- **Sprayfoam when installed correctly can effectively air seal buildings**
 - Can seal areas that are hard to reach with other materials
 - Effective at sealing unusual configurations
 - Expands to fill in cracks that you don't see

Spray Foam Facts



- Sprayfoam if not installed correctly can allow a significant amount of air infiltration and exfiltration negating some of its benefits
- Visual inspections may not be able to determine if the spray foam is effectively air sealing the assembly

Blower Door



Benefits

- **Blower Door**
 - Measures amount of air infiltration at a specific pressure
 - Quantifies air exchange rates
 - Can tell you if the house is relatively “air-tight” or “leaky”

Limitations

- Measures the whole building’s air leakage
- Cannot specifically tell you where the air leaks are

Thermal Imaging Camera



Benefits

- Can show temperature differentials within a building assembly that are not visible

Limitations

- Doesn't tell you what causes the temperature differentials

Using A Blower Door Plus Infrared To Reveal Hidden Voids & Gaps



- When combined, the unbiased process can be completed with great detail and value in knowing an “Air Seal Verification” is complete!

Is this Soffit Air Sealed?



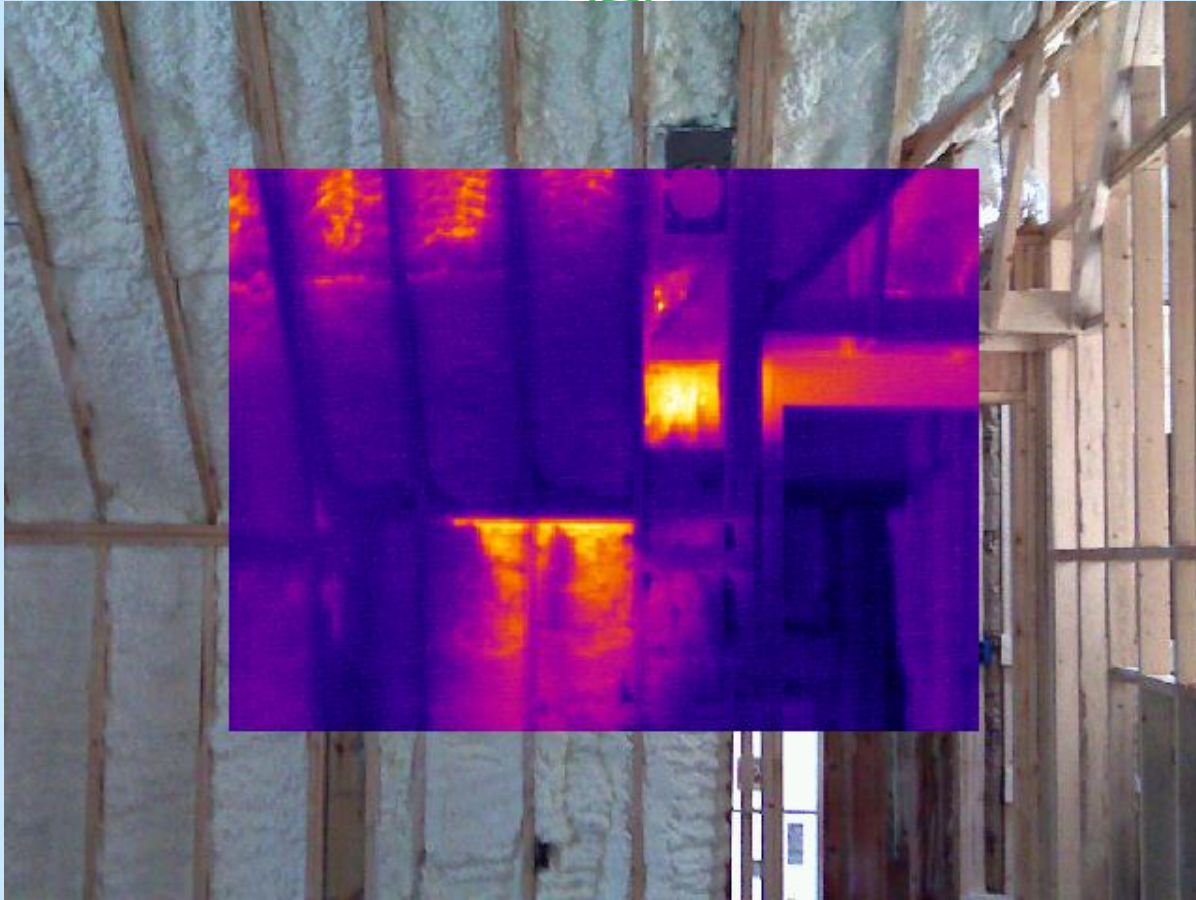
No!



Is this Air Sealed?



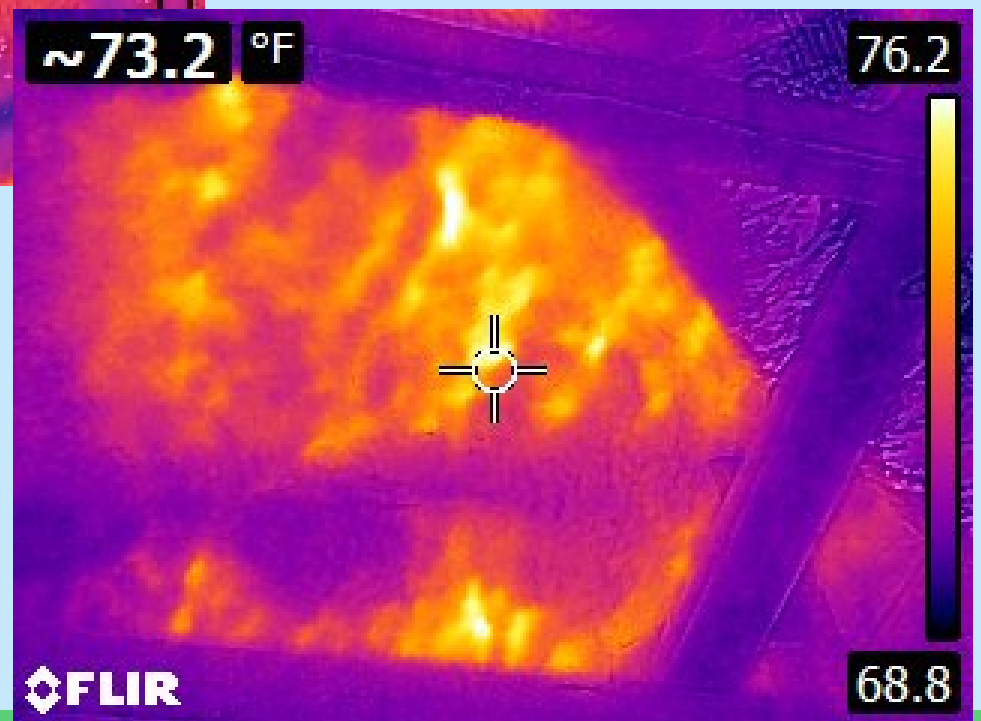
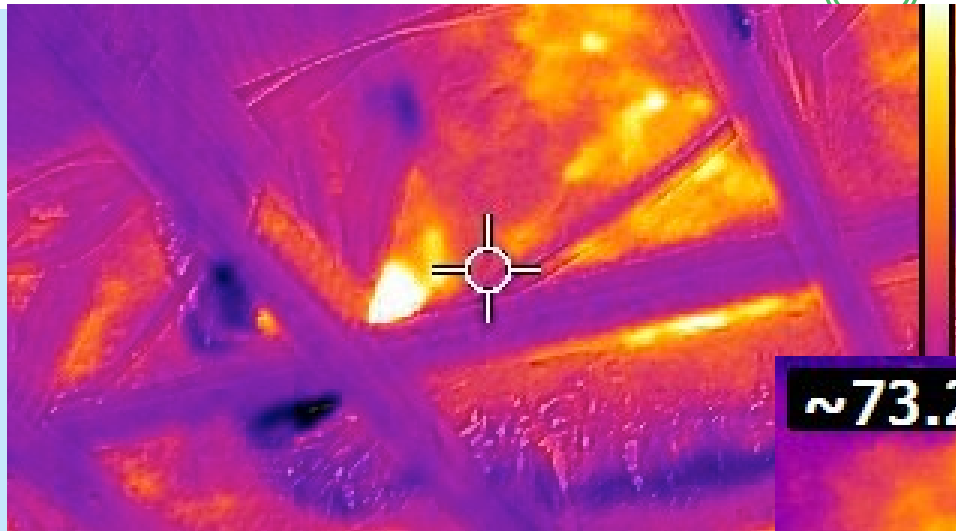
Not by a long shot!



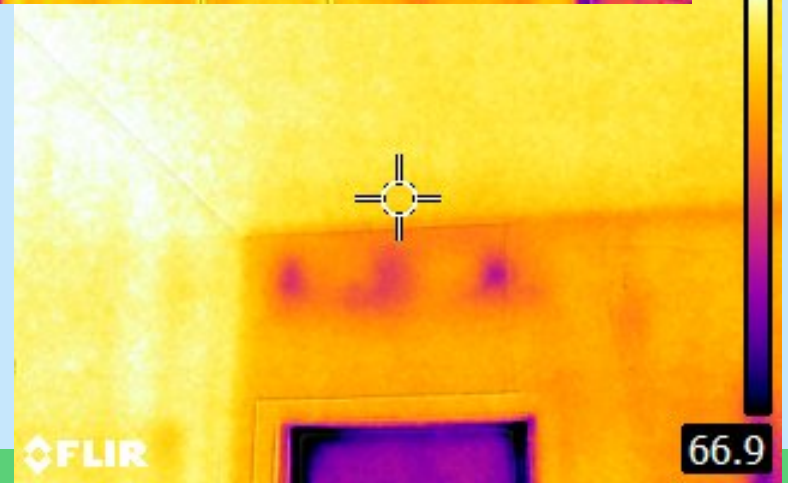
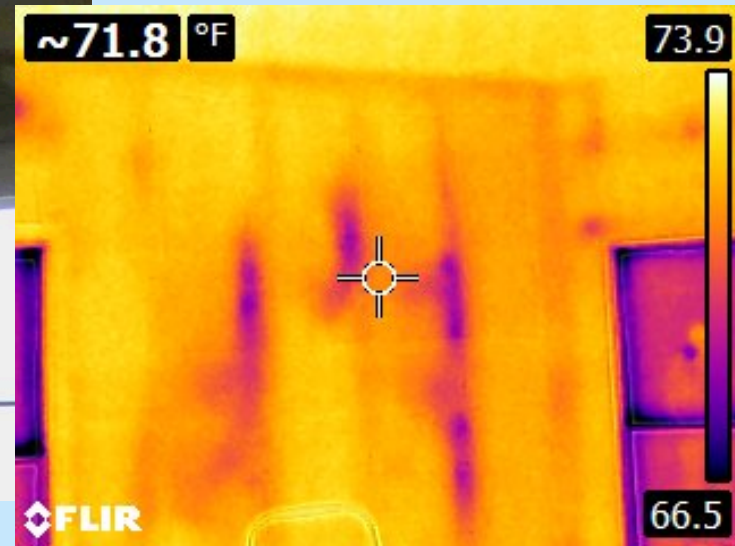
Looks Can Be Deceiving



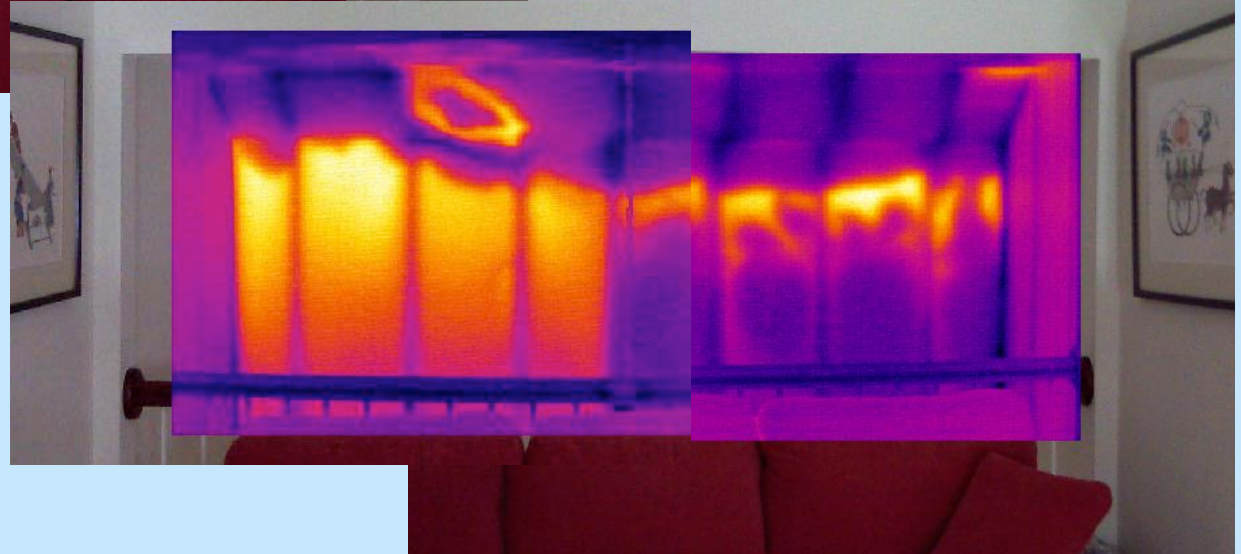
Not Quite



Infrared can find gaps behind drywall



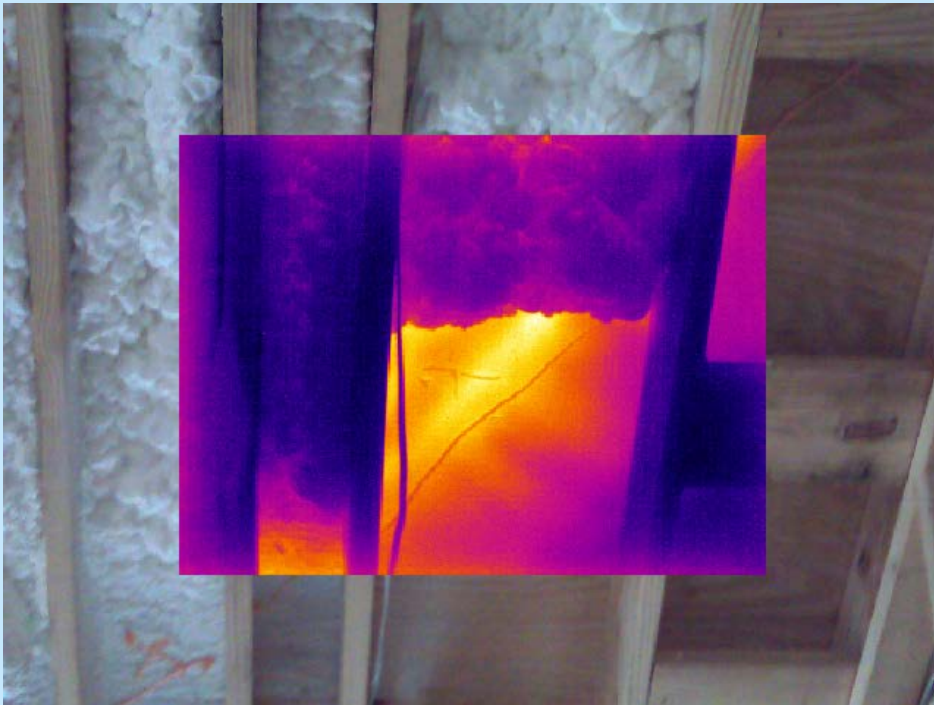
Large Voids Hidden Behind Drywall



Large Voids Trying To Hide BEFORE Drywall



More Thermal Weakness Hiding BEFORE Drywall





So here is an introduction to
“What Can Be Seen”!!

Show short ‘montage video’ –
3 minutes and 45 sec



And here is a video about the Air Seal
Verification process

Show longer video –
13 minutes



Show some other videos...

- el raton (Rat video)
- Ninja Problems (see link in email)
- others???