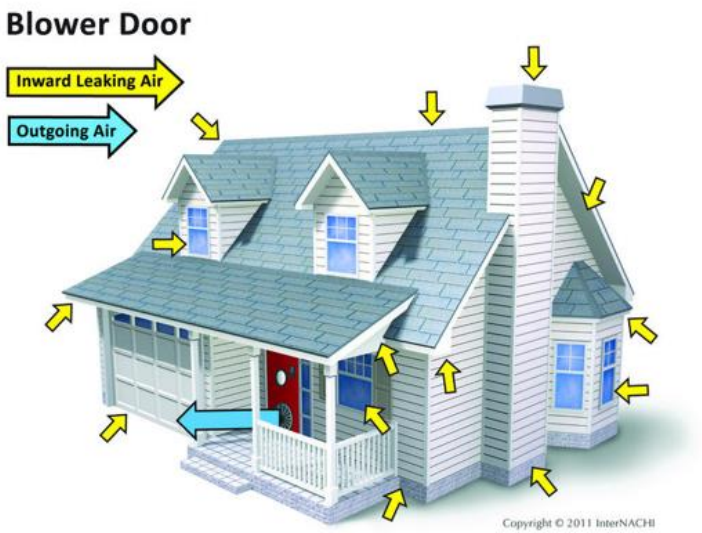
BUILDING PERFORMANCE INSTITUTE INC
BPI
SM
TEST CENTER

ENERGIZE CAROLINAS

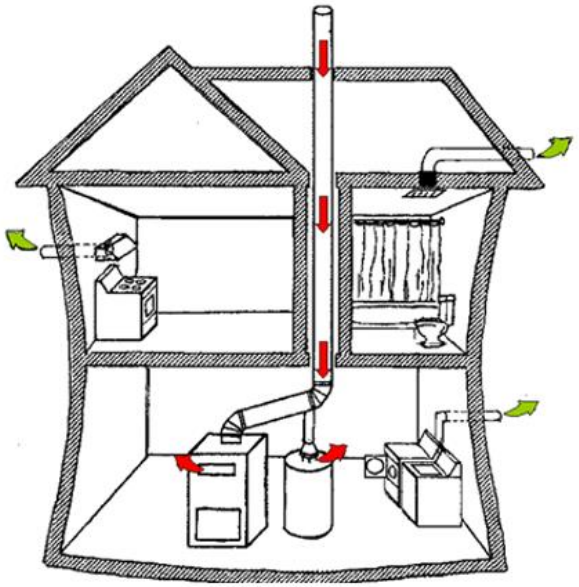
TRAINING CENTER

IREC
Interstate Renewable Energy Council
ACCREDITED
TRAINING PROVIDER
TM



When doing a blower door test…

- We intentionally produce negative pressure
- We set the combustion appliances to pilot to prevent them from backdrafting.

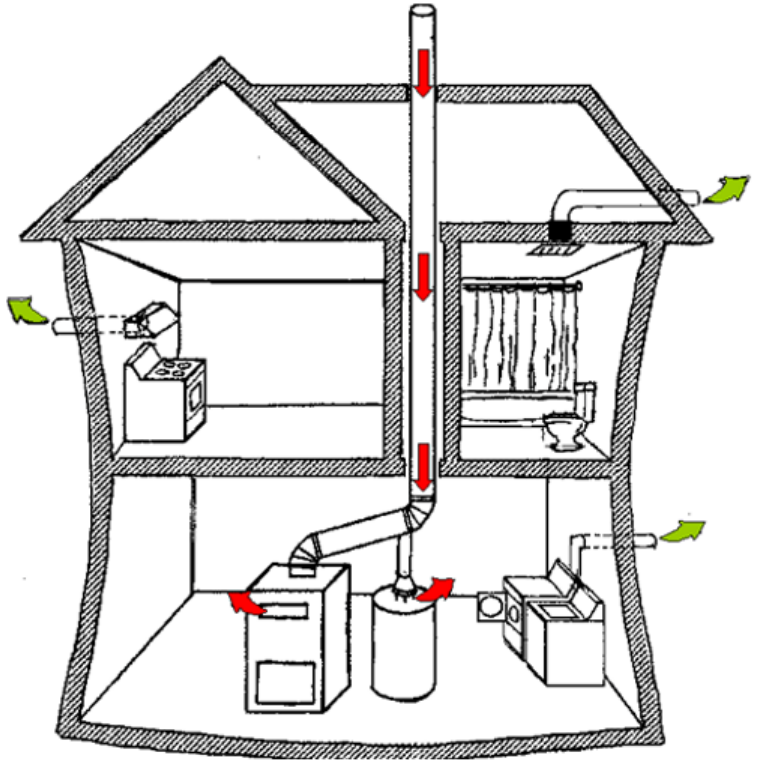


www.residentialenergydynamics.com

Exhaust fans and duct leakage

- Can cause unintended negative pressure
- Negative pressure problems can be intensified by air sealing.

- Combustion Appliance Zone (CAZ) testing is a necessary safety precaution that must be performed at the end of every workday. Exhaust fans and air sealing can create negative pressures that can cause backdrafting



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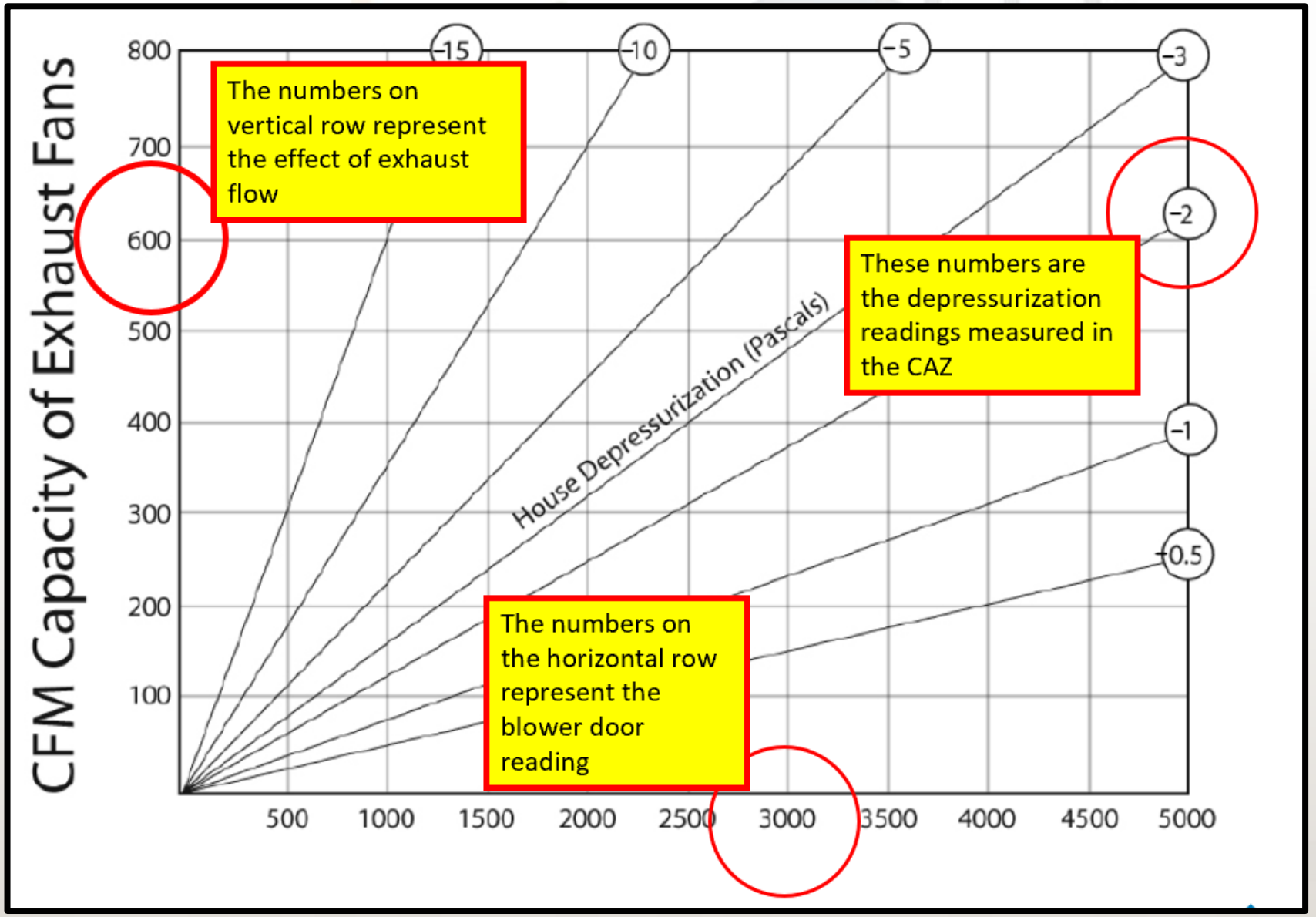
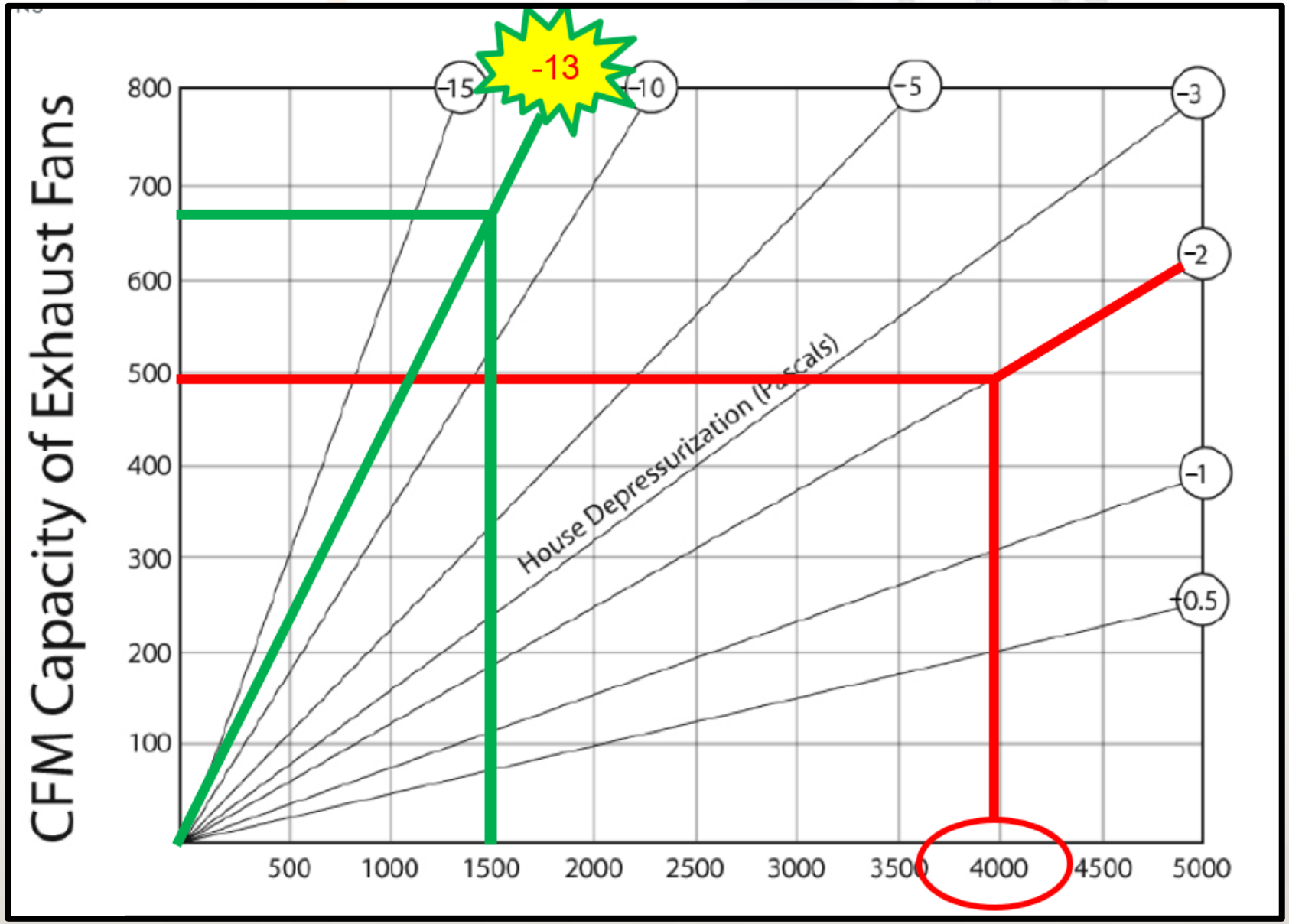
- **Possible reasons for worst-case test failure:**
  - Negative pressure from exhaust fans
  - Unbalanced flow between the supply side and the return side of the duct system due to interior door closure or duct leakage.
  - The building envelope becomes tighter through air sealing (This is a good thing, we just have to keep it in mind and plan for it.)


CFM Capacity of Exhaust Fans
800
700
600
500
400
300
200
100
-15
-10
-5
-3
-2
-1
-0.5
House Depressurization (Pascals)
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
The numbers on vertical row represent the effect of exhaust flow
These numbers are the depressurization readings measured in the CAZ
The numbers on the horizontal row represent the blower door reading

- Pre blower door reading: 4000 cfm@50
- Pre CAZ reading: -2 Pa
- Estimated post blower door: 1500 cfm@50
- Bath fan (50 cfm) and Kitchen fan (100 cfm) installed
- What would be our new CAZ reading?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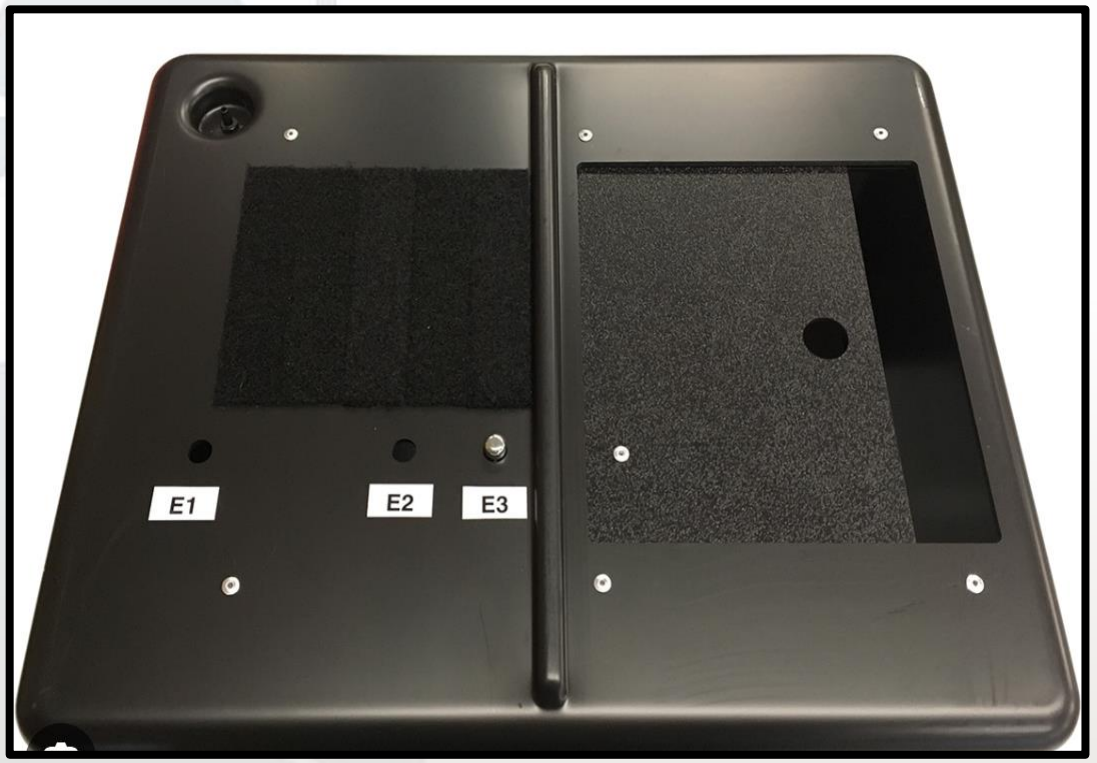

1.07 x Area of Hole x the square root of the pressure measured in the box

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Tips, Tricks and All the Other Things You Never Knew RED Could Do, Part II

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