Examples from the field
what not to do

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Don’t Assume Passing the USACE spec means all air barrier criteria are met

- Example from this building
- Our job: test if any cost effective air sealing can be performed on this and larger buildings

First perform an air leakage test
Test results, PCL building as found:
0.14 cfm 75/sq. ft. (6 sides)

- 44% tighter than the Army Corps Standard
- Average of pressure and depressurization
- 9177 cfm 75 before sealing
- 8470 cfm 75 after limited sealing
- Normalized leakage now 0.13 cfm 75/sq ft
Where to look: IR view of rear CMU wall pre
Look inside: 10 beam pockets in leased space

Open above to parapet cap

Open to inside

Smoke shows airflow
Closed cell foam fill, don’t create fire hazard

See ICC ES 3228 approvals. 
maintain exhaust on work space adj. to occupied office 
Sample MDI < 5ppb 
Manage exposure

¾ cu ft foam block
max temp rise check for building official and owner before injection.

Don’t start a fire
#1 don’t assume one required criteria substitutes for others

the whole building air leakage test does not confirm materials, details, strength, durability or location of air barrier with respect to condensation protection

Disclosure: a limited airflow reduction from sealing a few spots does not make a continuous air barrier system.
#2 don’t skip the roof wall joint

- Roof wall connection found incomplete in plan review in east coast project and leaking in a field test. A third not drawn at all and open at construction.

- Metal cornice – don’t extend the air barrier and expose it to more risk when air and thermal barrier could be attached at the plane of the wall.

- Drawing review is recommended, but shop drawings, preconstruction meeting with workers to clarify details are also needed.
Recommend air barrier at plane of wall, add cornice later

Wall air barrier membrane on glass faced gypsum board

2-part foam
Do place air barrier at plane of wall
Don’t extend air barrier out. Do include electrical and other openings in drawings.
Don’t apply transition membranes without prep
Don’t skip transition membranes for foam at roof wall, and cornice

Transition prep in ABAA SPF demo
IR view of detail 12 - where to look inside
Don’t criticize this design or construction team. Only touchup details remain, a very tight large building

- below US ACE tightness standard
- 0.11 cfm74/sq. ft. (6 sides)
Airflow at transitions
Airflow at transitions
Don’t forget the roof/wall joint.
Sub: Do notify general and architect
Roof/wall joint open

View inside from exterior wall top
Sequence: Don’t skip exterior insulation at the north roof slab edge in January: ice wins
the end

- Questions?