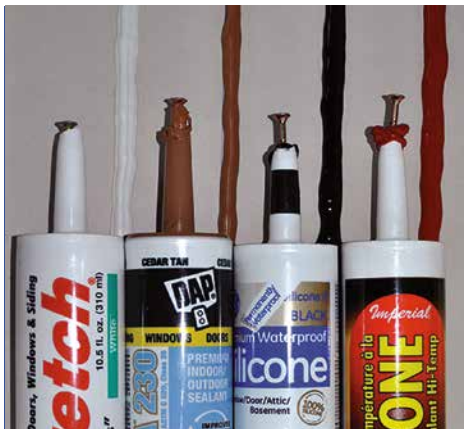
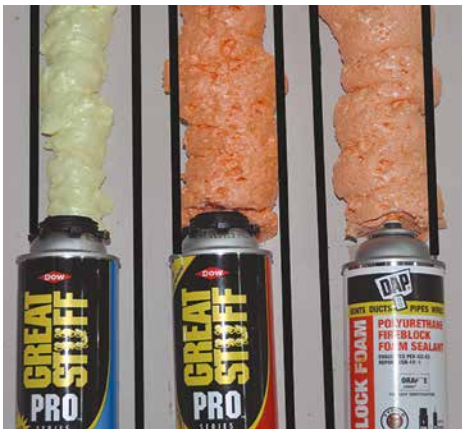
Air Seal Small Penetrations in a Subfloor

Job Aid for Air Seal Floor Above Unconditioned Subspace (Basement or Crawl Space) Badge

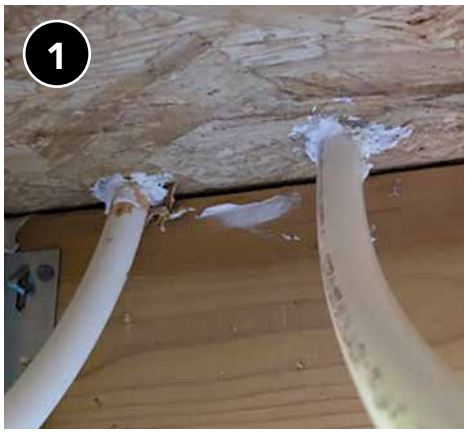
Aligns With Standard Work Specifications 3.0101.1, 3.0104.1



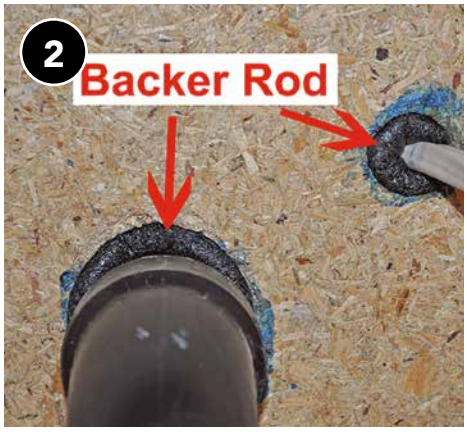
Many types of caulks and sealants will easily span and seal a 1/4-inch gap.



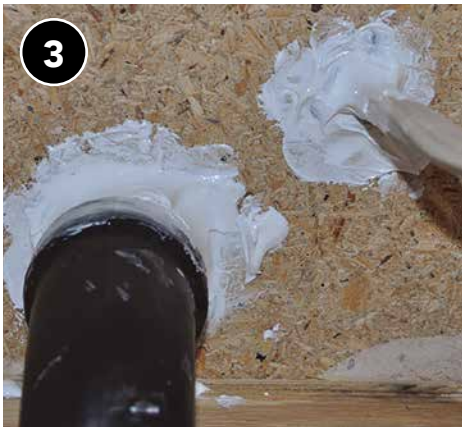
One-part spray foams can also span up to 3 inches to create an air seal.



For small penetrations, caulk or sealant is often enough to seal the gap.



Use a backer rod or other infill material when sealing a gap larger than 1/4 inch with caulk.



Seal over the backer rod to establish the air seal.

Spray foam can also be used in areas with slightly larger penetrations if fire safety requirements (e.g., thermal or ignition barrier) of the authority having jurisdiction are followed.

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Checklist

Air seal floor above an unconditioned subspace (basement or crawl space)

DESIRED OUTCOME

Consistent pressure boundary between conditioned and unconditioned space.[1]

- ☐ Remove existing insulation as needed to access air sealing locations.
- ☐ Ensure all wall cavities are enclosed on all six sides (e.g., have top and bottom plates). Install additional blocking where necessary.
- ☐ Seal the following cracks, penetrations, and chases to prevent air movement with the appropriate materials based on hole sizes according to the AIR SEALING MATERIALS GUIDELINES table below:
  - ☐ Chases
  - ☐ Plumbing penetrations
  - ☐ Electrical penetrations
  - ☐ Chimney/flue[2]
  - ☐ Ductwork penetrations into subspace
  - ☐ Any other holes/penetrations in the floor plane/boundary.
- ☐ Clean work area.

AIR SEALING MATERIALS GUIDELINES	
HOLE/GAP SIZE	MATERIALS/NOTES
1/4" or less (small)	Caulk
1/4"–2" (medium)	One-component foam or mastic
2"–3" (large)	Two-component foam
3" or larger (extra-large)	Infill material installed that will not bend, sag, or move Support material (e.g., 2X4) installed for spans wider than 24"

1. Relevant Standards: 3.0101.1, 3.0104.1

2. Materials must be appropriate for high-temp situations.

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