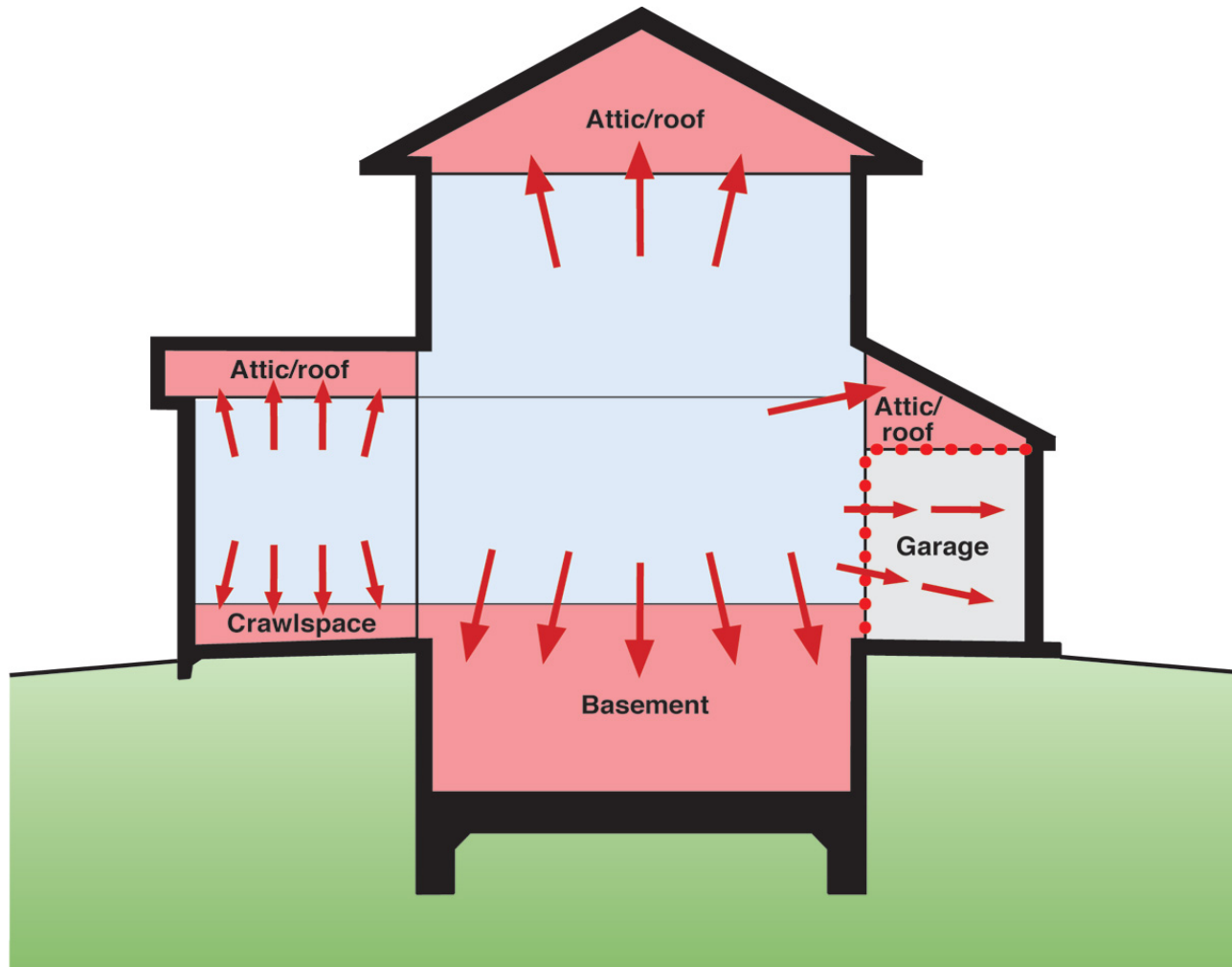


Joseph Lstiburek, Ph.D., P.Eng, ASHRAE Fellow

Building Science

Foundations

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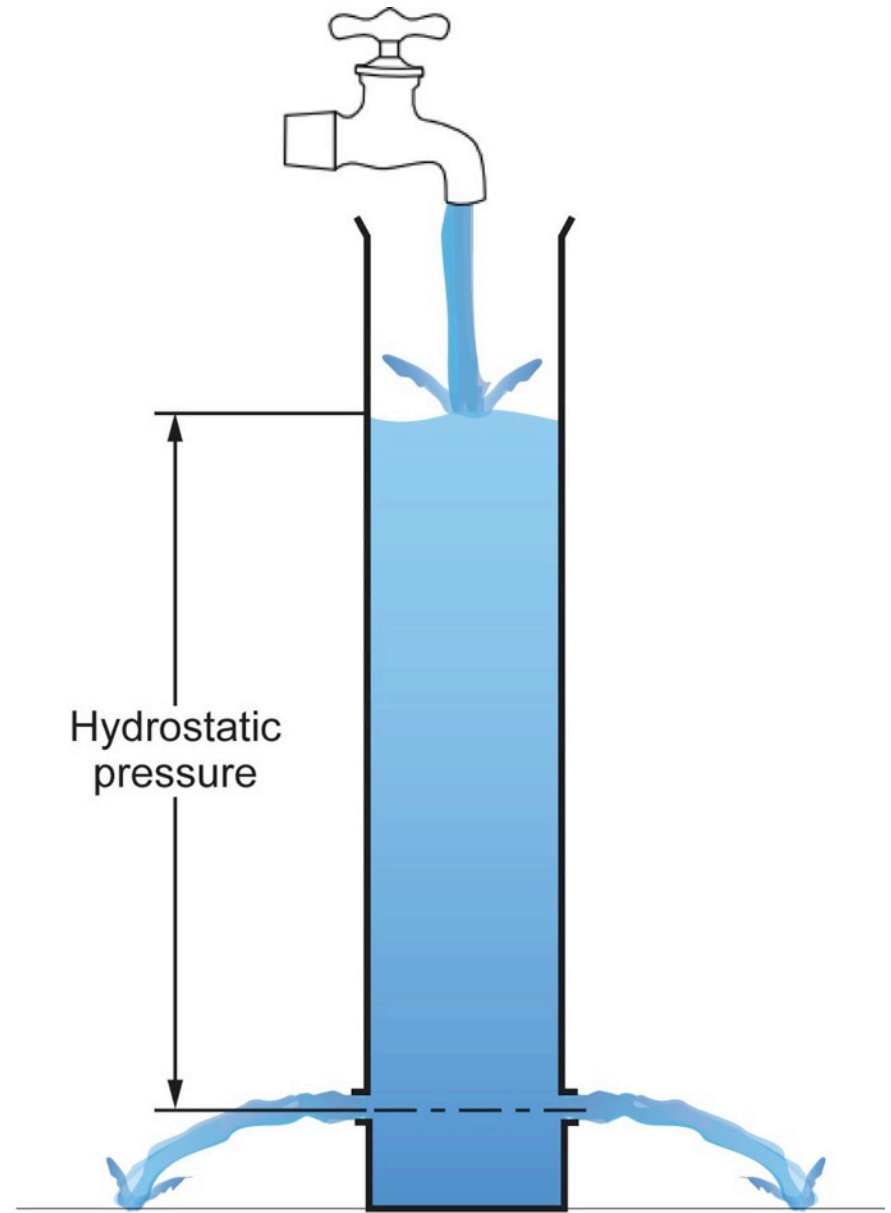
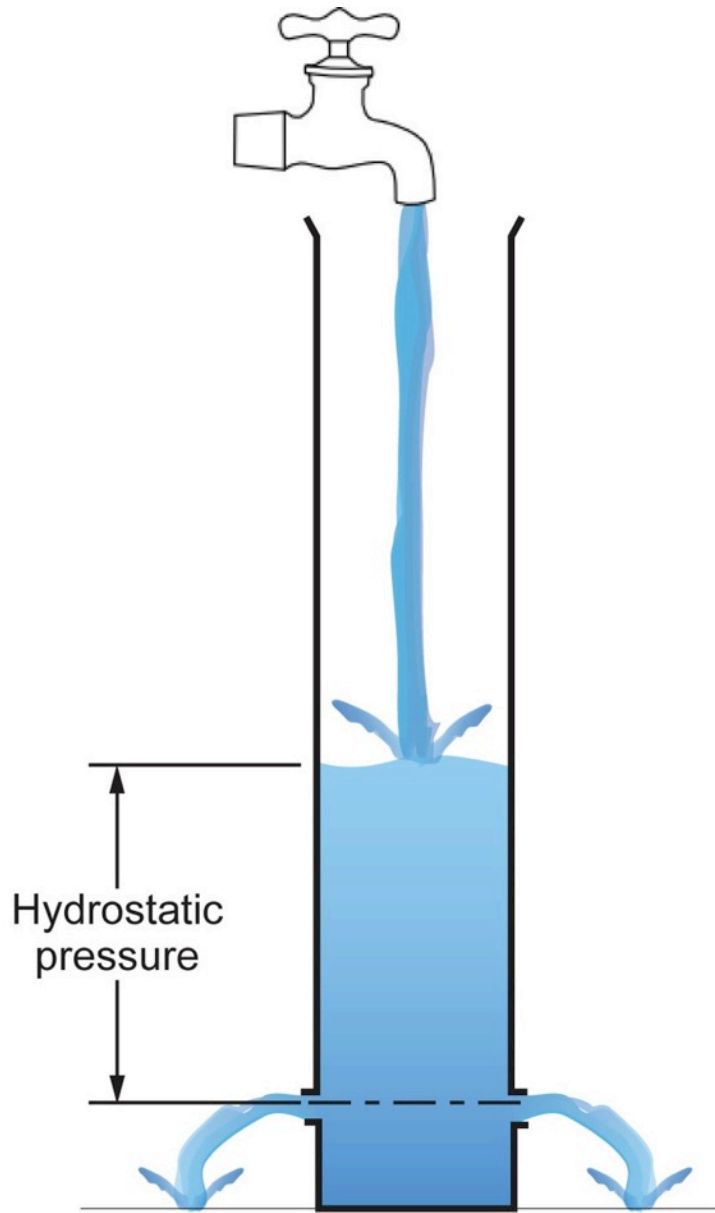


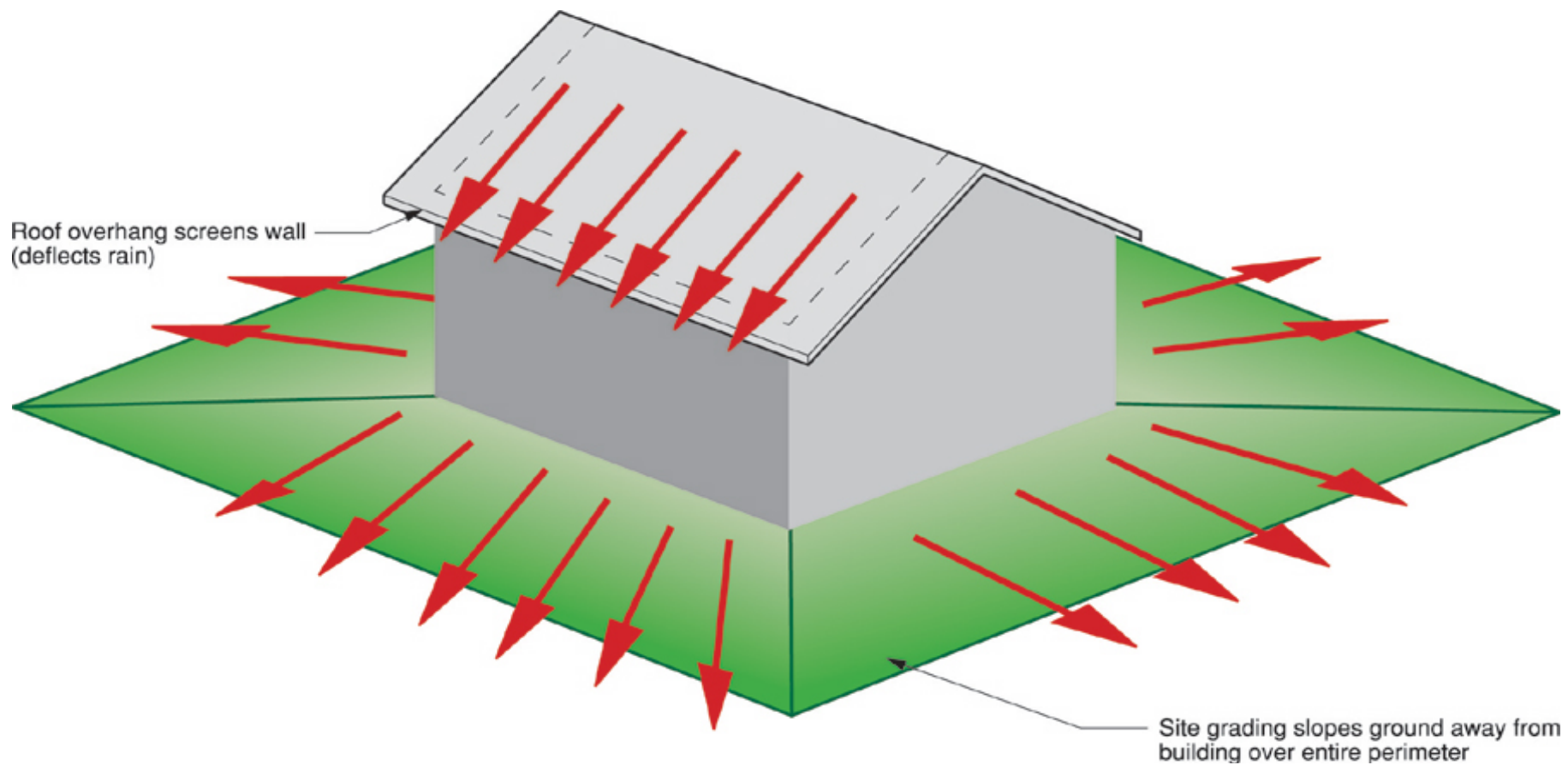
Expansion of Conditioned Space

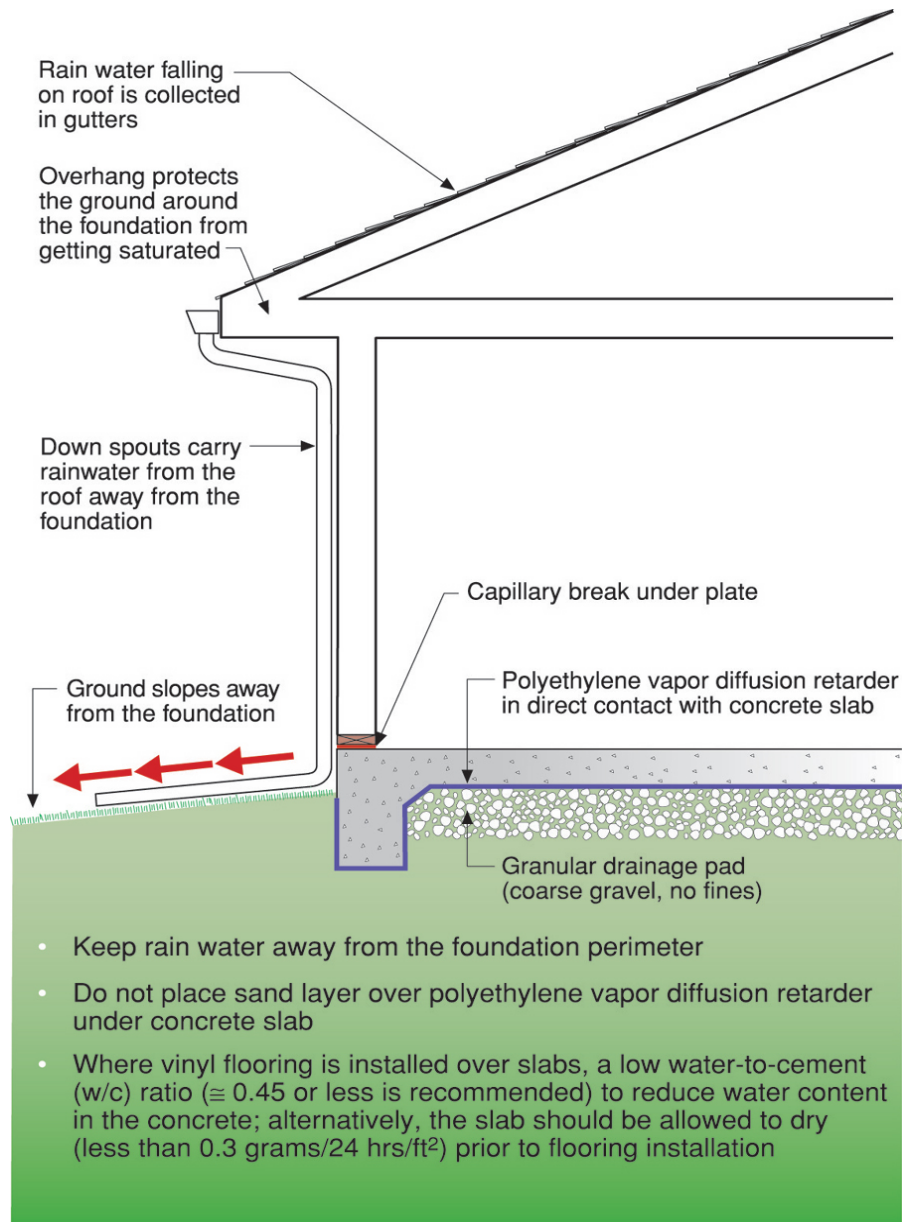
- Conditioned space boundaries moving towards exterior surfaces of building
- Garage isolated from house by air barrier/pressure boundary
- Garage ventilated and conditioned independently of rest of conditioned spaces

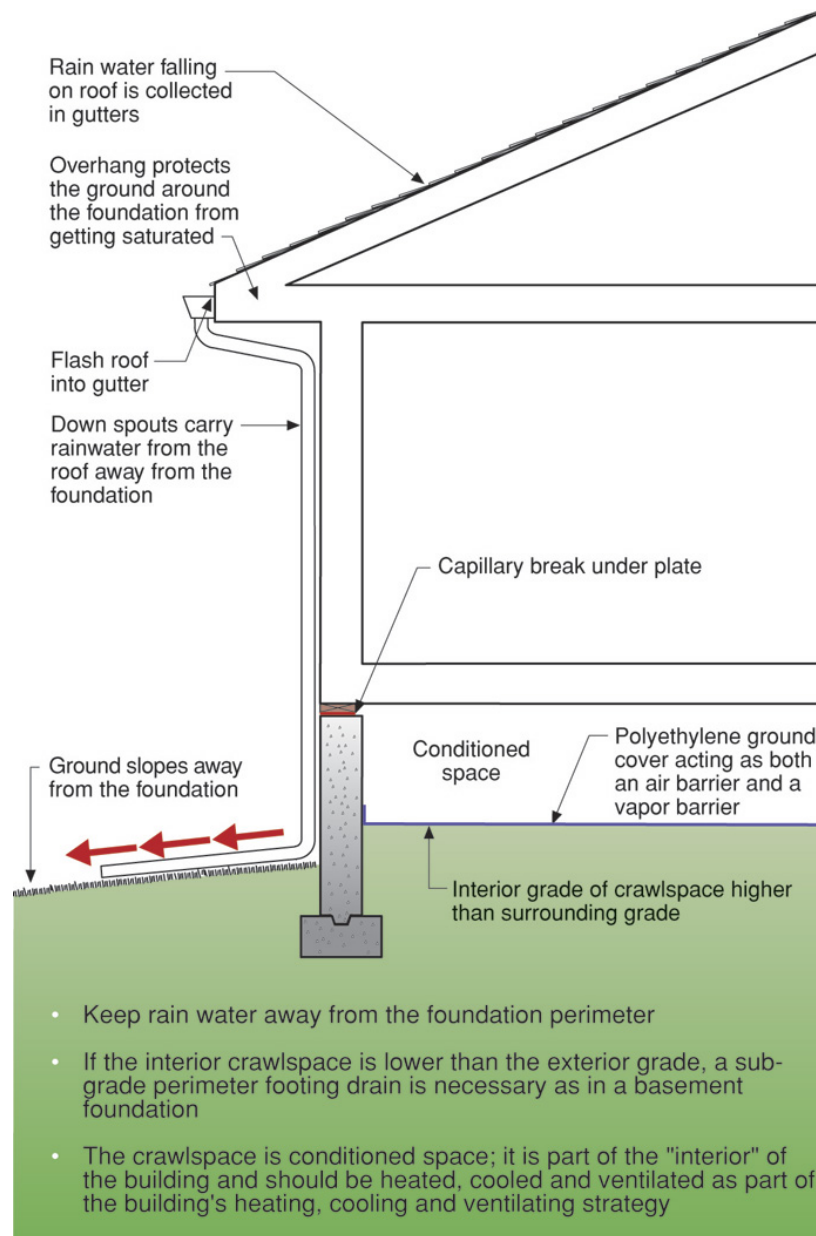
Mechanisms of Flow

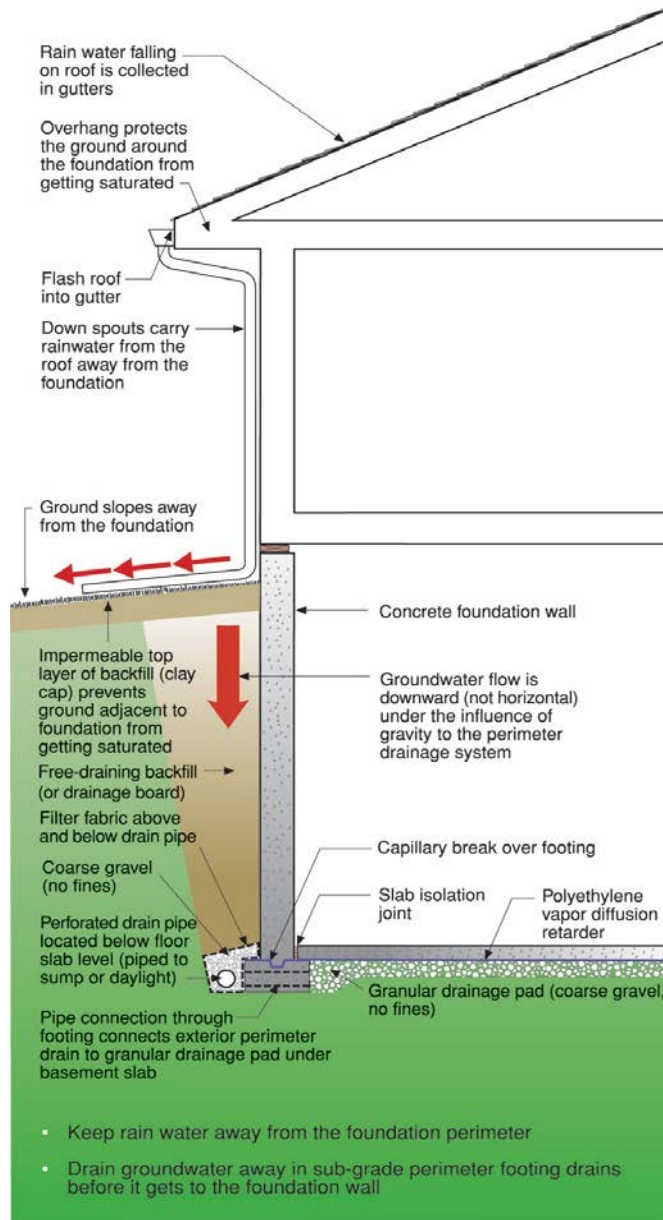
- Liquid Gravitational Hydrostatic Pressure
 Capillary Suction Pressure
 Osmosis Solute Concentration
- Vapor Diffusion Vapor Pressure
 Convective Air Pressure





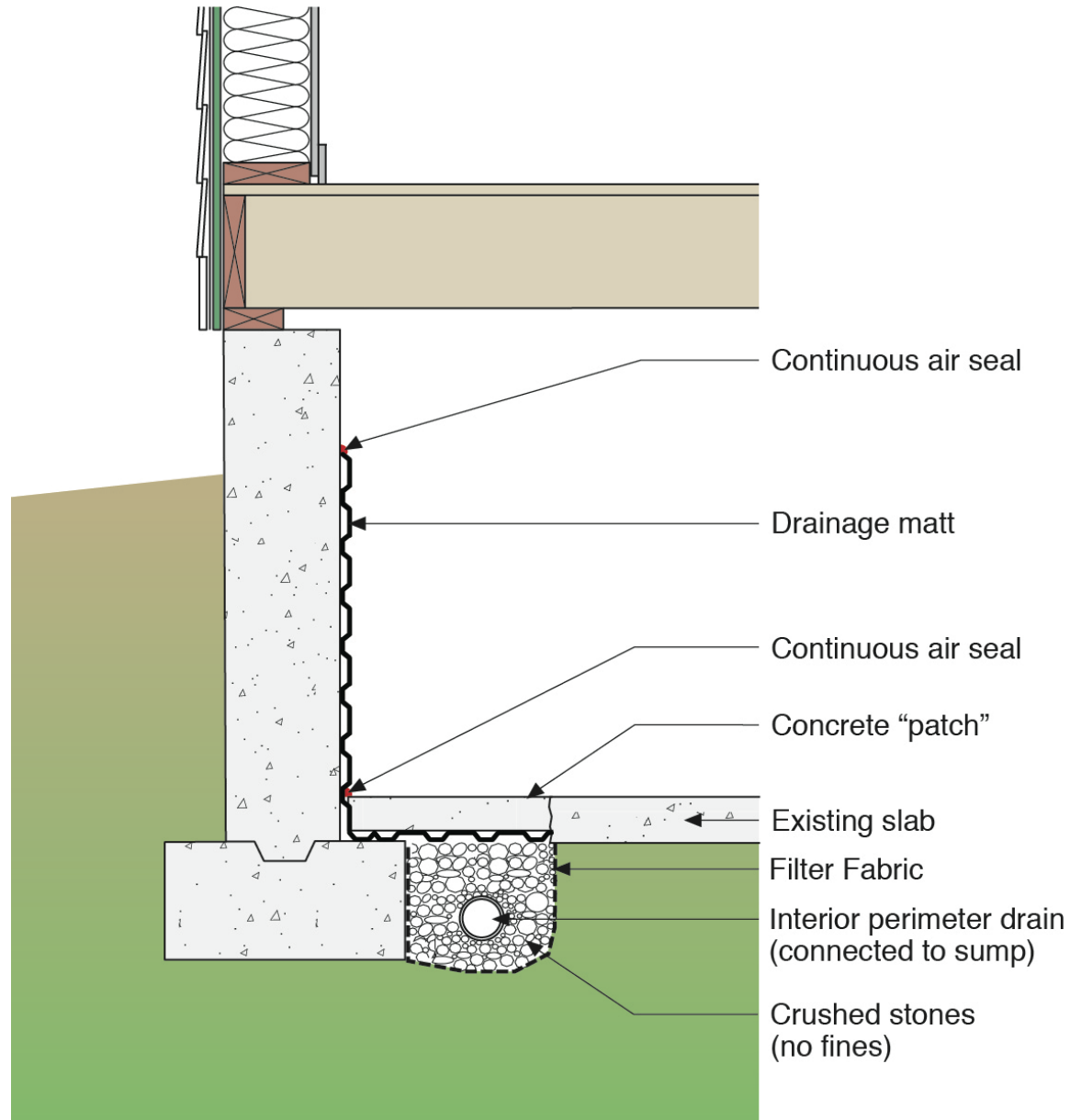




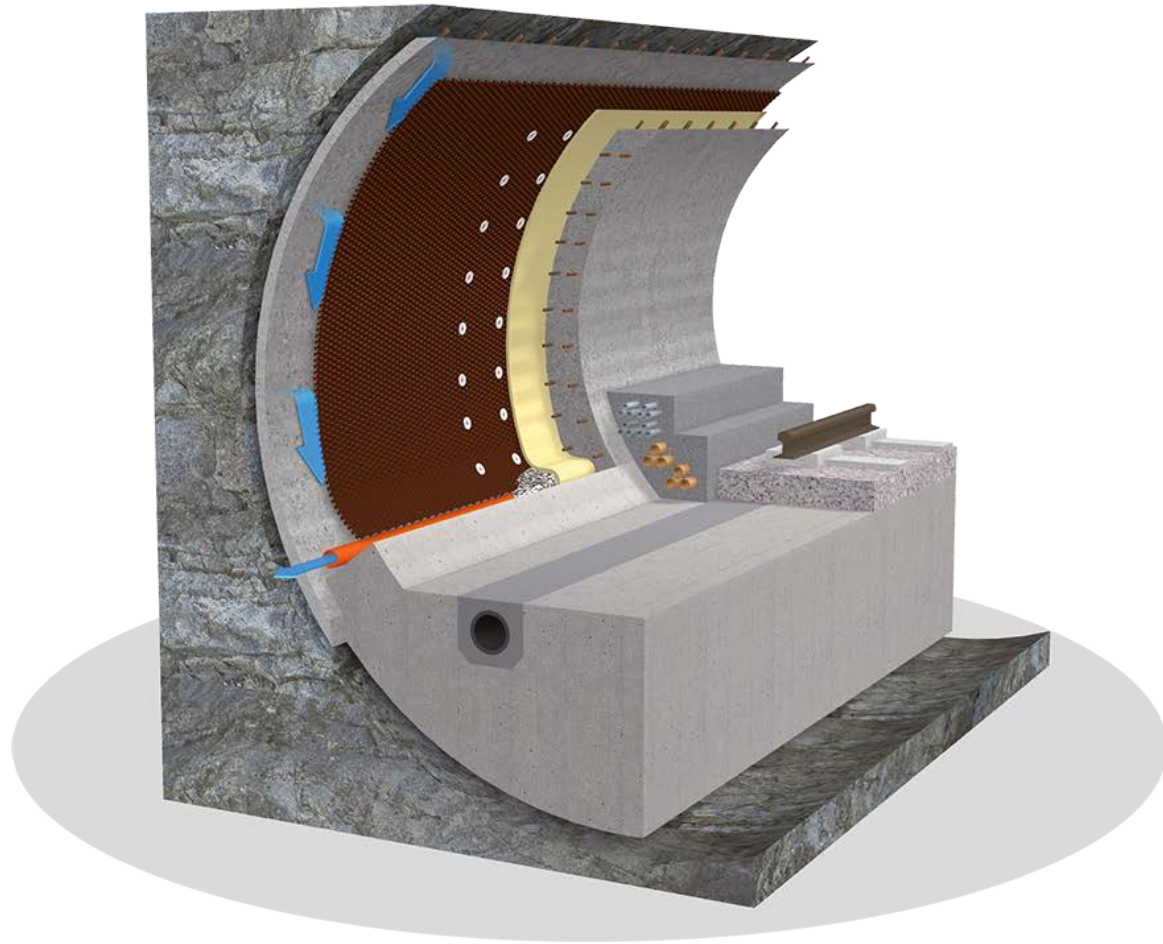




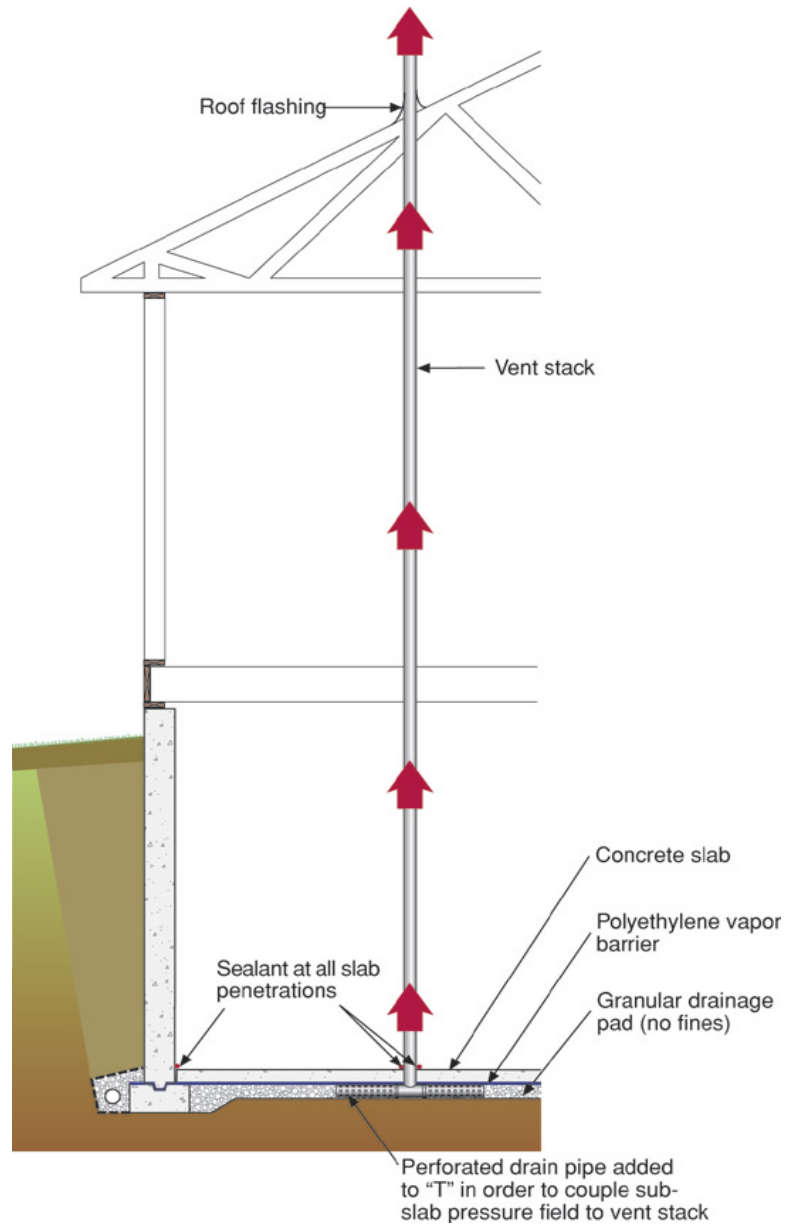


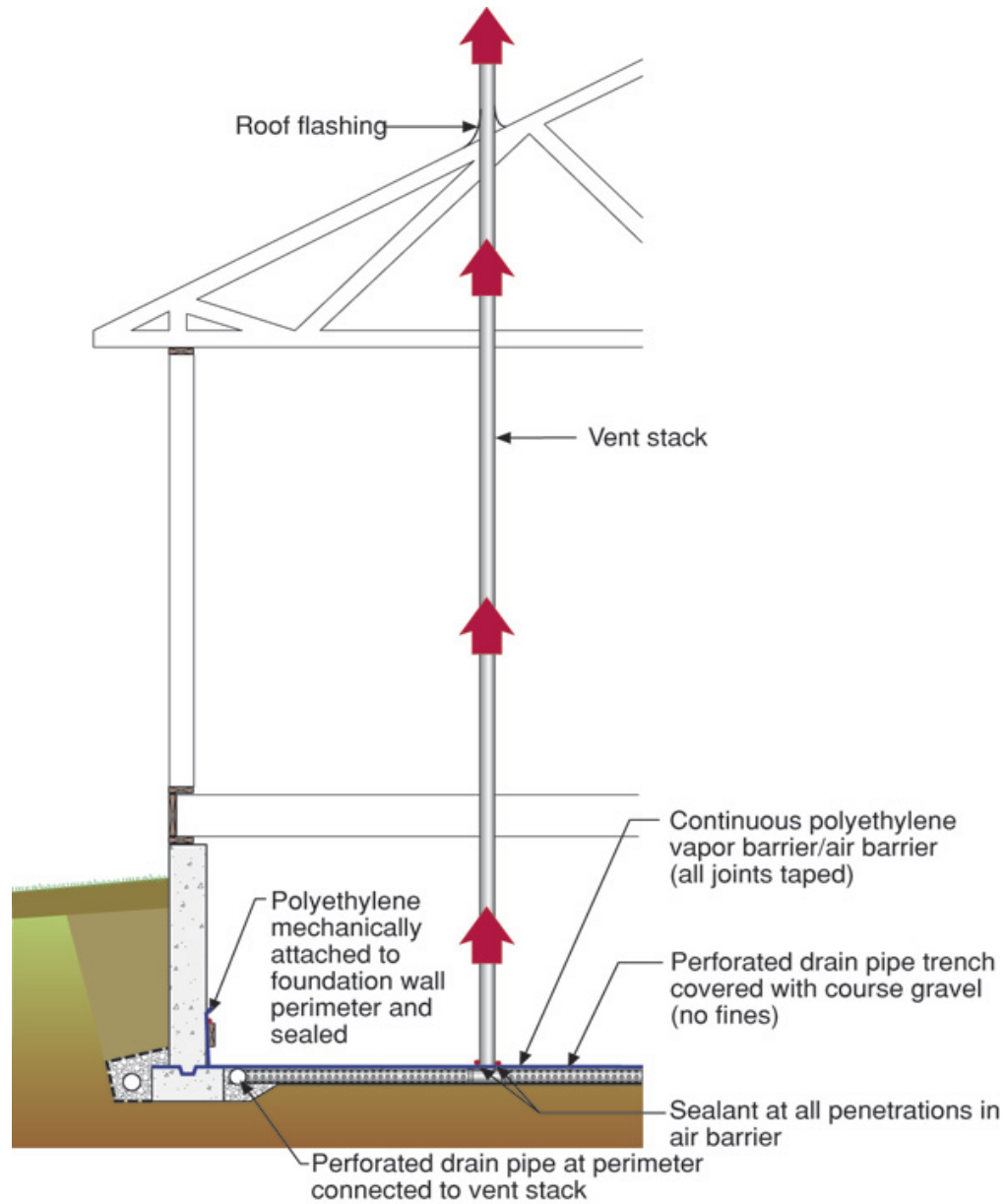


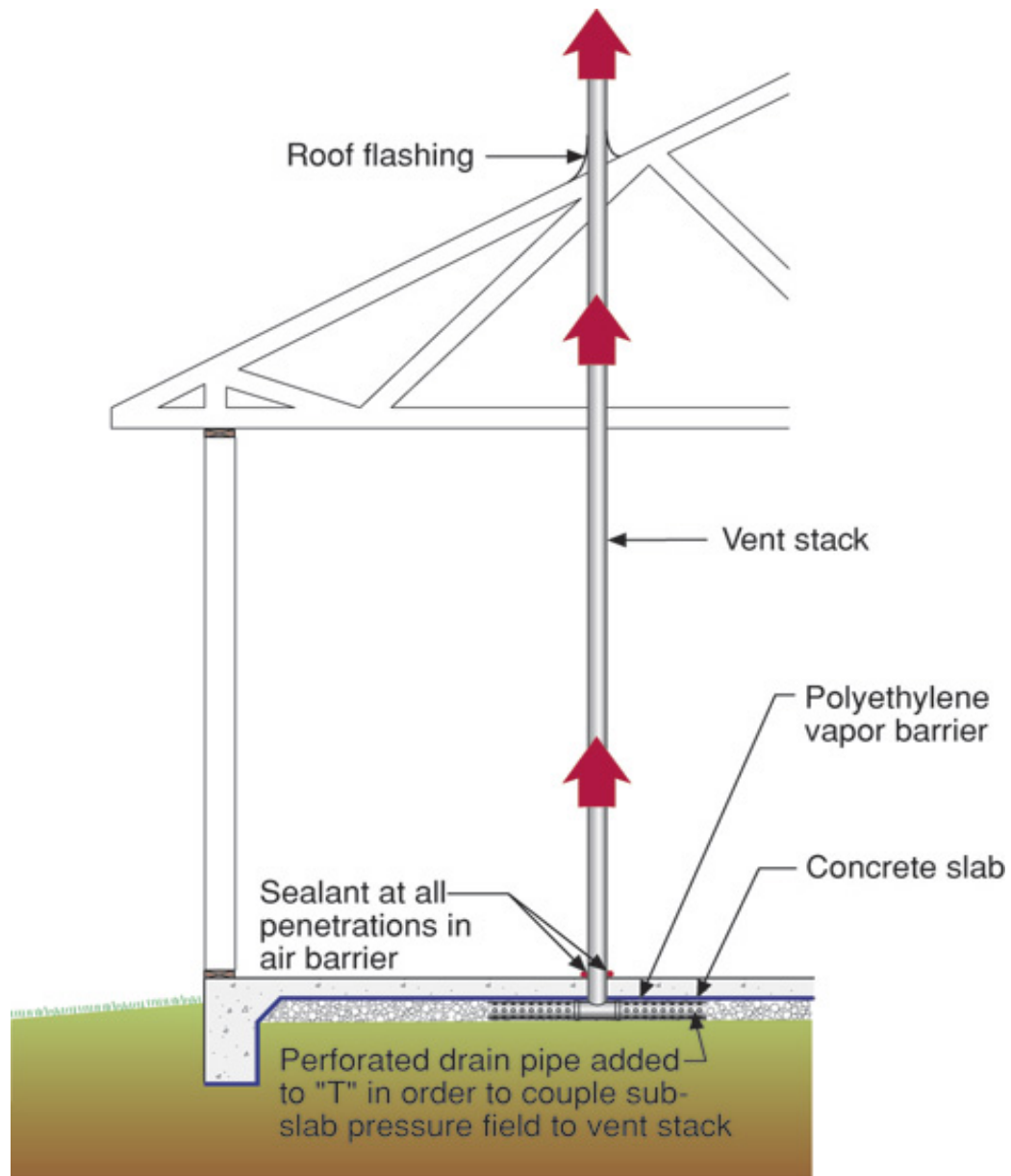




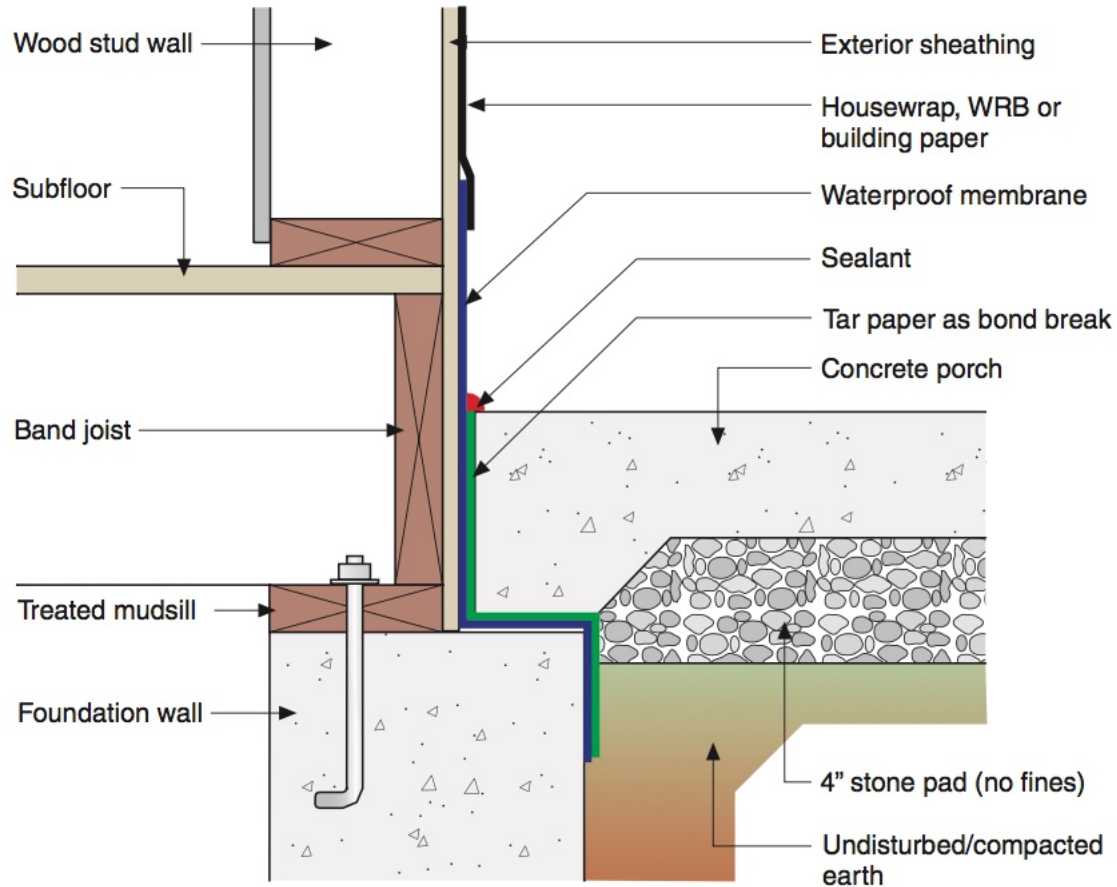




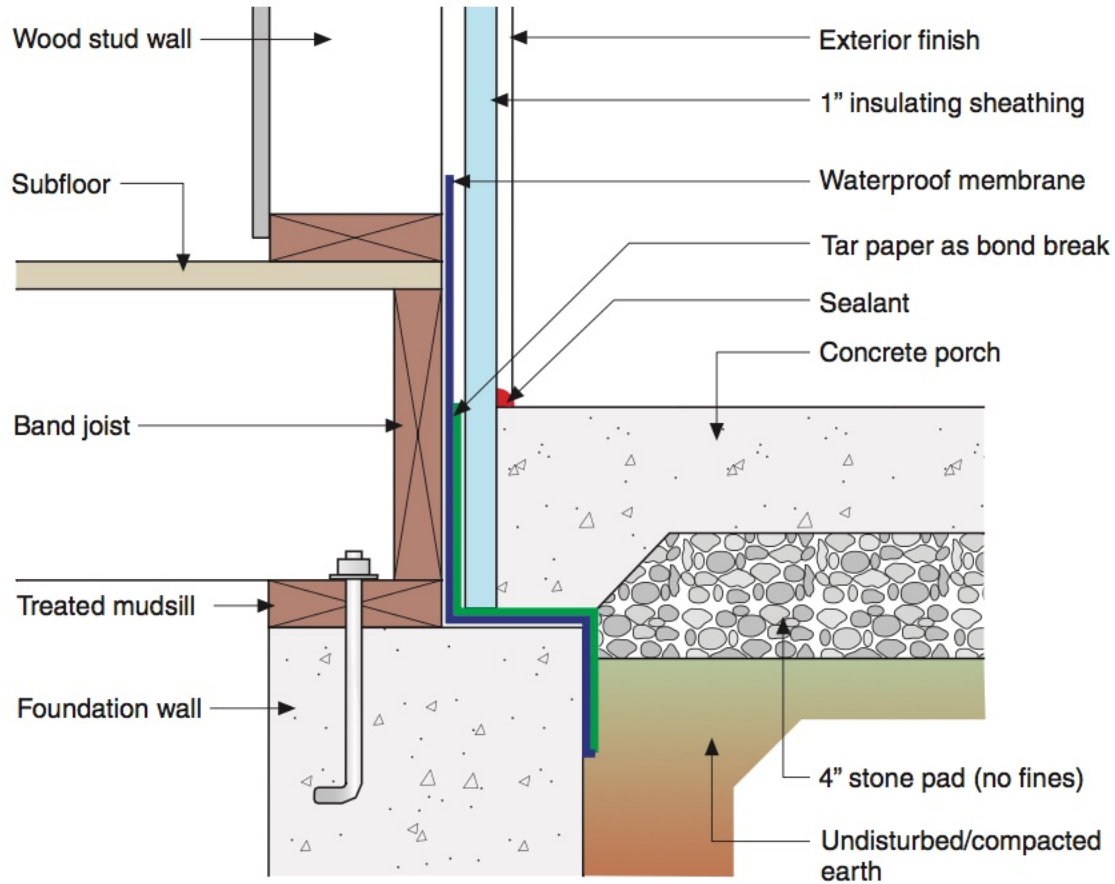




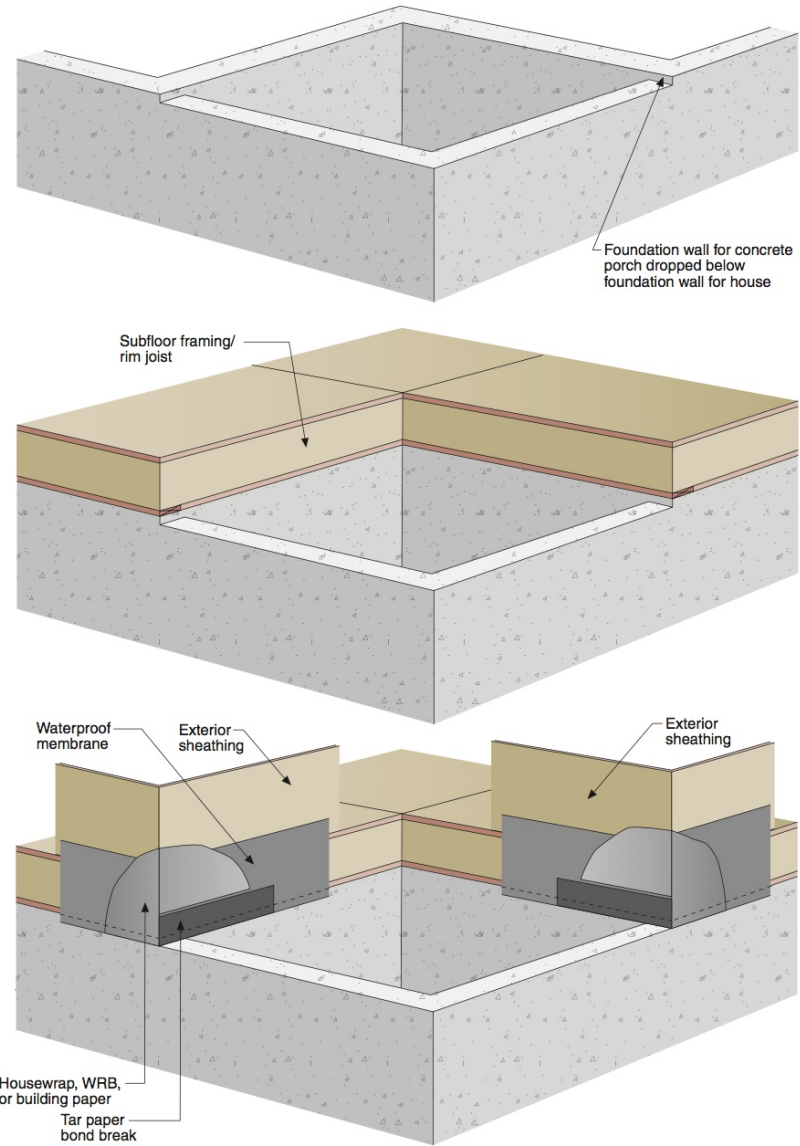
CONCRETE PORCH SLAB WITH HOUSEWRAP

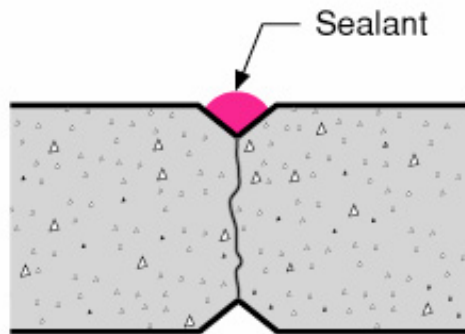
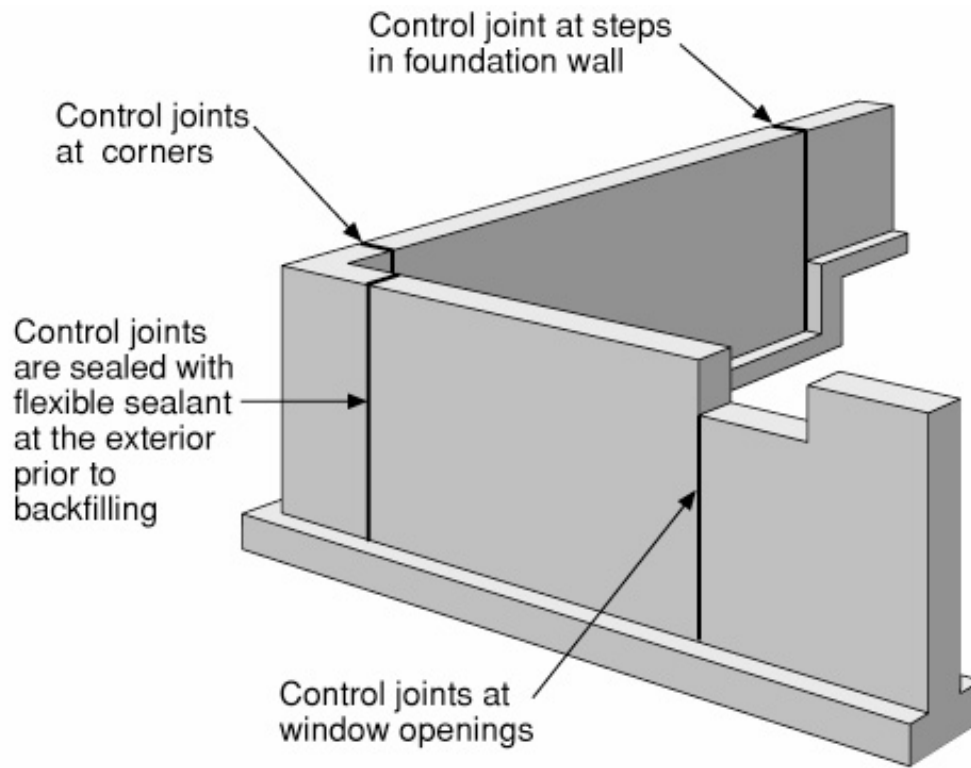


CONCRETE PORCH SLAB WITH INSULATING SHEATHING

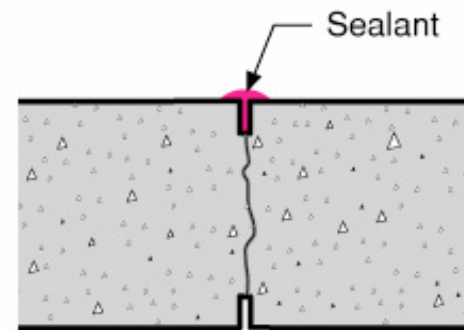


CONCRETE PORCH/FOUNDATION INTERSECTION





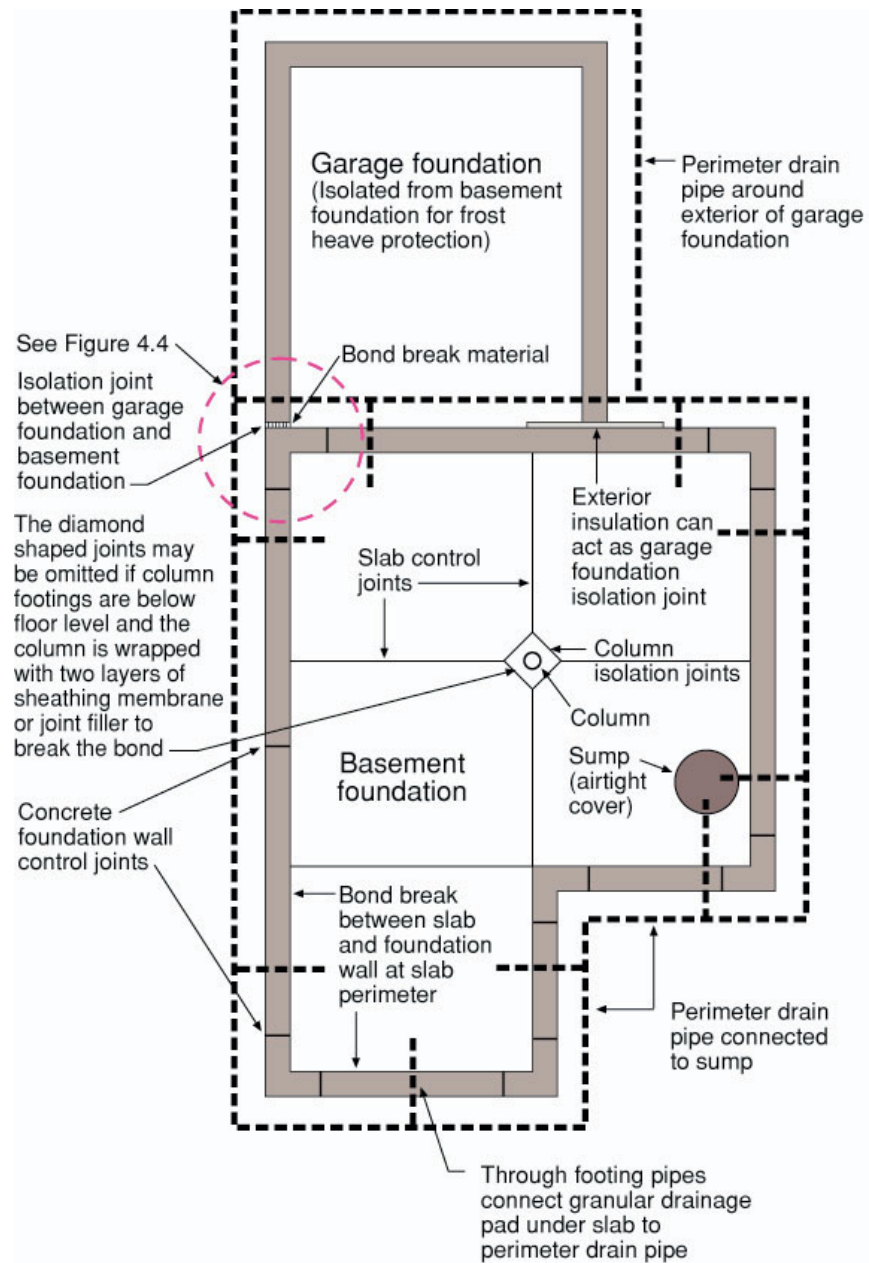
Diagonally cut 2 x 2's in forms provide goose neck joint



Saw cut joint



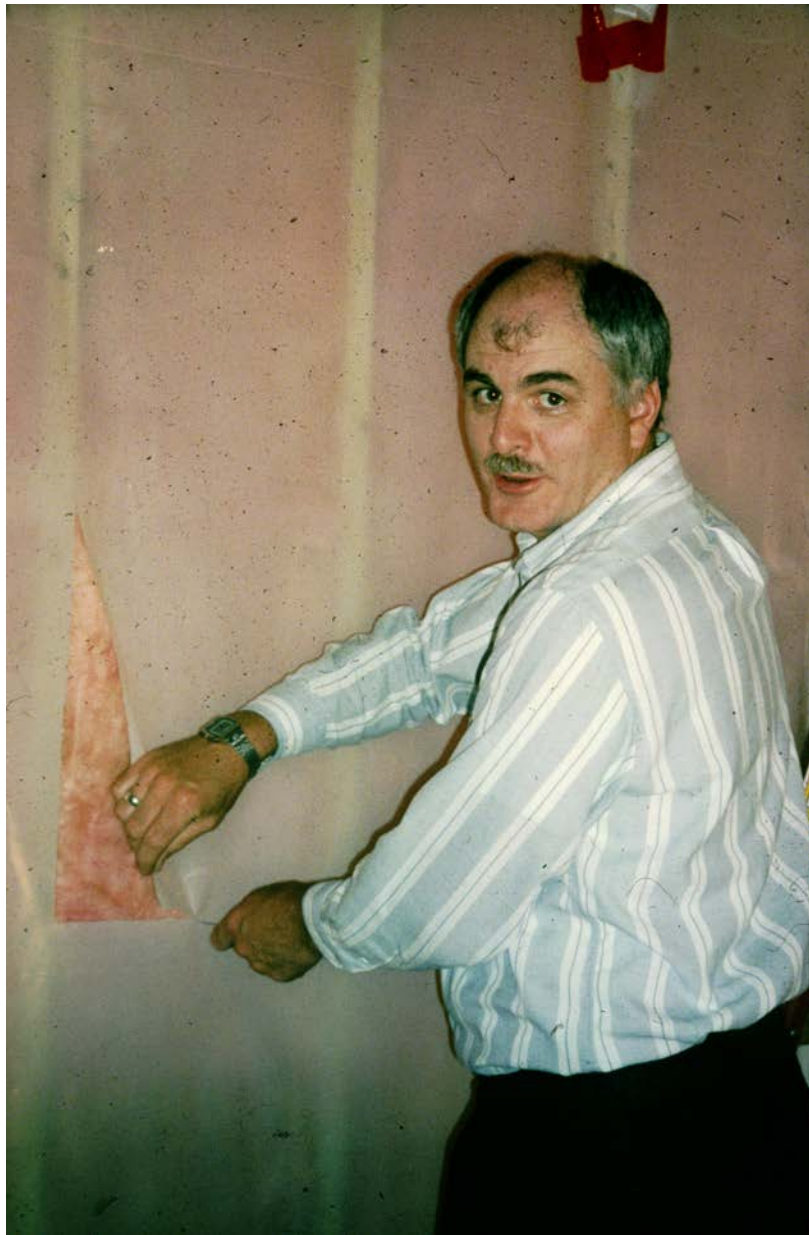












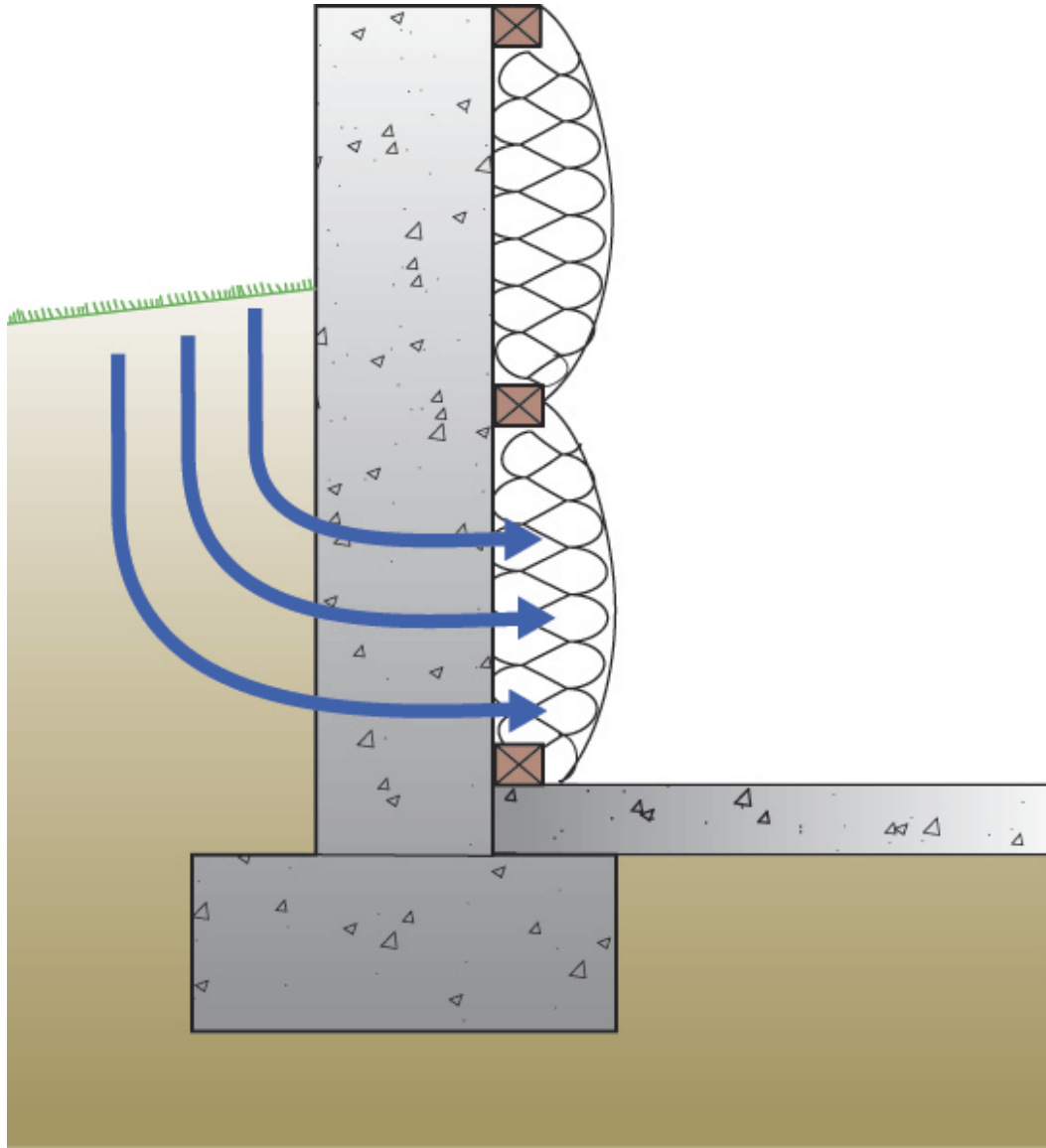


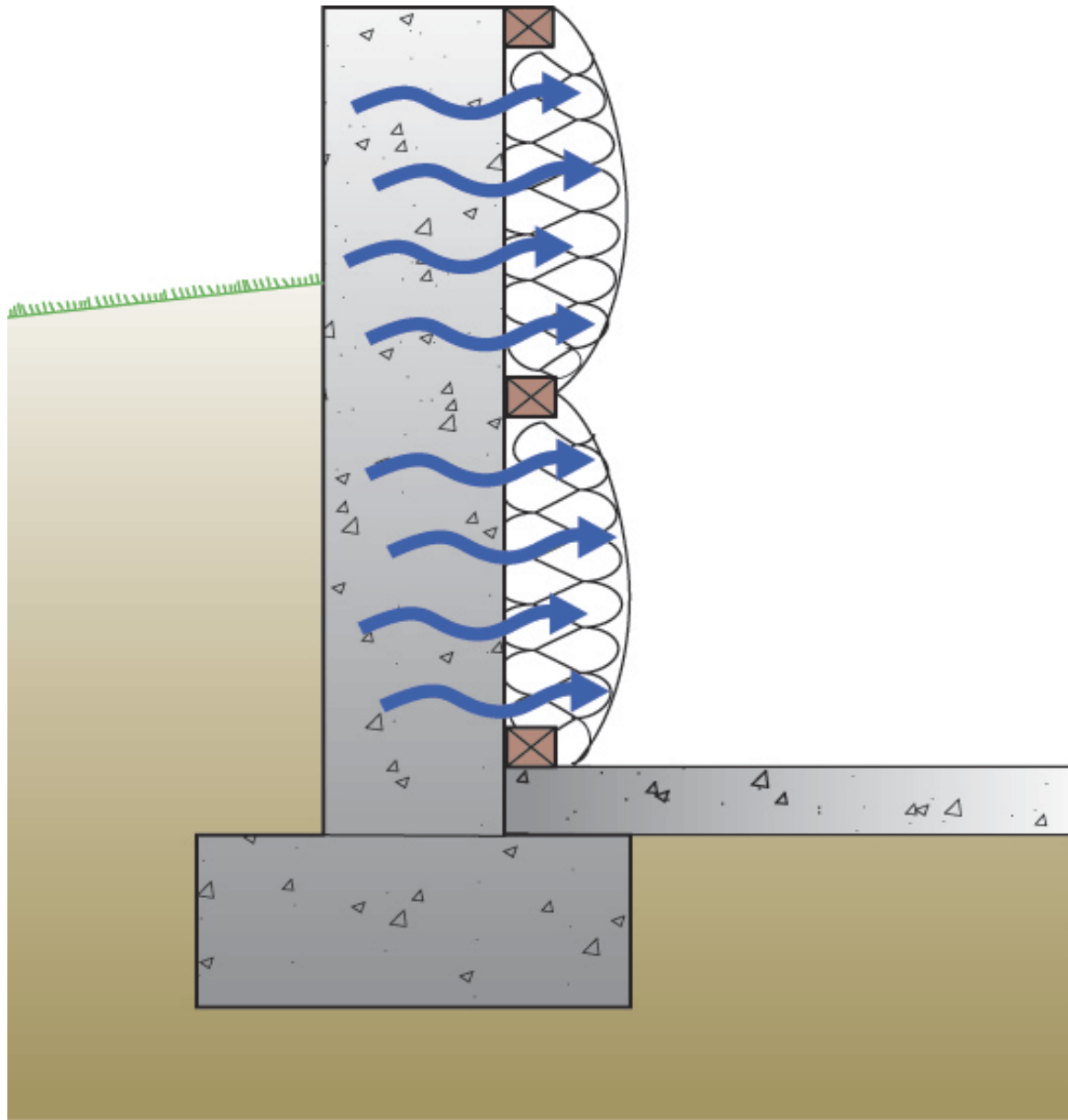


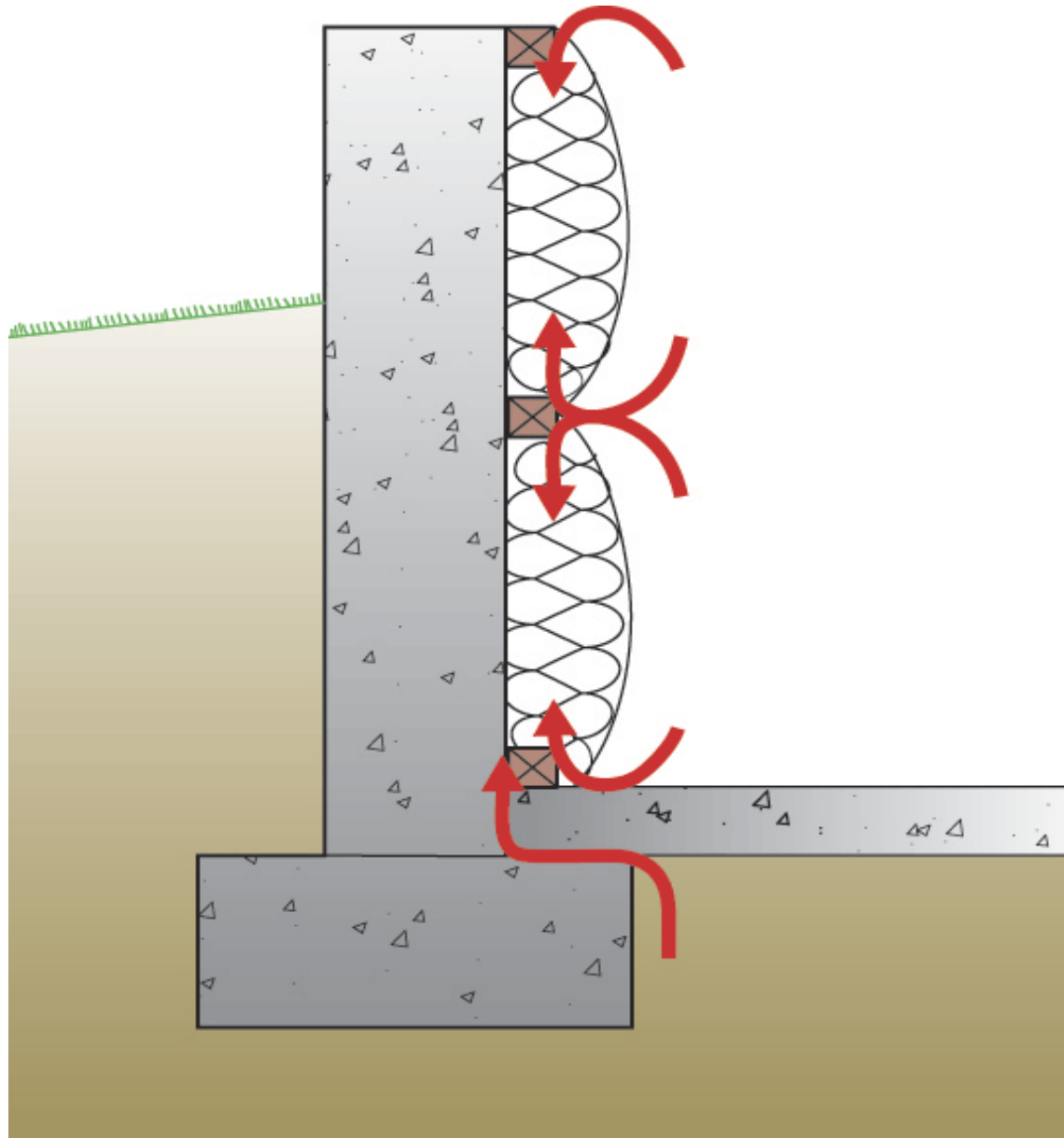


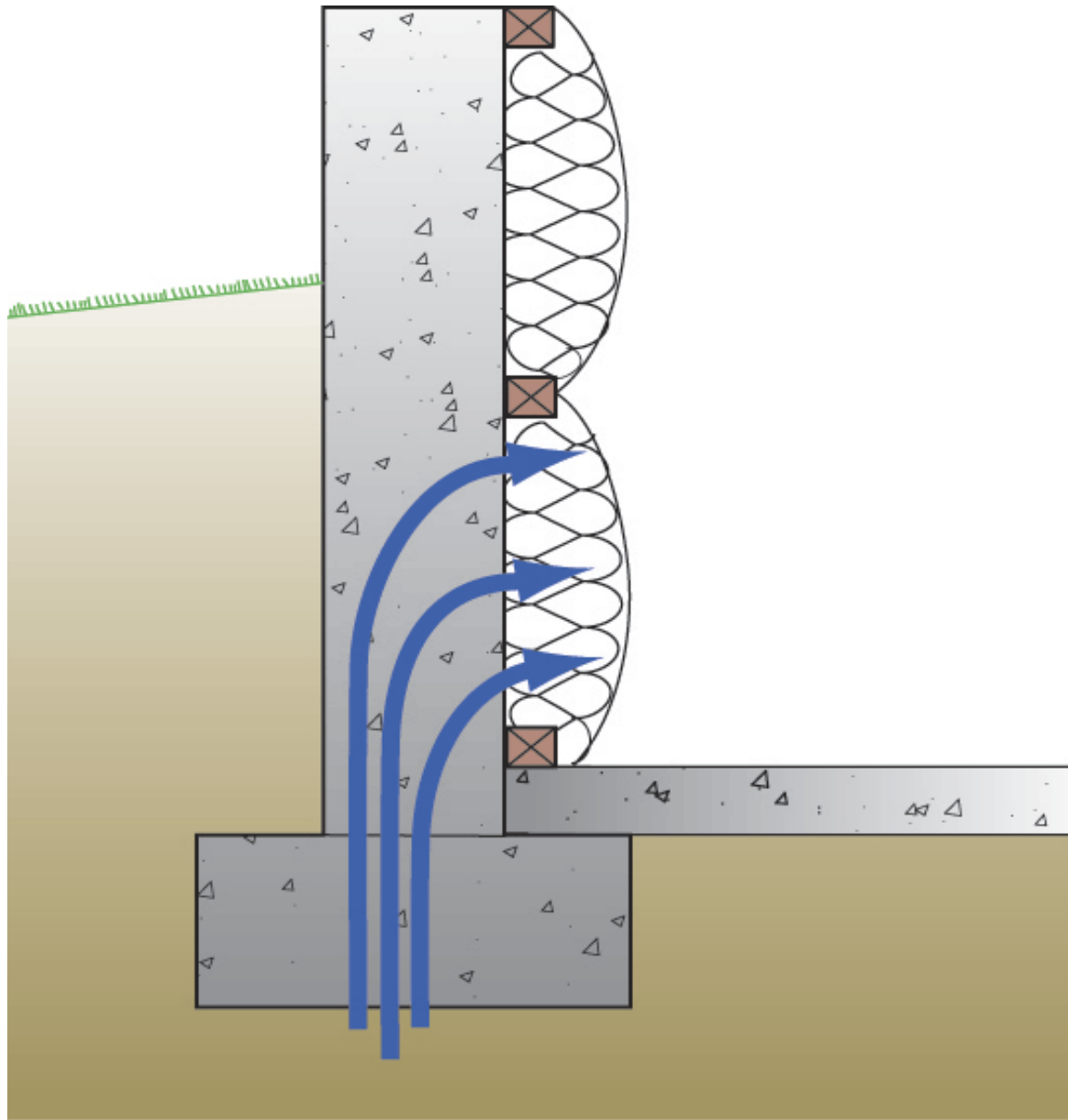




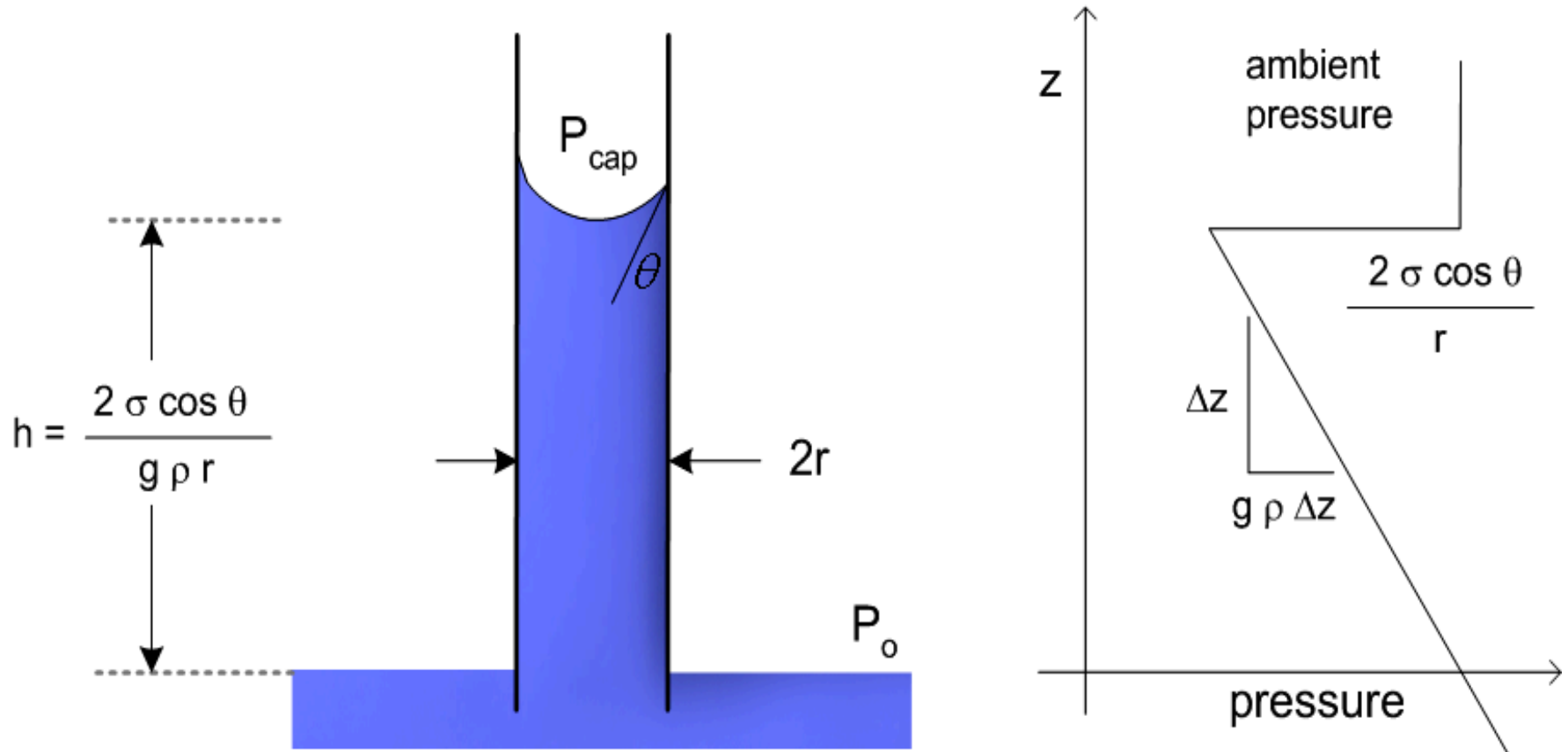




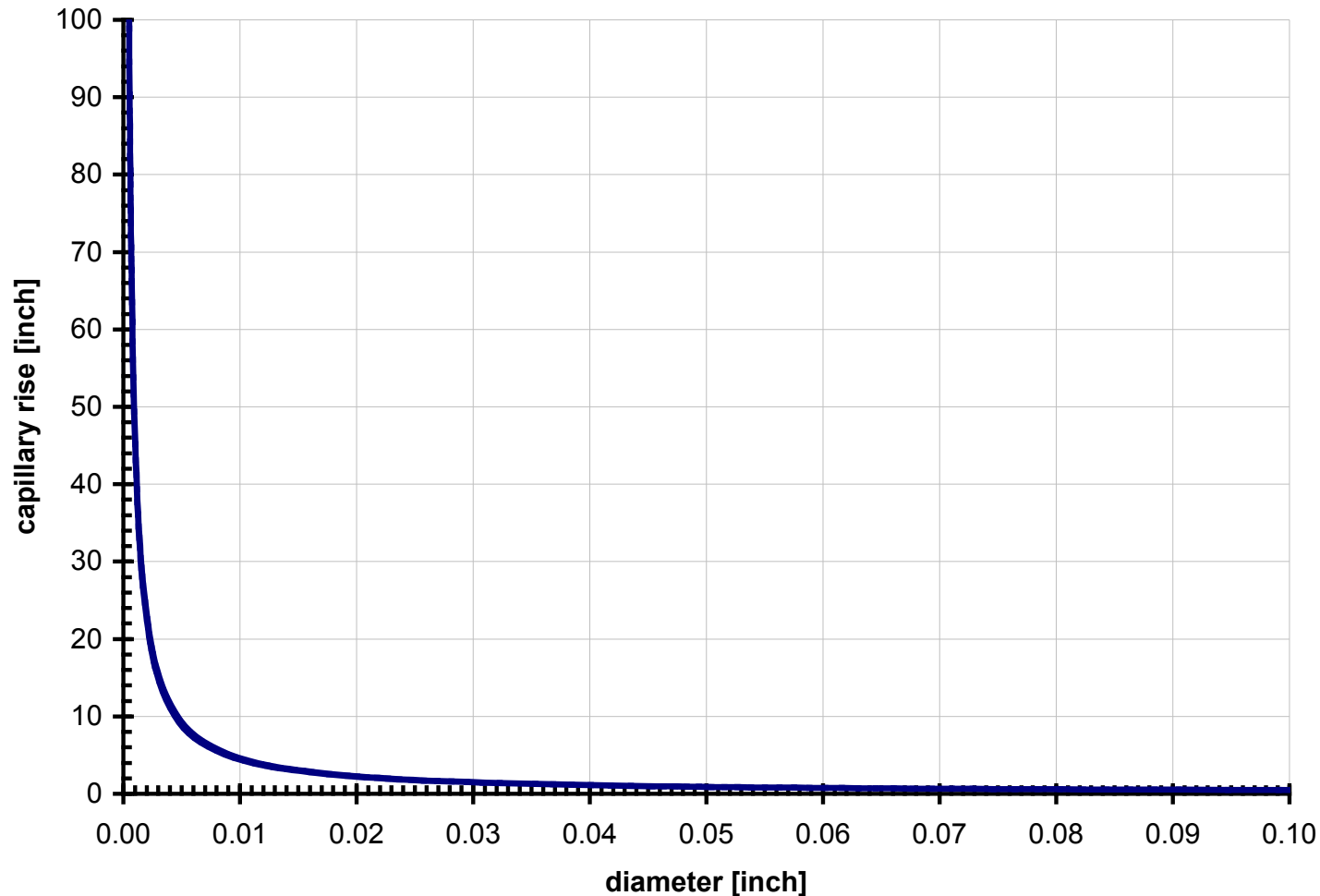




Calculating capillary rise

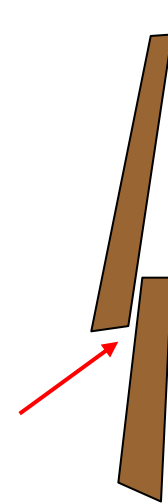


Capillary rise versus diameter



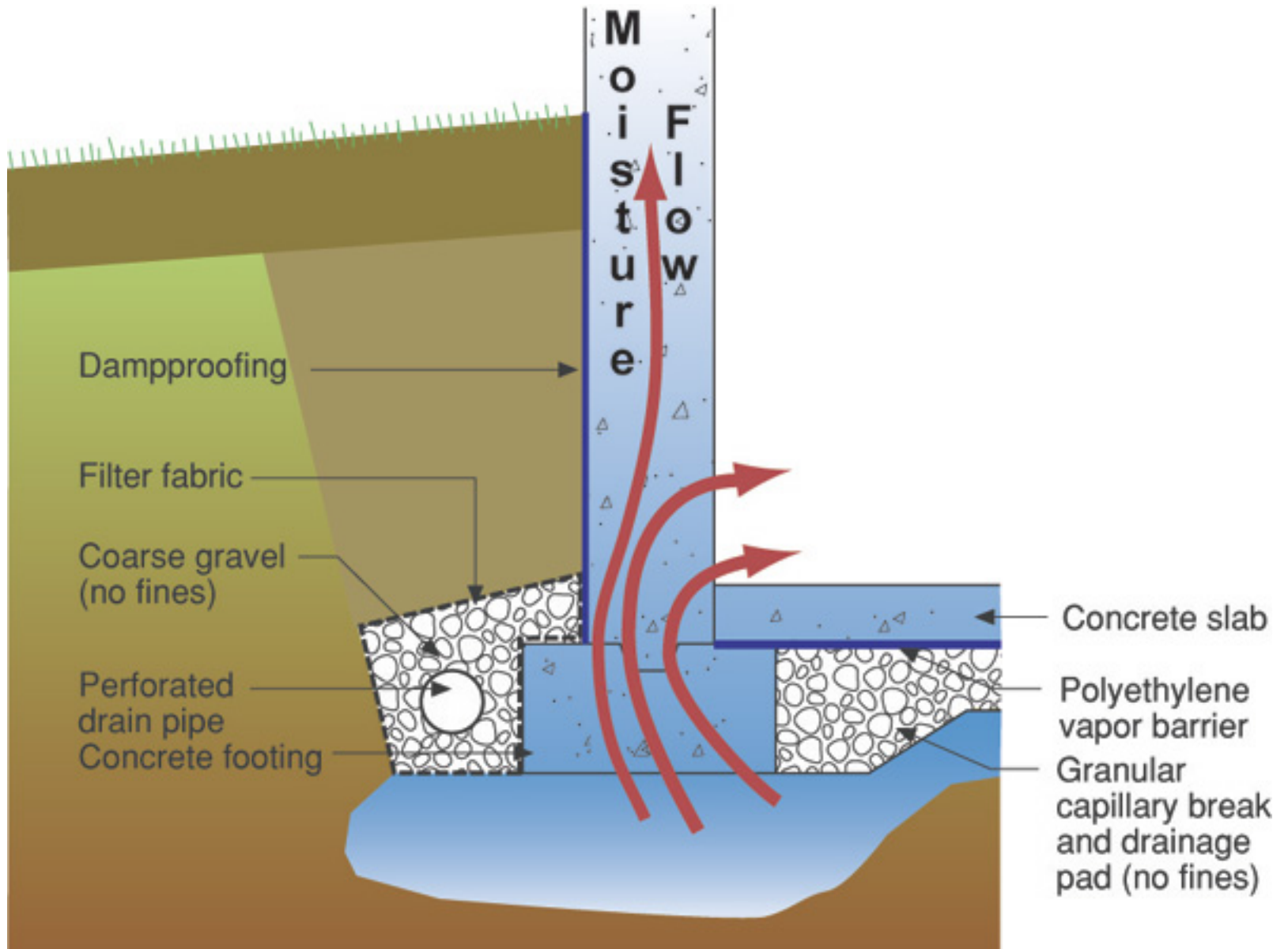
Capillary Flow

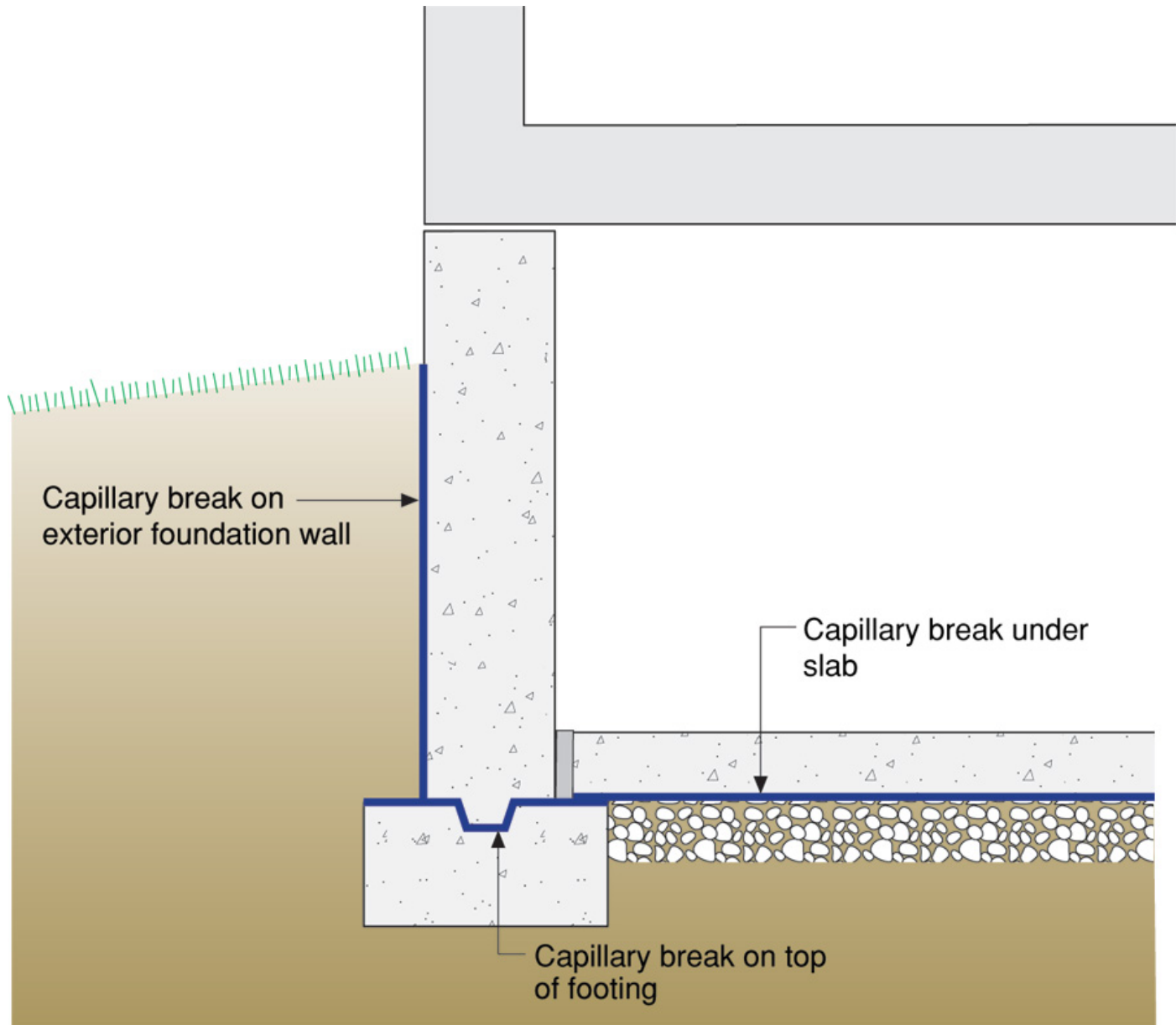
Siding laps

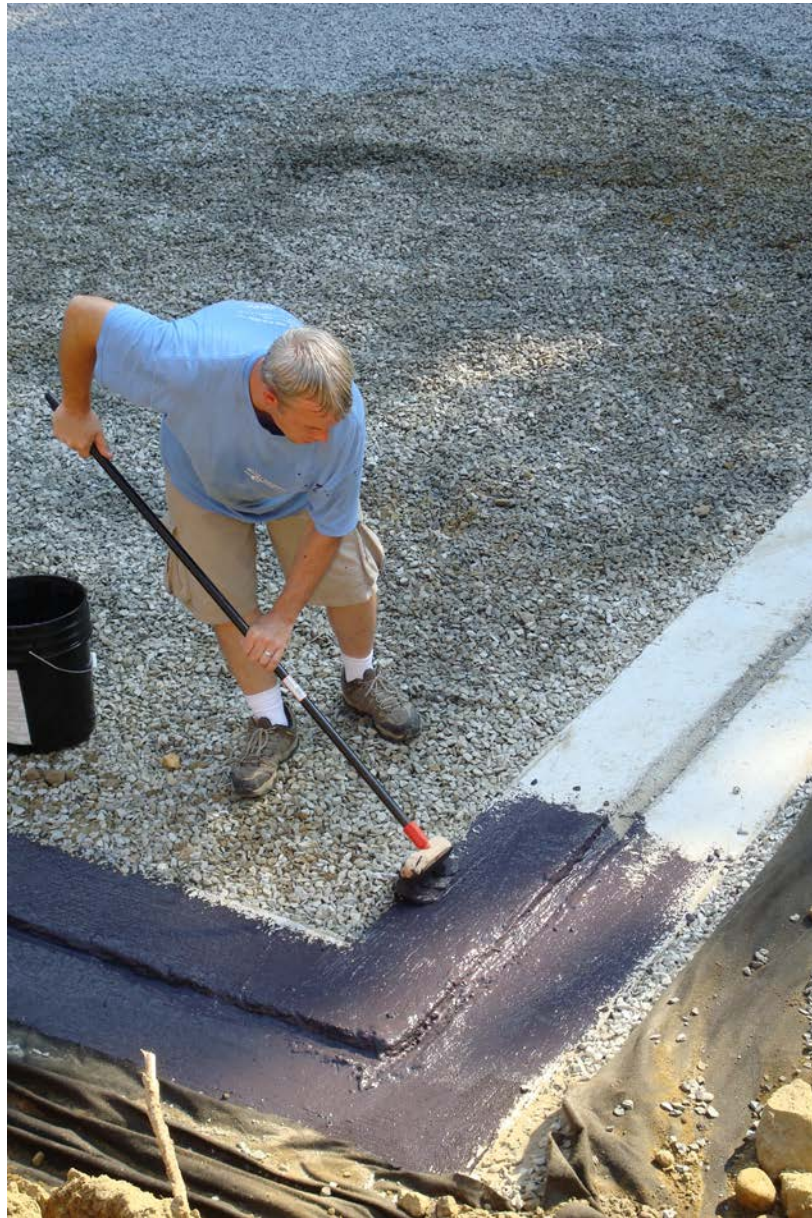


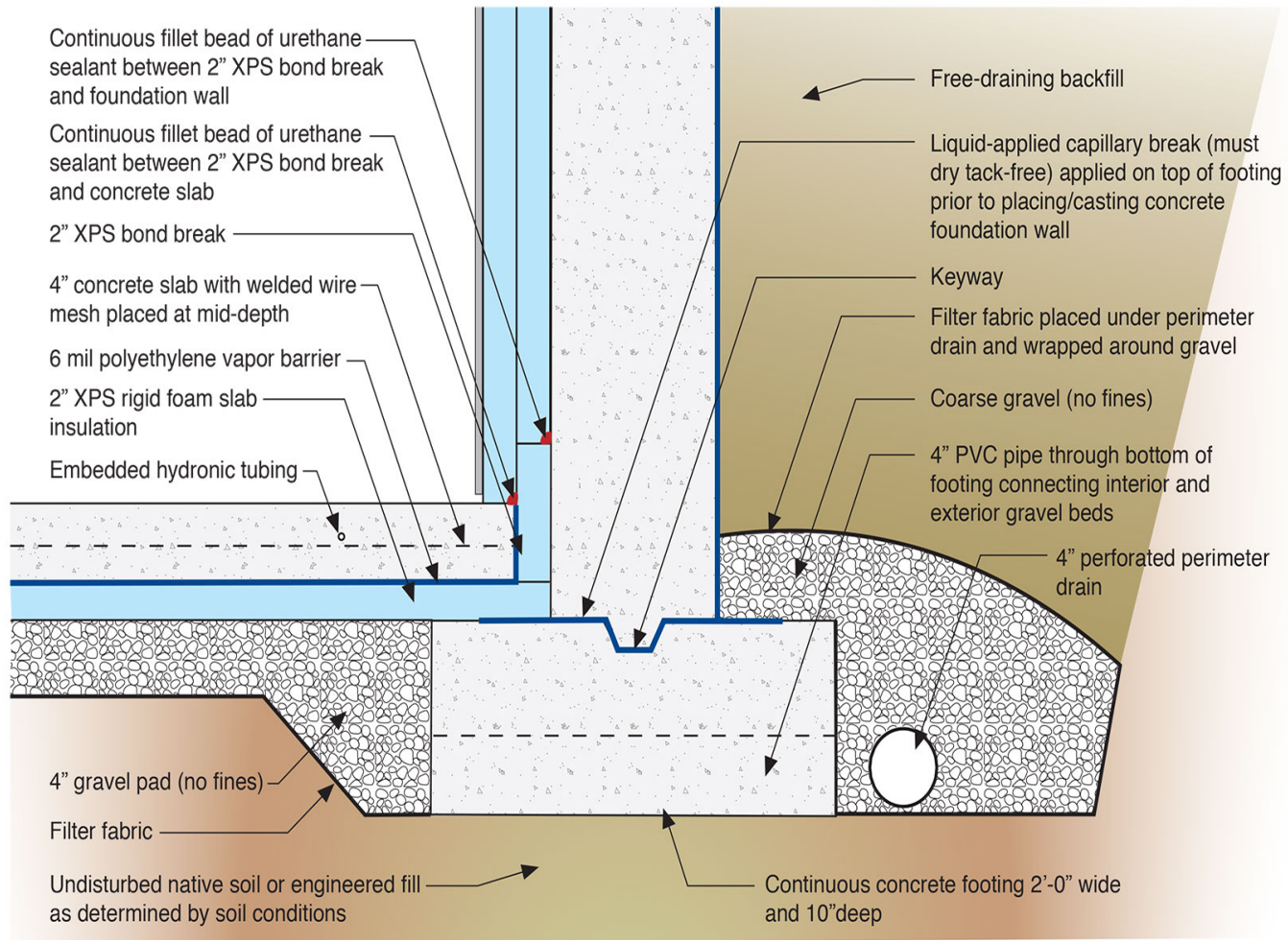












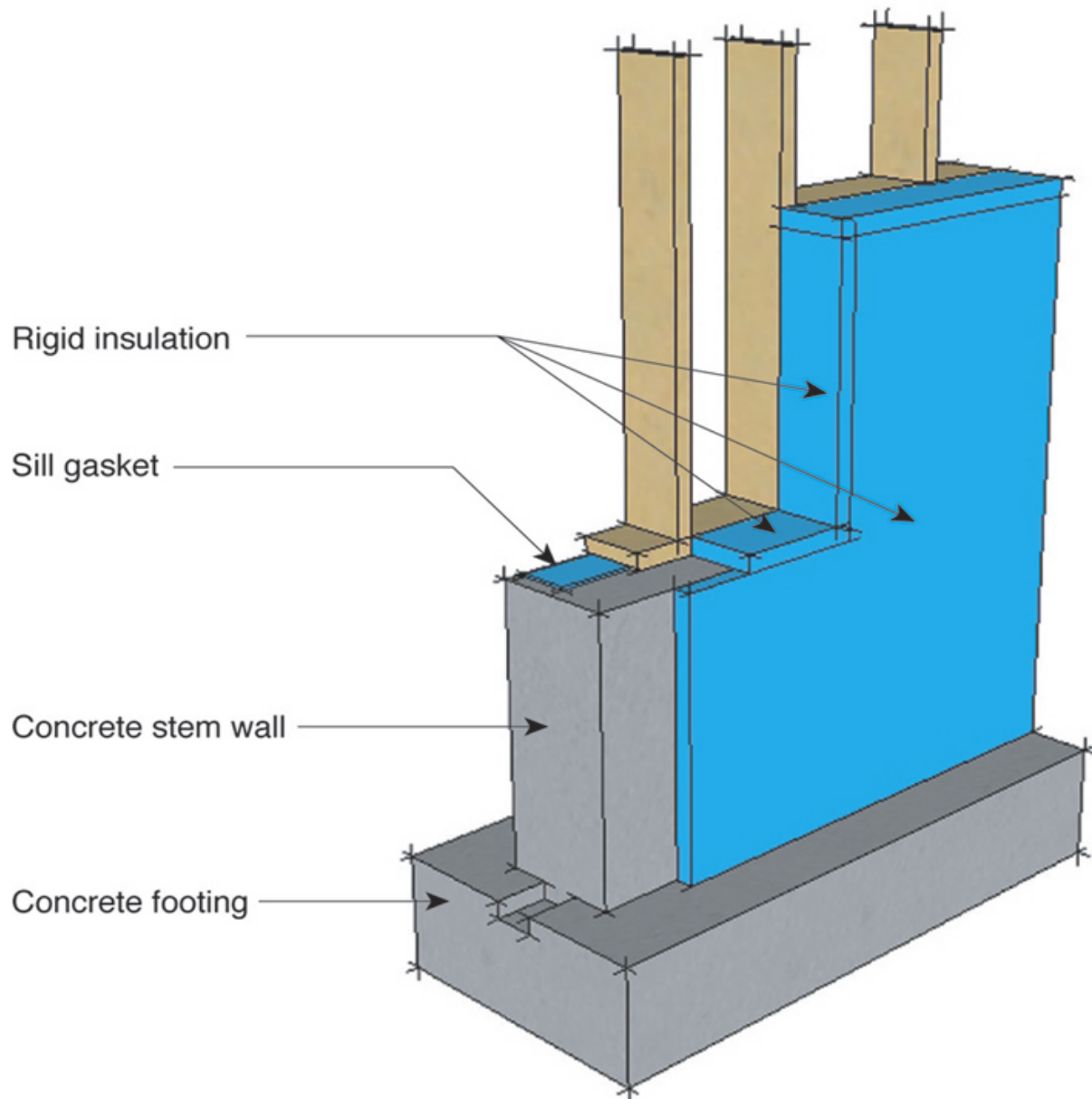


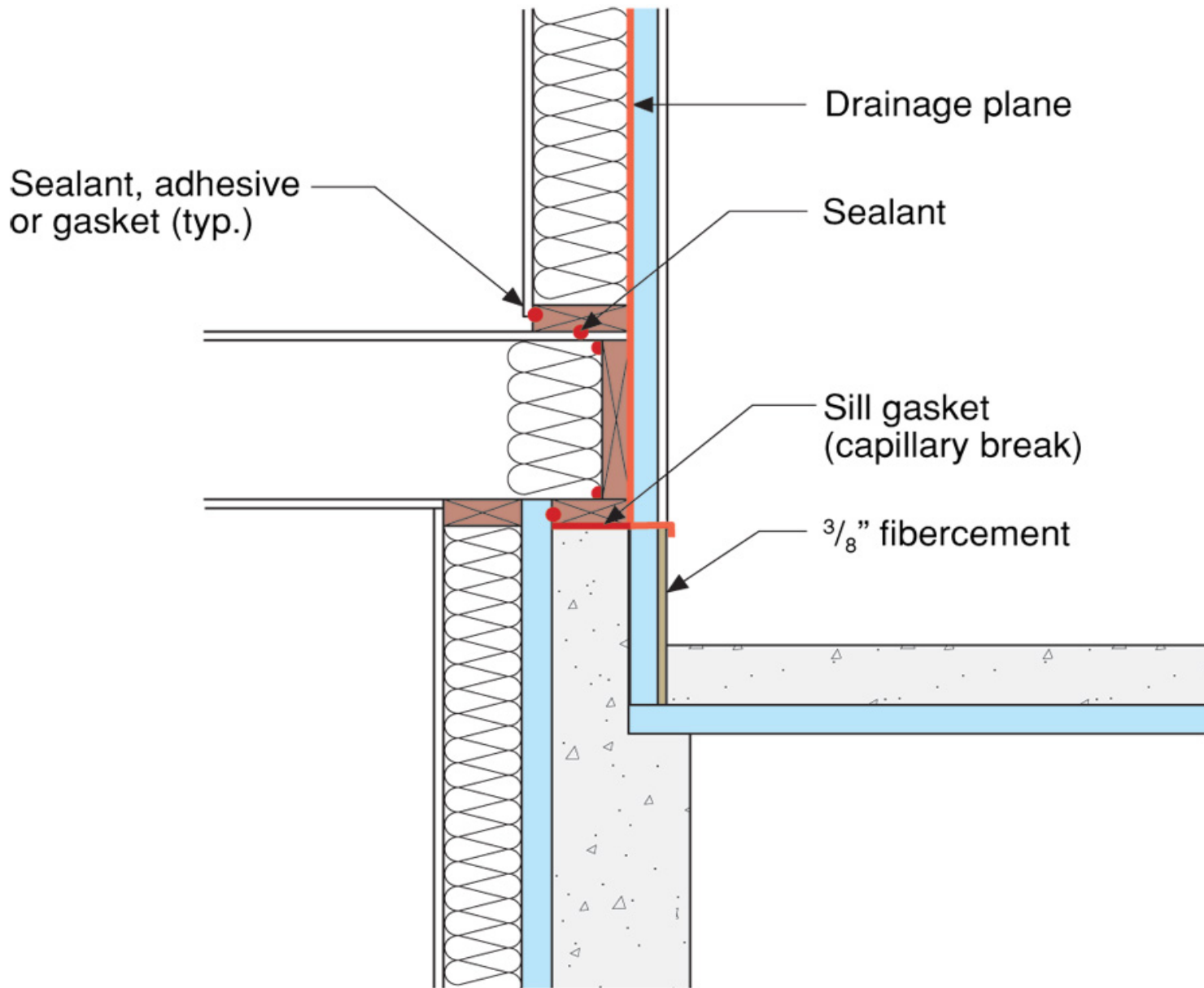


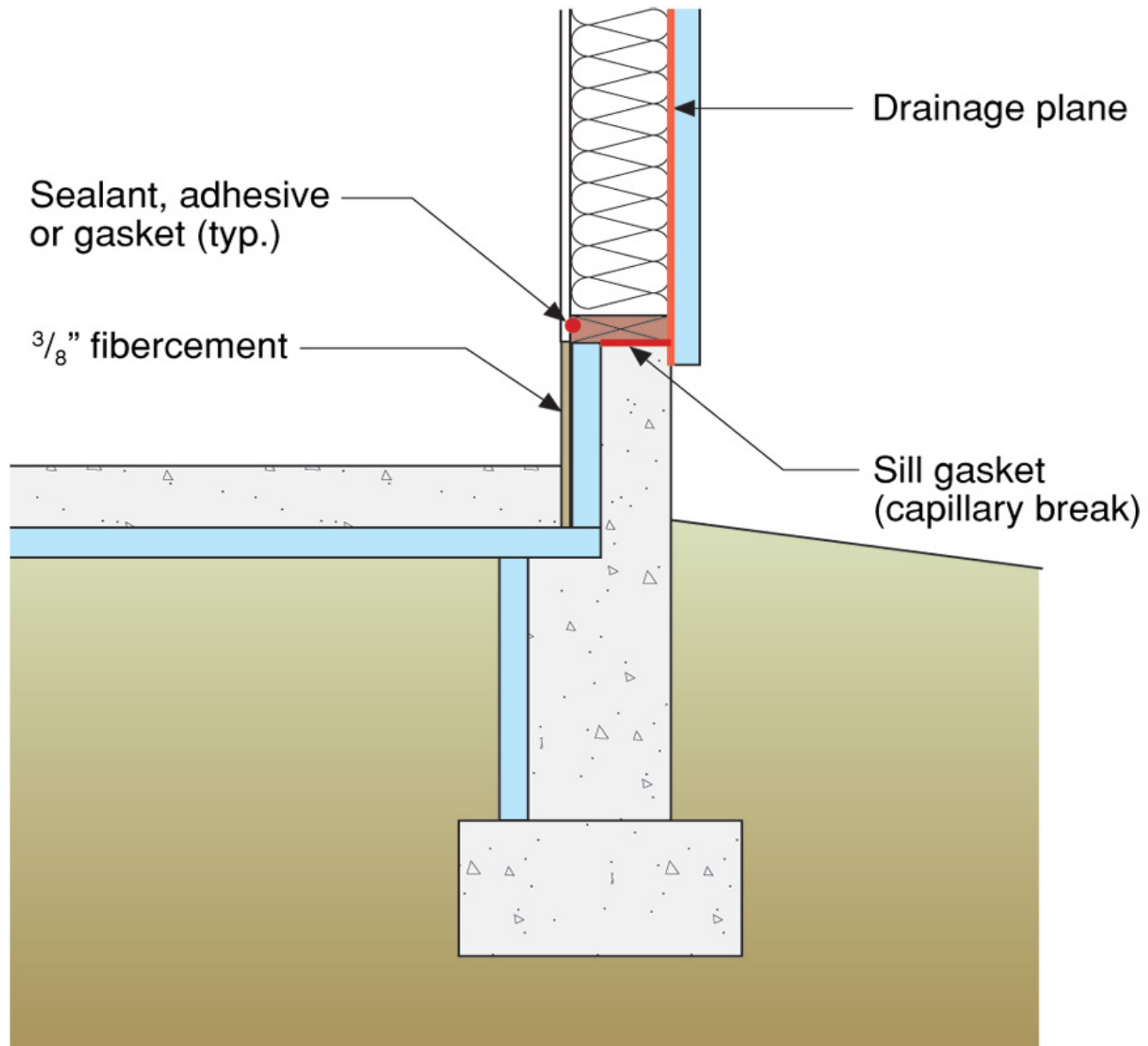


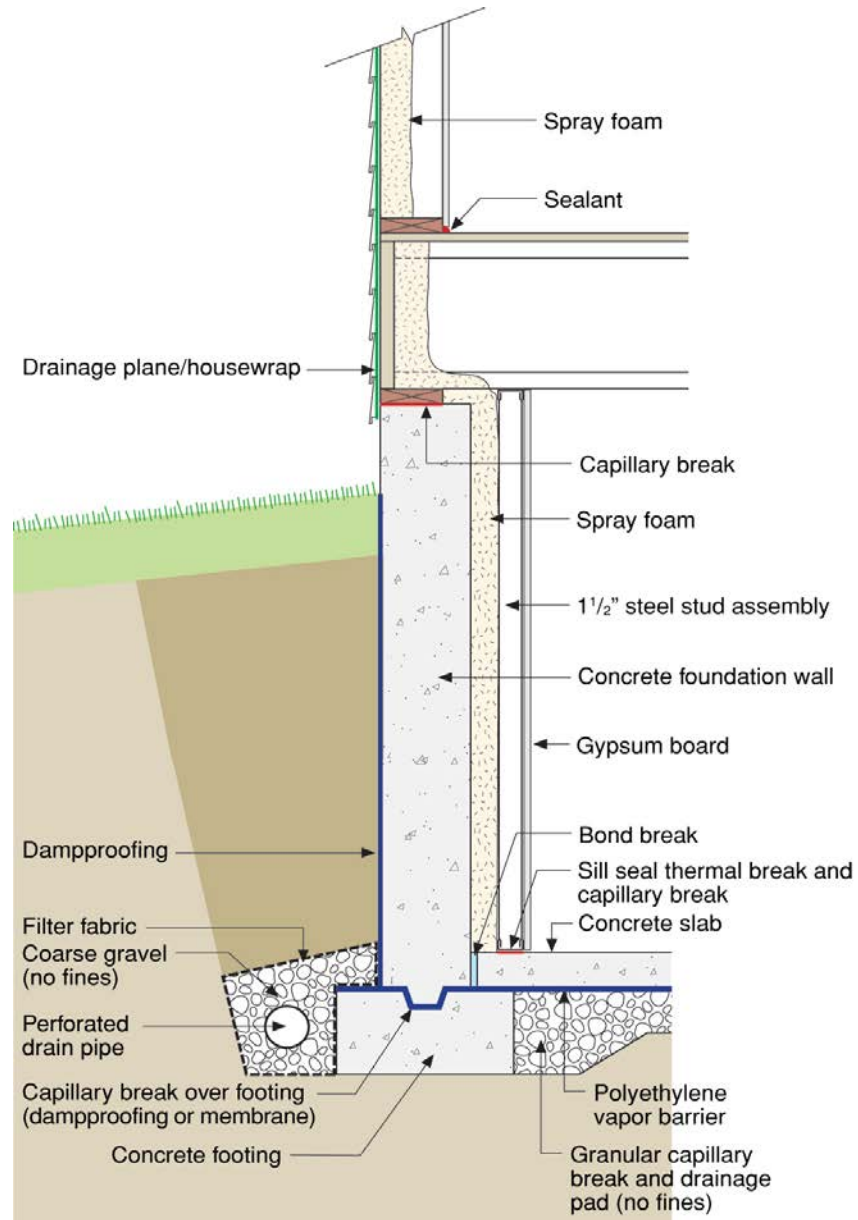






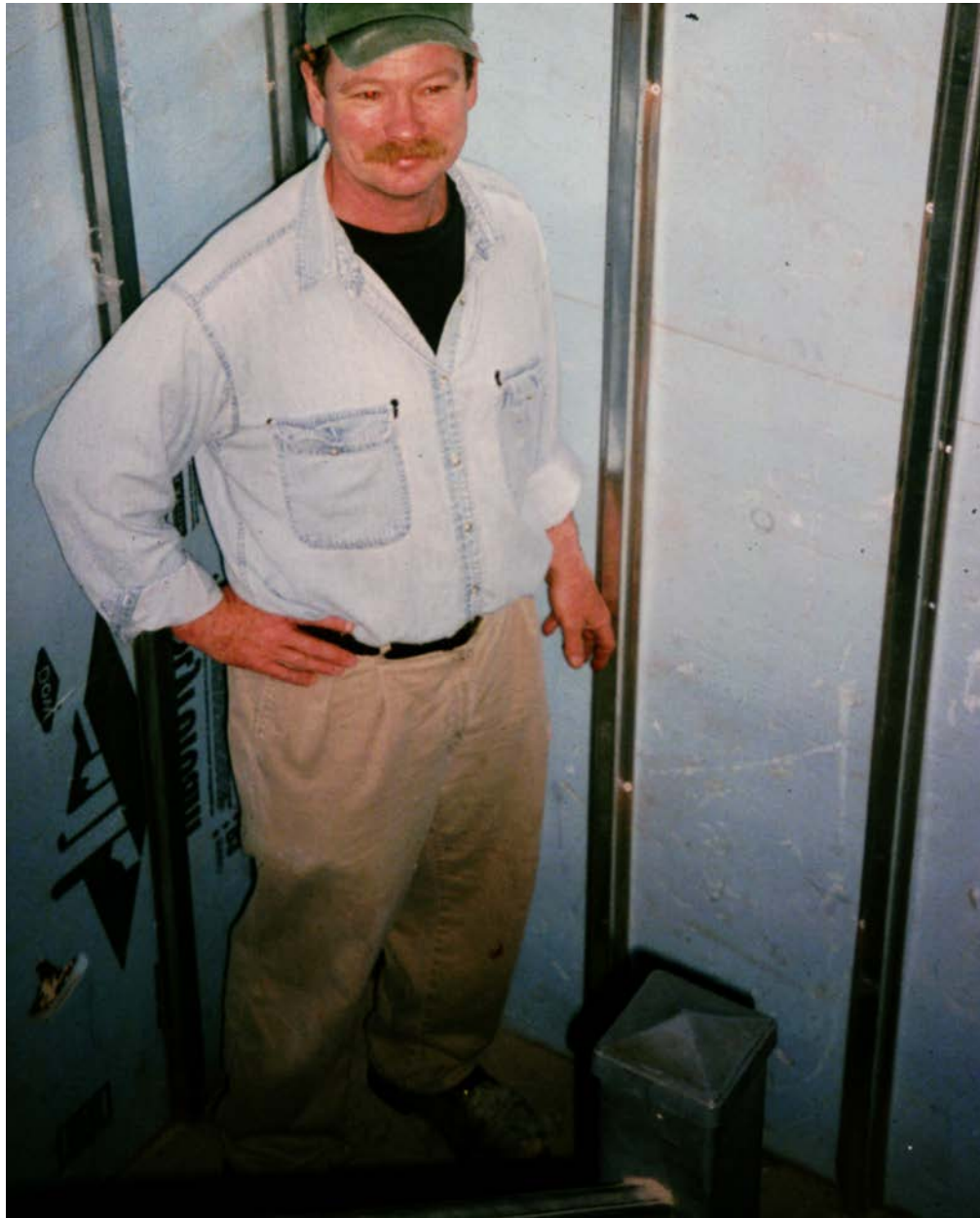




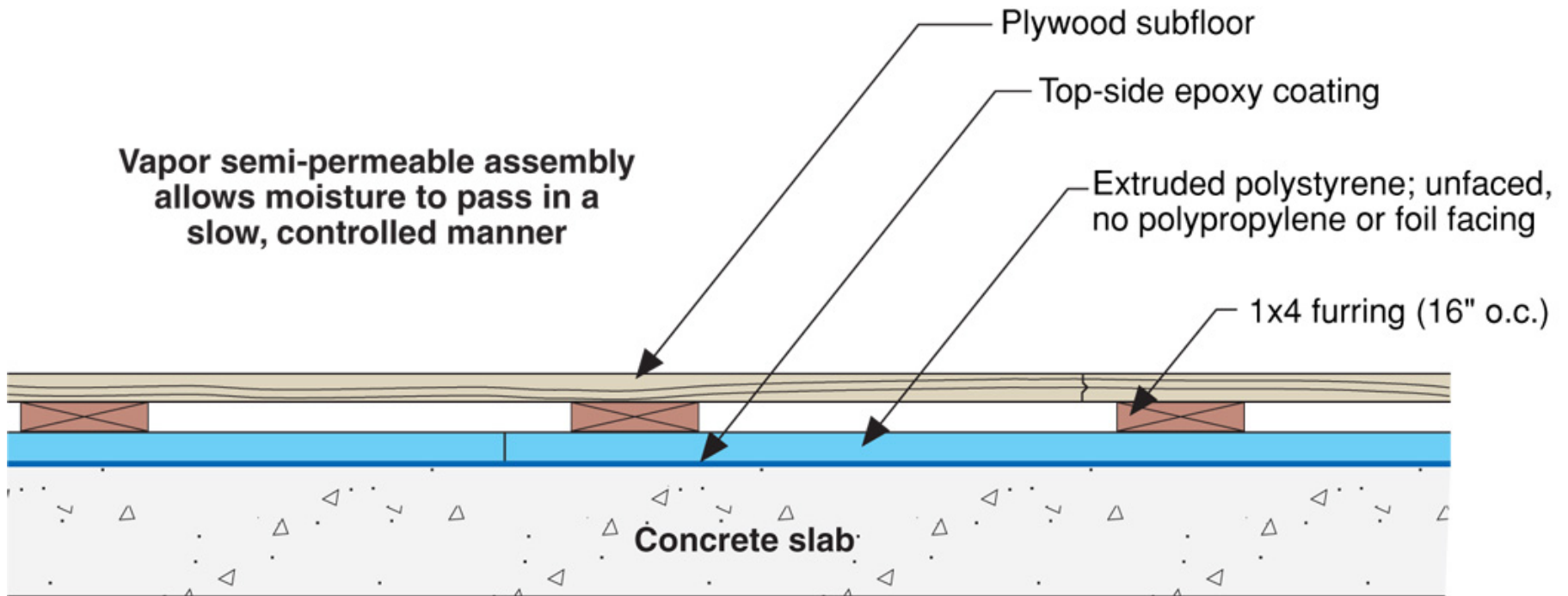








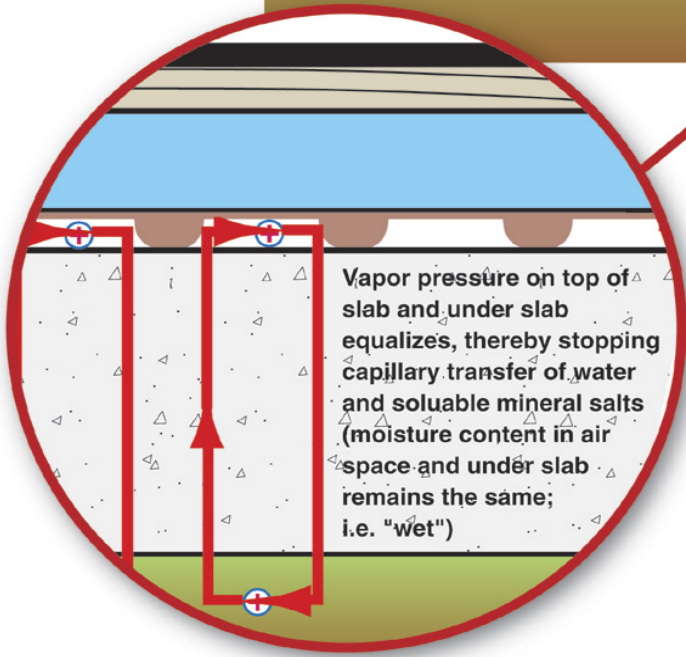
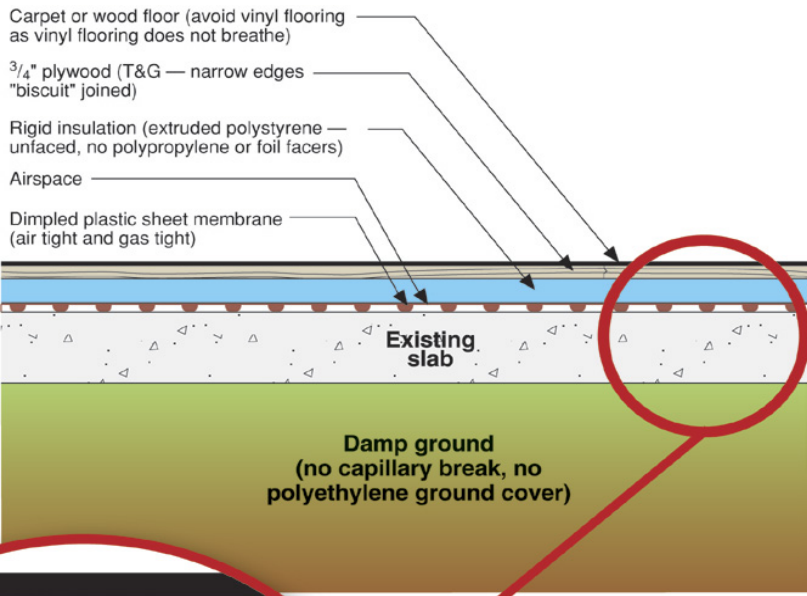
**Vapor semi-permeable assembly
allows moisture to pass in a
slow, controlled manner**











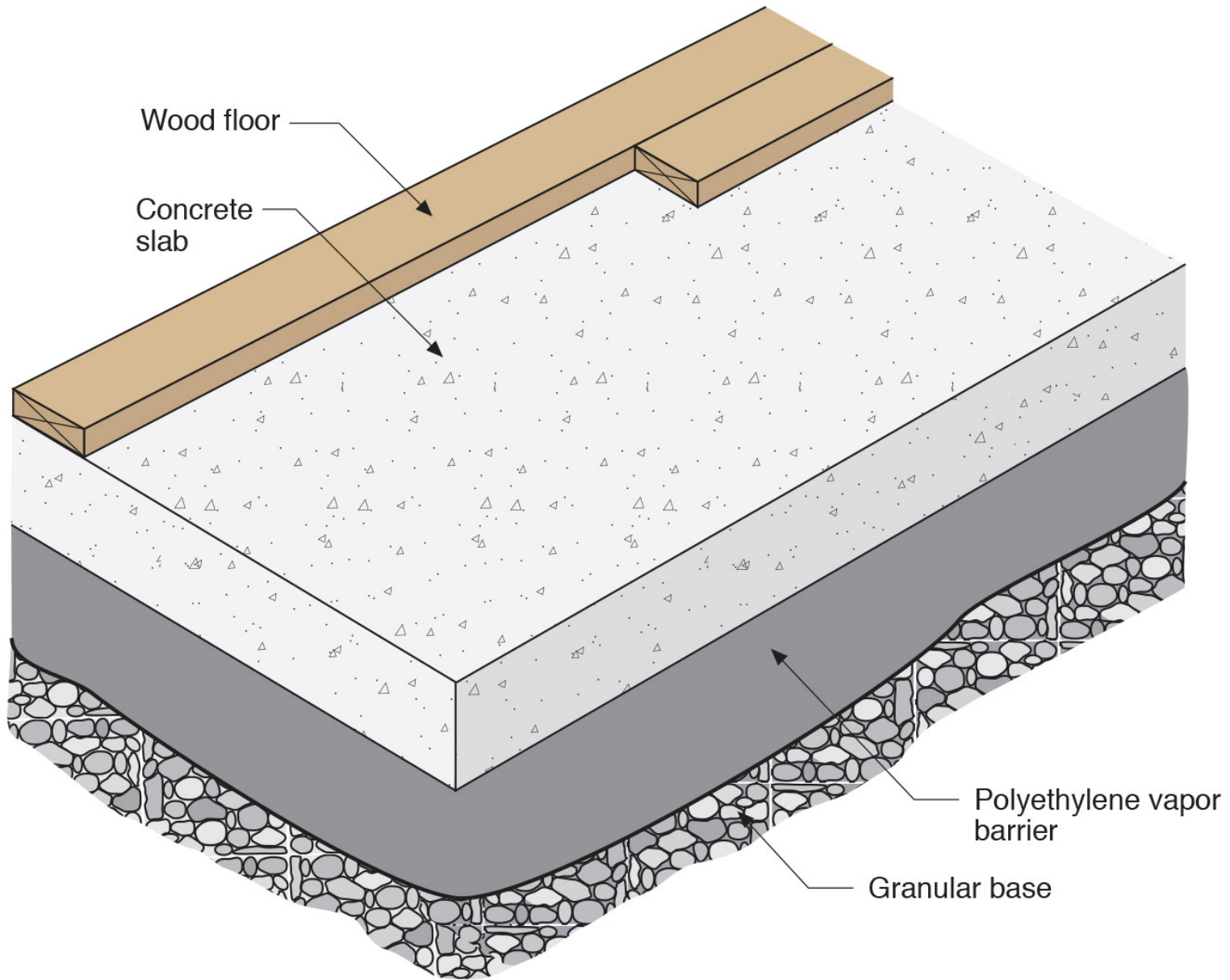


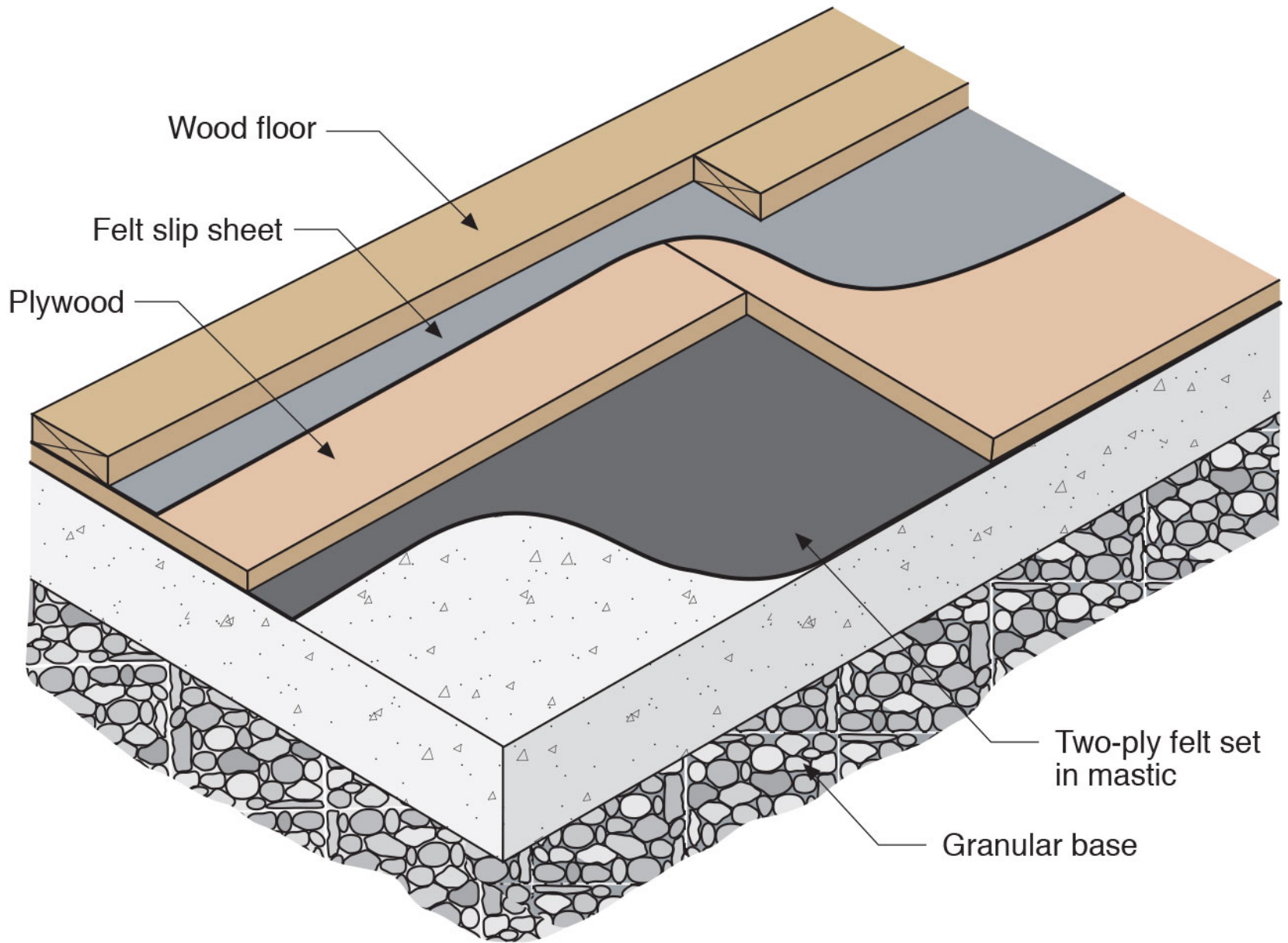




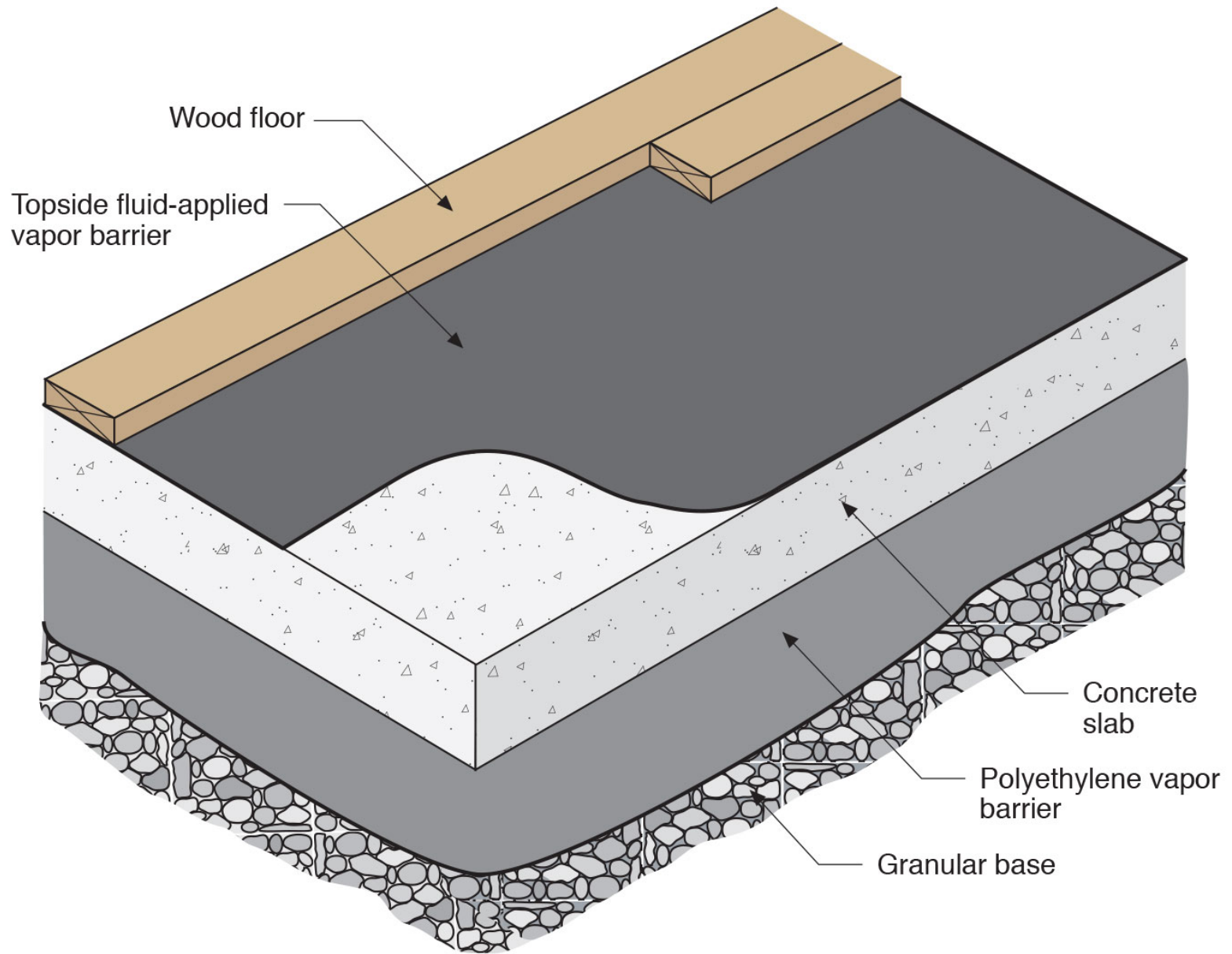






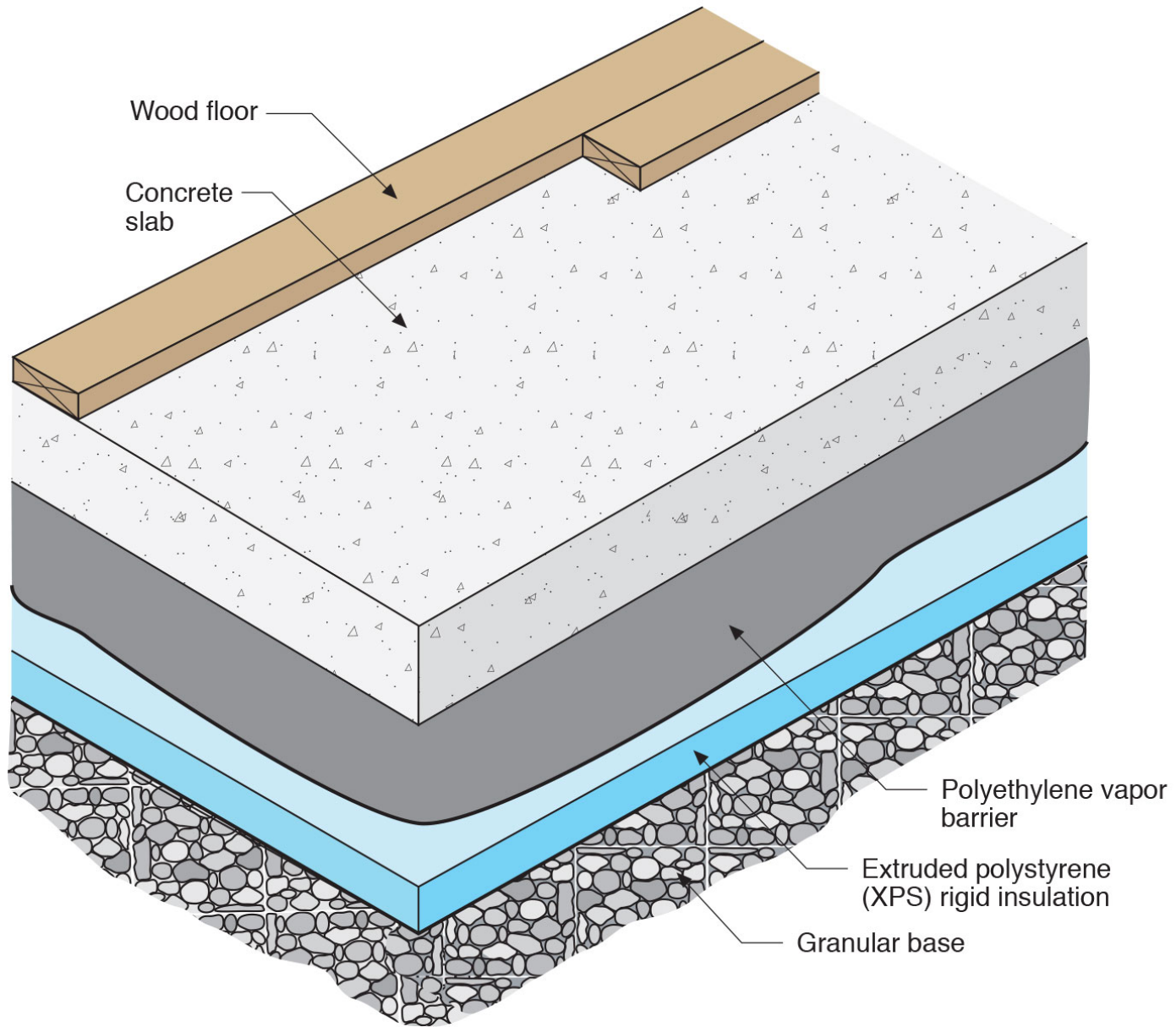


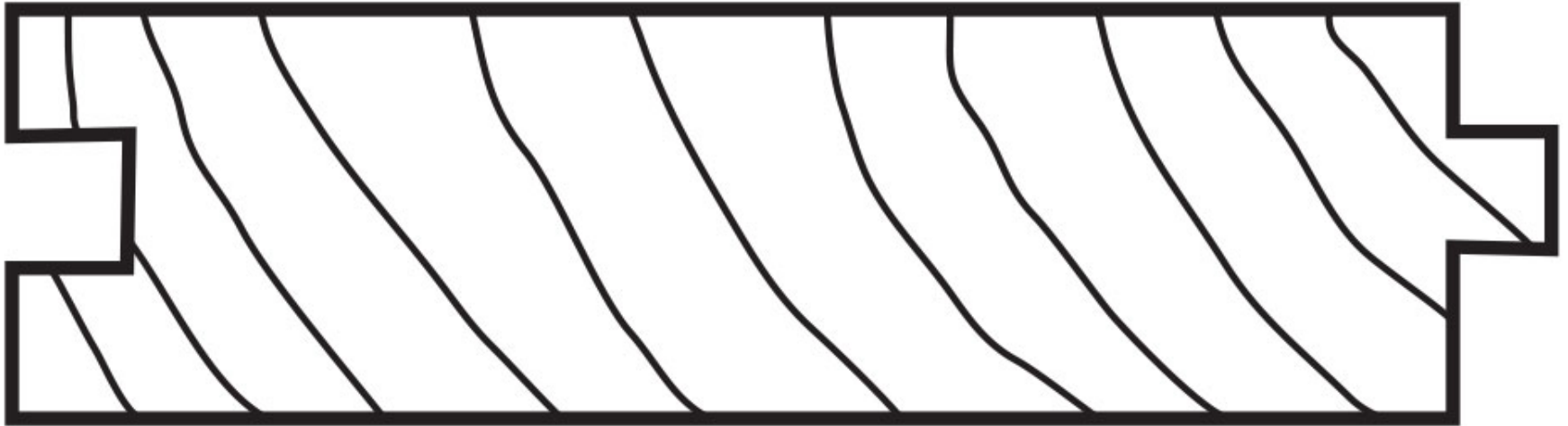












Plain



Hollow Back