

U.S. Department of Energy - Energy Efficiency and Renewable Energy Energy Savers

Crawl Space Moisture Control

To effectively [insulate your crawl space](#) for energy efficiency and to create a comfortable home, you need to properly control moisture in your crawl space.

A crawlspace is susceptible to moisture and deterioration problems because of contact with the earth. The best approaches for preventing these problems will depend on your local climate and the style of your home's construction. However, the following general guidelines for creating a water-managed foundation system apply to most crawl space designs:

1. Keep all untreated wood materials away from the earth.
2. Provide rain drainage, such as gutters, to conduct rainwater away from the house.
3. Slope the earth away from the house for at least 5 feet at a minimum 5% grade (3 inches in 5 feet). Establish drainage swales to direct rainwater around the house.
4. Add a sill gasket to provide [air sealing](#).
5. Install a protective membrane, such as an EPDM-type membrane, to serve as a capillary break that reduces wicking of water from the masonry wall. This membrane, in addition to metal flashing, can serve as a termite shield.
6. Damp-proof the below-grade portion of the foundation wall to prevent the wall from absorbing ground moisture by capillary action.
7. Install drainage plane material or gravel against the foundation wall to relieve hydrostatic pressure and channel water to the foundation drain.
8. Provide a foundation drainage system at the bottom of the footing, not on top, when the foundation floor (interior grade) is below the exterior grade. Surround a perforated 4-inch drain pipe with gravel, and cover them with filter fabric.
9. Install 6-mil polyethylene [vapor diffusion barrier](#) across the crawl space floor to prevent soil moisture from migrating into the crawl space. Overlap and tape all seams by 12 inches. Seal the polyethylene 6 inches up the crawl space walls. As an option, pour two inches (51mm) of concrete over this to protect the polyethylene from damage.

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Financing & Incentives

- [Find Federal Tax Credits for Energy Efficiency](#)
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Related Links

- [Facts about Ventilation and Moisture Control](#)
North American Insulation Manufacturers Association

Reading List

- *Weather-Resistive Barriers* ([PDF 223 KB](#)). (October 2000). DOE/GO-102000-0769. U.S. Department of Energy.
- "New Crawl Space Data." (August 2002). *Energy Design Update* (22:8); pp. 9-11.
- *Crawl Space Ventilation* ([PDF 223 KB](#)). (July 2004). Forest Products Laboratory.
- Jackson, D. (August 2000). "Practical Foundation Waterproofing," *Journal of Light Construction*. (18:11) pp. 65-69.