



## Conditioned Crawl Spaces



The construction of crawlspaces has gone through an evolution of building science that turns the conventional practice on its head. Venting a crawlspace can actually do more harm than good. It can compromise the durability of the house and create a health hazard for the occupants.



Is there a better way to create a warm, dry and mold-free crawlspace?

With a few minor changes to the current practice of venting the crawlspace, it is possible to prevent mold growth and wood rot, eliminate drafts, *and*, actually lower the home's utility bills.

The "best practice" for constructing a crawlspace is to make it as airtight as possible, to include a moisture barrier, and to deliver conditioned air into the space. Think of it as a shortened conditioned basement.

Here's how you do it.

- ▶ When blocking or pouring the concrete for the foundation, eliminate the vents that you would normally install.
- ▶ Make sure there is a tight seal between the mud sill and the top of the foundation by placing a sill sealer and expanding foam between the mud sill and the top of the foundation.
- ▶ Caulk the joints between the pieces of lumber making up the rim joist, then caulk or glue the entire rim joist to the mud sill.
- ▶ Glue and screw the subfloor on top of the floor joists and the top rim joist, so no air can work its way under the subfloor.
- ▶ To prevent drafts and moisture from getting into the crawlspace, use expanding foam to seal up any penetrations in the foundation walls, rim joist, or subfloor. These penetrations could include hose bibs or electrical services.
- ▶ On the floor of the crawlspace, create a moisture and vapor barrier by laying down sheets of polyethylene, 10 mm. or thicker, lapping them over each other with at least a 6-inch overlap.
- ▶ Tape the sheets together and seal them to the foundation walls with caulk, and secure to the wall a pressure-treated furring strip. This will create a continuous water and vapor barrier.
- ▶ Cover this barrier with a 2-inch concrete slab to keep it from being torn or moved during construction.
- ▶ Drape a perforated fiberglass blanket, with a minimum insulating value of R11, down the walls and attach them

to the rim joist and staple them to the underside of the subfloor and the furring strip.

- ▶ Make sure the batts fit snugly together and add additional insulation to the rim joist for a continuous plane of insulation from the subfloor to the crawlspace floor.

Traditionally, crawlspaces are insulated and have vents that allow air to pass through, keeping them cool in the summer and warm in the winter. But this can result in significant problems.

During the summer, when warm moist air enters the cool crawlspace, moisture can condense, leading to mold and wood rot. Insulating the walls of the crawlspace, sealing up penetrations and creating a moisture barrier will give homeowners a safer and more durable home from the ground up.