

Minnesota Energy Code Takes on Backdrafting

Once again, Minnesota's residential energy code is blazing new territory. The latest version of the code, which took effect on April 15, 2000, includes new requirements intended to prevent the spillage of combustion by-products from atmospherically-vented appliances. The depressurization standard is intended to account for exhaust fans and clothes dryers when calculating the amount of outdoor air required for ventilation and makeup.

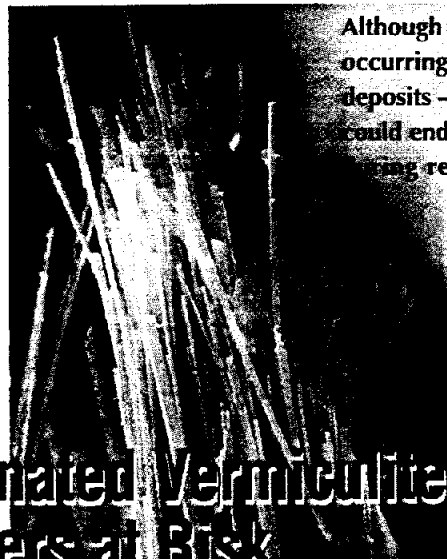
This requirement is the latest addition to Minnesota's strict energy code, which requires mechanical ventilation in all new homes (see *Notebook*, 12/98). Minnesota's

first-in-the-nation depressurization standard is not simple. "We didn't do builders a favor by writing the code as complicated as we did," admits Bruce Nelson, a senior engineer at the Minnesota Department of Commerce.

Builders have six options for compliance, including four prescriptive options, one "aggregate" option, and one performance option. Factors affecting whether or not powered makeup air is required include how many exhaust appliances a house has, and whether the house has depressurization-tolerant, sealed-combustion appliances, or depressurization-intolerant, atmospherically vented appliances.

"Why haven't mechanical codes been addressing depressurization?" asks Nelson. "It is amazing that this depressurization problem has gone on this long. We felt that houses shouldn't be made any tighter until ventilation and depressurization are addressed."

Late last year, the *Seattle Post-Intelligencer* ran a series of investigative reports on a serious health hazard associated with vermiculite, a granular mineral that was once a popular loose-fill insulating material. Vermiculite from a mine in Libby, Mont., owned by the W.R. Grace Co., was found to be contaminated with a particularly toxic form of asbestos. (Vermiculite from other sources — including another Grace-owned mine in South Carolina — is thought to contain little or no asbestos.) Nearly 200 mine workers and



Although vermiculite itself is non-toxic, naturally-occurring asbestos fibers present in some vermiculite deposits — as in this electron microscope image — could endanger builders exposed to the material during remodeling work.

Asbestos-Contaminated Vermiculite May Put Remodelers at Risk

Libby residents have died from asbestosis, while hundreds of other cases have been diagnosed. Railroad workers who handled ore-filled boxcars have also been affected, as have workers at a lawn-care products company who were exposed to vermiculite used in potting soil.

So far, there are no reports of similar illnesses among builders. But because hundreds of thousands of homes nationwide are thought to contain vermiculite insulation from the Libby mine (which was sold under the trade name Zonolite, until the company stopped producing it

in the early 1980's), the material is a potential threat to both homeowners and remodelers.

How serious is that threat? So far, at least, that seems to depend on which government agency you ask. "Vermiculite is not asbestos," says Tom Marples, of OSHA's Office of Construction Services. "Under the OSHA regulations, it's considered a nuisance dust."

The EPA, on the other hand — which has taken the lead in investigating the situation in Libby — suggests that vermiculite should be approached with caution. "Our

advice is that vermiculite should be treated like any suspected asbestos-containing material," says EPA spokesperson Lauren Mical. "It should be tested by a qualified lab, and if it's found to contain more than one percent asbestos, no one but an asbestos abatement contractor should handle it."

Much of the vermiculite from the Libby mine appears to contain from one percent to five percent asbestos by weight. But according to EPA technical expert Sam Vance, testing for asbestos has some built-in uncertainties. Because the asbestos tends to occur as compact bundles, he explains, one particle of vermiculite might be laden with fibers while another nearby might contain none.

Vance believes that anyone venturing into the presence of vermiculite even briefly should wear disposable hooded coveralls and a respirator with a HEPA cartridge. "You don't want to stir this stuff up," he says. "The particles are so light they can remain airborne for years, and it doesn't take many of them to kill you."