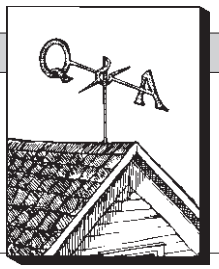
Are Metal Chimneys Safe?



by Hank Spies

Q. *We were recently required to remove an insulated metal chimney due to a town ordinance prohibiting all non-masonry chimneys. Apparently some condominiums with metal chimneys had burned in the area. We were told that the chimneys were enclosed in wood that was the recommended 2-inch distance from the flue, but that a vent that allowed air to circulate in that space had been closed. The manufacturer tells us that its insulated metal chimney is at least as safe as a masonry chimney. What is your opinion?*

A. I agree with the manufacturer. If an insulated metal chimney meets the required specification and is installed according to the manufacturer's instructions, it should be as safe as a masonry chimney. There is a good possibility that the flues that caused the problem were triple-wall flues rather than insulated flues, and that the blocked air flow between the concentric pipes caused the problem.

Misalignment, either in construction or as the result of settling or wood shrinkage, could have been a contributing factor. I have seen apartment buildings where the chimney housing rested on the masonry fire wall on one edge and on the wood frame on the other, and the wood shrinkage tipped the enclosure enough to pull the flues out of alignment.

This sounds like a case where all metal flues were condemned because of one that was not installed properly. A badly installed masonry chimney can be just as dangerous—for example, when mortar rather than fire clay is used to seal between the clay tiles.

Keeping Paint on Metal

Q. *What is the best way to paint galvanized sheet metal on the exterior? What prep work and what type of paint should be used?*

A. If you want sheet metal painted, buy it painted from the factory. I know of no dependable way to prepare galvanized metal that will make it hold paint. The gutters on our building were carefully acid-pickled and painted more than 20 years ago, repainted several times, and are still peeling. Zinc-rich paints were no better than conventional trim paint. I have heard that a cement-based paint might work but have not tried it. The one thing that did seem to stick well was the oil-based stain used on the siding—but I would not guarantee it.

Redwood Woes

Q. *How abundant is the supply of California redwood? Is this a rapidly shrinking wood resource?*

A. The supply of California redwood is indeed limited. But how limited depends on the philosophy of the person you ask, since most of the redwood standing lies inside the National Forests. The shortage of redwood is the main reason for the appearance of so much sapwood in the redwood now available. The light-colored sapwood is much less decay-resistant than the dark heartwood.

Whether to allow logging in the National Forests has been argued for decades. Perhaps that is the basis for the definition of a conservationist as someone who already has a cabin in the mountains.

Under-Floor Vapor Barriers

Q. *A house we completed last year in New Hampshire has a number of moisture problems, such as water running down the inside of the gable ends and water dripping from the bathroom fan. We suspect that a major moisture source is the crawl space under part of the house (with wet soil). Since it would be difficult to place poly over the soil due to trenches and other obstructions, could we staple the vapor barrier to the bottom of the floor joists and seal it to the foundation walls?*

A. This could cause problems since you would be installing a vapor retarder (barrier) on the cold side of the floor assembly without providing ventilation for the space above. I think it is time to bite the bullet and level and clear the crawl space as you should have done in the beginning, and install the vapor retarder over the soil surface. A crawl space should never be left without a plastic ground cover—to do so is to invite major problems, and the plastic is the cheapest insurance you can buy.

Easy Energy Savings

Q. *I build spec and semi-custom homes in northern Vermont and would like to make modest changes that pay off in big energy savings. I currently use a vapor barrier in the walls. If I add one to the ceiling, will I need to add a heat exchanger also? Would other changes make more sense?*

A. We would all like to make modest changes to reap big savings, but it doesn't work that way. After double or triple glazing and good insulation, the rest of the savings come as the sum of a vast number of little things. Adding a vapor retarder in the ceiling (which I recommend) would probably not require you to install a heat exchanger, although some mechanical ventilation might be needed, particularly during the first winter. It all depends on how tight the house is elsewhere and how much moisture is generated. There are many books and articles available (check your back issues of *NEB*) on the detailing that contributes to an energy-efficient house. ■

Henry Spies is with the Small Homes Council-Building Research Council of the University of Illinois. Questions for this column should be sent to him at New England Builder, *P.O. Box 5059, Burlington, VT 05402.*