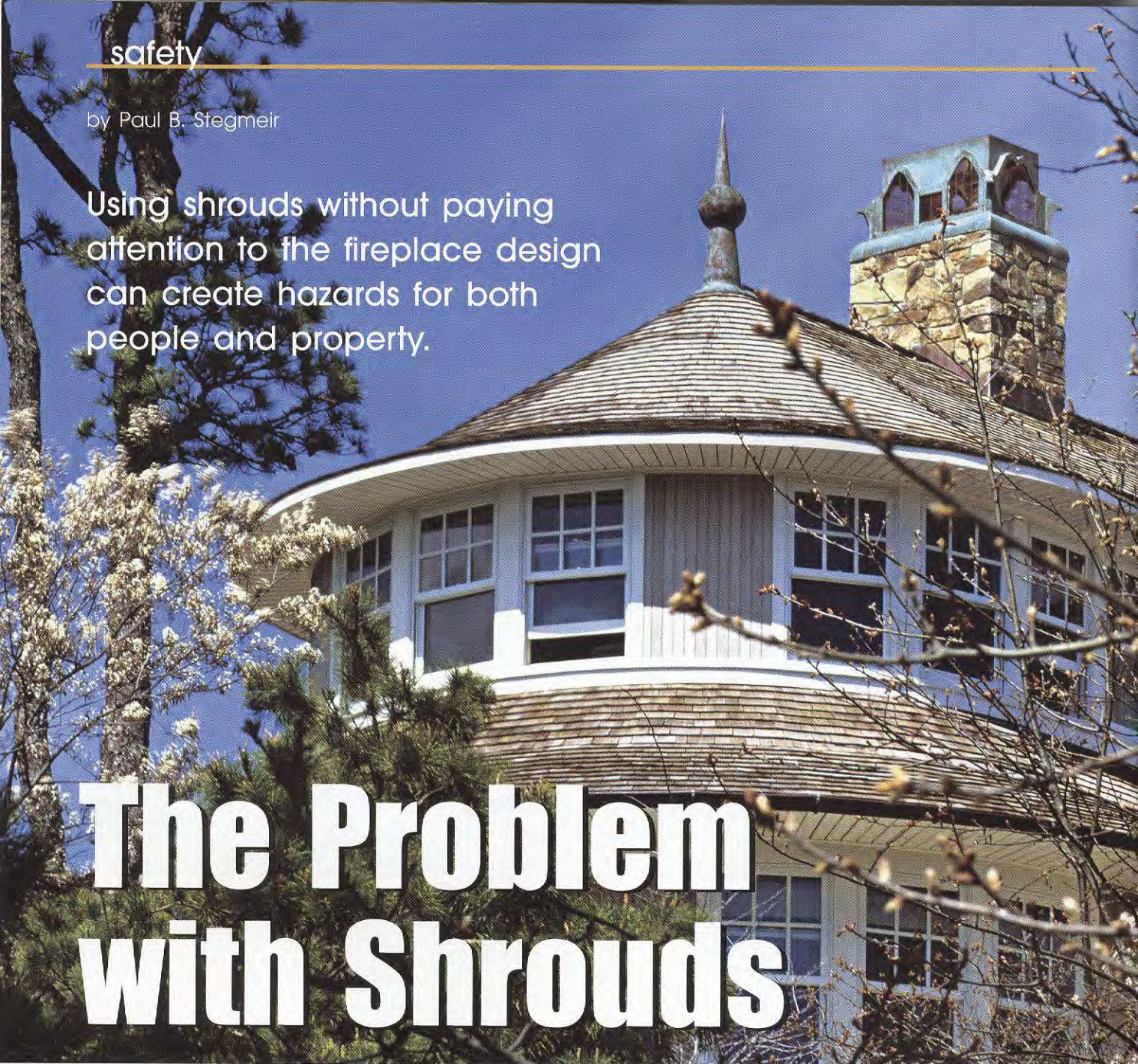


by Paul B. Stegmeir

Using shrouds without paying attention to the fireplace design can create hazards for both people and property.



The Problem with Shrouds

Shroud; *definition* – Something that conceals, protects or screens: *under a shroud of fog*; to hide from view; to shut off from sight; to screen, to block; to veil, as in obscurity or mystery.

These definitions are found in various dictionaries and relate the purpose of the device we often find at the top of a chimney. Sometimes referred to as decorative tops or decorative terminations, they are popular in many parts of the country. While they may look cool, they are embroiled in a continuing and hot controversy on the safety and func-

tion side of our industry.

All shrouds are not created equal. Most manufacturers of listed factory-built fireplace systems have discussed the use of shrouds and decorative tops quite well on their Web sites and in their manuals. Most manufacturers of factory-built chimneys have done the same. There should be no mystery, no fog, no obscure notions about shrouds, yet they continue to be an enigma in this industry.

Why do we need shrouds, anyway? In truth, we don't. As is so often the case, form becomes more important to some than function. Shrouds are desired

by those who think that conventional round tops are not attractive or appealing, not in sync with the architectural style of the dwelling, or just better looking or more individualistic than the product that comes from the factory.

So what's the problem? Fireplace function can be deterred by improper terminations. People's safety and dwelling integrity are often put at risk through their use. In other words, using shrouds without paying attention to the fireplace design can create hazards for both people and property.

Let's look at basic function issues of typical factory-built fireplaces. The

two-wall, air-cooled chimney that is in common use for most systems being produced and in use today requires that air flow enter the outer ring of the chimney through special ports at the top of the fireplace, usually through the chimney starter section assembly. This air rises to the top of the chimney assembly and is exhausted outside, through a dedicated opening in the chimney termination top.

The driving force is thermosiphoning, caused when the heated flue gasses heat the flue pipe, thereby heating the air in the space between the inner and outer pipe. This warm air rises at a rate commensurate with the

temperature in the flue. A hotter fire moves more air. This air, drawn from the space inside the fireplace enclosure, serves as the primary cooling function for the chimney and often parts of the fireplace.

When installed with proper clearance, and with proper airflow, the fireplace has a built-in, self-cooling system for its chimney and it functions safely. *(Three-wall chimneys operate similarly, with the cooling air entering at the top of the chimney into the outer layer and flowing down to the middle layer where it reverses its path and goes back up to be exhausted at the top.)*

A shroud placed around the termination cap at the top of the chase may interfere with the air flow. If that air does not flow at the proper rate, and have unlimited egress to the outside, it may cause over-heating of the chimney system, which by itself may create a fire hazard. Additionally, the shroud top can interfere with draft for the fireplace, at times causing it to have inadequate burn performance, thereby causing spillage of combustion by-products.

Other problems may exist when the shroud itself becomes hotter than appropriate, such as in a hot fire or a chimney fire episode. In these cases, heat may be reflected back to the top of the chimney chase, or directly conducted to the top of the chase, thereby overheating and

potentially igniting combustible wood structures at the top of the chase.

While two-wall insulated chimneys do not have the issue of thermo-cooling to affect their function, the issue of draft and chase top overheating must be considered when shrouds are in place.

So, your customer wants that shroud, or decorative top. What are your options? Can it be provided, installed and used safely? Right now, the answer is a limited yes. Some manufacturers of listed fireplaces have included decorative top options that are listed for use with their products. They have been tested and meet the provisions of the 127 UL test criteria.

Dennis Kingery, manager of wood product development at Heatilator, points out that the instructions with Heatilator products show a variety of options for decorative shrouds that may be used safely with these systems. In addition, his company has worked with regional manufacturers of shrouds to provide design specifications as to size, minimum dimensions and appropriate air flow so that they may make shrouds that will pass safety tests and function well in the field. Some manufacturers may even have witness tests done by UL so that a product classification for use with specific fireplaces may be attained, and the resulting product labeled for use.

Tom Beale, director of engineering at CFM-Majestic, cites a similar program, relying on their distributors and Web site to provide termination options to customers. They have several tested and listed shroud components that they supply, and provide details for

design specs that allow third-party manufacturers to construct them to CFM-Majestic specifications, as well.

Selkirk Metalbestos has provided to their customers an instruction entitled "Installation Construction Supplement-Custom Chase Tops and Shrouds," which has been verified through UL and allows construction of shrouds to be used with their specific products. Like those design specs mentioned above, it covers materials, minimum sizes, air opening requirements and general minimum horizontal and vertical dimensions.

All manufacturers emphasize that the use of shrouds (or any other components) not tested and certified for use with their products violates the listing requirements and may be a cause for voiding warranties, as well as failure to comply with building code requirements. Warnings in every installation manual speak to this point.

NFPA 211 states that an "unlisted decorative shroud should not be permitted at the termination of a factory-built chimney." In addition, the 2006 International Mechanical Code states that, "Decorative shrouds shall not be installed at the termination of factory-built chimneys except where such shrouds are listed and labeled for use with the specific factory-built chimney system and are installed in accordance with the manufacturer's installation instructions."

If you are a dealer, distributor or installer using shrouds, beware that there is a problem here and that only approved products designed and tested for that specific system may be used. If there is ever a question, contact the product's representative and make sure you get the manufacturer's approval.

If you manufacture shrouds, it would behoove you to link up with the fireplace or chimney manufacturer(s) whose products you commonly deal with and work out a design or product classification system. If you sell or install decorative tops and shrouds, you must know that selling product that lacks approved certification puts you at risk if fire loss, or other incidents, occurs because of its use. 

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