

STRUCTURAL BUILDING COMPONENTS MAGAZINE

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Our Legal Reality



Whose Mold Is It? by Kent J. Pagel

While the news media and many claiming mold remediation expertise continue to sensationalize “mold in the home,” I am proud to say that WTCA has been far in front of other trade organizations actively gathering information and establishing recommendations. I first covered the issue of mold in SBC Magazine in a two part series that ran in the [May](#) and [June/July](#) 2002 issues. And prior to that, WTCA created a new document for the Truss Technology in Building series entitled Facts on Mold, for broad distribution to the membership and chapters. Although the media frenzy and the hype of the mold remediators will most certainly lead to litigation impacting the residential construction industry, more accurate information is needed and a business-like approach is essential for the structural building component industry.

MOLD & INSURANCE

Insurance companies have been quick to exclude mold in liability policies that are being written for builders and building material suppliers. Specific provisions are being added to exclude mold—potentially meaning no legal defense or indemnity of a mold lawsuit filed. We are expecting to see such exclusions added to structural component manufacturer policies as policies are renewed.

SUMMARY OF CRUCIAL FACTS ON MOLD FOR THE STRUCTURAL COMPONENT MANUFACTURER

- Wood is not a preferred material by most fungi. Wood is primarily cellulose (the strong fibers) and lignin (the glue that holds them in place). Only some fungi can digest cellulose—furthermore, cellulose is protected in wood by a natural coating of lignin and only a few fungal species can break this coating.

The prime mold darling of the media is *Stachybotrys*, also known as a toxic mold. According to research done for an article entitled “Mold, Housing & Wood” by Robbins and Morrell for the Western Wood Products Association (WWPA), *Stachybotrys* is a mold that grows well on chronically wet cellulose material. In research conducted by Oregon State University, none of the 45 different species of fungi that formed on samples of Douglas fir sapwood were *Stachybotrys*.

Furthermore, the Council on Scientific Affairs of the Texas Medical Association, www.texmed.org, conducted a search of medical and scientific literature and contacted national experts and specialists. After reviewing available data, the council has concluded that public concern for adverse health effects from inhalation of *Stachybotrys* spores in water-damaged buildings is generally not supported by published reports in medical literature.

- Other products that include paper or fibers, such as acoustic tiles, wallpaper and drywall are more likely to contain mold growth than lumber. The pulping process removes lignin, thus making the cellulose available to the fungi. In addition starch (food that mold thrives on) may be added as a glue or binder in pulp based materials.
- With respect to mold on components, it is important to distinguish between the growth of mold ON the surface of the lumber as opposed to INTO the lumber. Surface mold growing on the lumber does not affect its strength or long-term durability. Decay fungi on the other hand grows into lumber and attacks and degrades the material's structural components (e.g. cellulose and lignin).
- As [Nathan Yost reports in his article](#), surface mold can grow when a mold spore lands on lumber (a nutrient source) when the moisture content is between 20 and 28 percent. A moisture content below 20 percent will not support mold growth. Solid lumber must remain sufficiently wet for approximately seven days before surface mold begins growing. Decay fungi, on the other hand, require a moisture content of greater than 28 percent—essentially saturation for a prolonged period of time.
- Exposure of lumber to hot and humid conditions does not promote mold growth. It is the wetting of lumber by rain or condensation that facilitates mold growth.
- Kiln drying lumber, while reducing the likelihood of mold formation, does not guarantee the wood will remain free of mold. Lumber exposed to sufficient moisture, even if kiln dried, will support mold growth.
- Mycotoxins are relatively large and heavy molecules; this means they are not volatile and thus do not evaporate. The musty odor associated with mold comes from volatile compounds generated as the mold reproduces. These compounds may be annoying, but they are not toxic.

MOLD ON CONSTRUCTION MATERIALS NOT A KNOWN CAUSE OF MOLD INFESTATION

Most mold infestation has to do with construction methods, homeowner's maintenance, and improper flooding/leak repairs. Conversely, the presence of mold on construction materials is not a known cause of mold infestation.

There are many potential sources of unwanted moisture in buildings which can contribute to mold infestation: (1) improperly maintained A/C system that can create excessive condensation; (2) in walls, ceilings and floor cavities when water gets in and stays for more than a few days; (3) plumbing leaks; (4) gaps in roofs, siding or masonry; (5) poorly sealed windows; (6) porous slabs and foundations; (7) inadequate drainage; (8) faulty roof drains and downspouts; and (9) poor ventilation and/or air circulation combined with high indoor humidity—from showers, cooking or other activity—can result in condensation that promotes mold growth.

The mold problem really stems from two issues: (1) Homeowners are less inclined to perform routine maintenance on their house; and (2) At times construction details are missed whose intended purpose is to keep unwanted water out.

IMPLICATIONS FOR THE STRUCTURAL COMPONENT MANUFACTURER

Even though I would submit that “mold on components” is not a problem, the frenzy over mold has led to builders making what I believe are unreasonable demands on the component

manufacturer. With greater frequency, I am seeing builders ask for delivery of trusses “mold-free,” with “no mold, mildew or tainted discoloration,” or having not been “subjected to moisture either by exposure to rain or any other means prior to delivery.” The re-quests may come in the customer contract form, in project specifications or in letters authored by the builder's home office.

The following is an example of the kinds of one-sided provisions builders are asking of component manufacturers. A builder in North Carolina wrote a truss manufacturer with a contract amendment pertaining to mold on lumber. The amendment stated that the truss manufacturer would “monitor lumber shipments when received from the mill and adhere to a policy of stock rotation; buy lumber that is wrapped or otherwise protected from the moisture on deliveries; store lumber in a closed or roofed area (or cover with plastic or tarps); supply only dried lumber; make visual inspections and not deliver with mold.” This same builder insisted that trusses and wall panels would be made no more than five days in advance of a scheduled delivery date.

Other builders and developers are requesting broad warranties and indemnification provisions that specifically assign a great deal of liability to the component manufacturer for any mold and mold claims.

If the component manufacturer is able to conduct its manufacturing operations in such a way so as to buy and store lumber and manufacture and deliver trusses, wall panels and other materials to a customer jobsite at a moisture content of 19 percent or less and with no visual signs of mold—so long as the materials are unloaded in a way approved by the customer—that component manufacturer should be able to keep its liability to zero or an acceptable minimum. But is this feasible? Is this affordable? Most importantly, is this efficient: the trusses, wall panels and materials must also be protected at the jobsite and allowed to dry out before the house is closed in order for the wood to maintain low moisture content and not be susceptible to mold growth.

ADDITIONAL COMPONENT MANUFACTURER RECOMMENDATIONS

Builder Instructions/Advisories: WTCA is working on a builder/contractor advisory. The advisory will contain facts, not hype. As building components will inevitably get wet during construction, the thrust of the advisory will be twofold:

- Recommending that siding and roofing be attached as soon as possible to protect the building components from the elements.
- Advising with respect to the danger of putting up drywall on wet framing lumber before it dries adequately.

In other words, the builder’s focus needs to be on “drying out before closing in.” This concept has been embraced by the drywall industry, the American Forest & Paper Association (AF&PA), and the NAHB Research Center. The advisory will further provide remediation recommendations to the builder/contractor for those instances when surface mold does appear on building components during construction. The goal of such remediation should be the removal of mold, which can be done by scrubbing with water and detergent and followed by rinsing. And, as the

clean up of mold is the same regardless of the species of mold present, it is not necessary to test for mold once it has been identified.

Just say no! Consider a policy of monitoring incoming shipments of lumber and not accepting any lumber that has a moisture content of greater than 19 percent and any that has mold on it. The In-Plant WTCA QC program, for example, has a lumber inspection section of the program to keep data by mill. This database can help you to know which lumber mills are supplying you with lumber that is dry and meets your quality criteria and which do not.

Just say yes! Consider requesting that your lumber suppliers only provide you with mold free products and ask them to take actions in their manufacturing process that will give you the security that there will not be mold growth during the raw material storage, sawing, component manufacturing, finished goods storage, and the shipping process.

Just say no! Material and delivery issues can certainly be handled by your customer contract. An agreement with a builder can spell out how long they have to inspect what was delivered and can address the warranty offered among other things. In other words, whose mold is it? If no formal agreement is in place, you may be called on to take care of any problem issues and maybe even remediate at the jobsite.

Be Proactive! Consider an approach of using soap and water to wash any lumber that visually appears to have mold before it is delivered.

Be Proactive! Builders and manufacturers can work together to control timing of shipments as this may head off potential mold problems. By working together on the delivery and storage process at the jobsite, both parties can minimize the risk of mold growing on structural components.

Respond to Builder/Contractor Requests: Respond to requests or concerns of your builder/contractor customers promptly and treat them seriously. The goal is to solve the moisture problem, as without moisture mold cannot survive. In the process, you may quite possibly avoid the big case.

Best Practices—Do they work? Both the WWPA and the Southern Pine Council have published “best practices” guidelines that are oriented from the point of view of minimizing moisture exposure to lumber from the delivery from the mill, through the distribution stage and through to delivery to the builder. Links to these publications can be found at www.wwpa.org and www.southernpine.com.

In my opinion, the perspective of the structural components manufacturer is lost in this process, as it is essentially impossible for roof and floor trusses, wall panels and related structural components to be stored free from exposure to rain or snow during the lumber handling, manufacturing, truss storage and delivery process. While many of the suggestions or recommendations make sense (e.g. lumber inventory rotation using the first in, first out rule; stickering green lumber to allow air circulation; not storing lumber near standing water; and ensuring the storage area has good drainage), many others sound good in theory, but in practice

will not work.

CONCLUSION

While I would agree that everyone in the lumber distribution stage, including component manufacturers, should be vigilant at avoiding water exposure as much as is practical, ultimately the responsibility in my opinion lies with the builder. The very best in “best practices” is totally diminished if the builder uses poor storage practices, allows components to be unduly exposed to the weather, or fails to let the components dry out before the home or structure is closed in. Until there is a system that allows us to have assurance from the lumber mill that lumber will remain mold-free from the saw to final installation of the product in the structure, builders will continue to request call backs and remediation all at a cost to our industry, even if the product has not been treated properly on the jobsite and finds itself in place with mold on it. There is currently no silver bullet on this issue, so you may want to consider some of the recommendations set forth in this article.

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WTCA and STCA have developed fact sheets on mold that have been published as part of WTCA’s Truss Technology in Building series and STCA’s Steel Components in Construction series. For more information, visit the products sections of the web sites for these organizations: www.woodtruss.com and www.steeltruss.org.

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