

Beware of Blue-Stained Wood in Wood Packaging Materials

While the IPPC ISPM 15 Standard does not recognize Blue Stain within its targeted pest list, nor does it forbid Blue-Stained lumber in wood packaging construction, it has become problematic with countries such as China and Australia where pallets, skids, boxes, and crates entering the country have come under question due to its presence in pieces of the lumber.

What is Blue Stain? Blue stain (*Ophiostoma sp.*) is a sap stain that is caused by a fungus that attacks the natural sugars located in the sapwood of softwood lumber species (Pine, Spruce, Fir species). It is easily identified on the lumber as a discolored bluish, black, or gray area generally of significant size. The fungus is prevalent just about everywhere in the U.S. and Canada and is spread through the air and by insects such as bark beetles. Blue Stain may be present in the log before the lumber is sawn. It does not destroy the wood fiber, so the strength of lumber is generally not affected. The key element for growth and survival is temperature and moisture content of the wood. Optimum fungal growth occurs between 70 and 90 degrees F in wood with a moisture content above 22%. Below 50 degrees F, the fungus is dormant; above 130 degrees F it is killed. It can occur within the log or in lumber when conditions are favorable. Also, Blue Stain is not a mold. For a simple test to determine whether a piece of lumber is blue-stained or growing mold, lightly rub the affected surface of the wood. Mold grows on the surface and can be brushed off or smeared, whereas blue stain penetrates deep into the wood and cannot be removed.



Why Australia and China? Both countries have stopped shipments on a sporadic basis claiming Blue Stain as the reason for question. Australia is relatively free from most of the world's serious pathogens such as exotic fungi, bacteria, and nematodes and understandably more sensitive to the introduction or establishment of the Blue Stain fungus that could be introduced into their forests and forest product industry. Australian importers have already notified their customers in countries such as the U.K. that wood packaging materials should be free of blue stained lumber material. *Be aware that other countries may also become watchful of blue stain on wood packaging materials in the future!*



NELMA Recommendations: If you or your customers export to Australia or China and you use softwood lumber or components, we recommend that kiln-dried (KD) lumber be specified and used for manufacturing wood packaging items such as pallets, skids, boxes, and crates. KD lumber is clearly identified on the grade stamp with the letters KD or KD-HT. This indicates that the lumber was dried to 19% or less moisture content at the mill. However, this is not a full stop-gap measure. And equally as important, storage of lumber at the facility in protected areas or under wrap is critical, as Blue Stain can begin when surface moisture increases above 20%. Facility personnel should carefully examine their lumber inventory for the presence of Blue Stain and not use in construction when Australia or China comes into play. Also note that this is most typically a softwood lumber issue and not with hardwood species.

Important Considerations: Because of the heavy prevalence of Blue Stain fungi in the U.S. and Canada, completely stain-free wood packaging may become stained after it leaves a wood packaging facility if conditions for its growth are maintained, especially moisture content. This includes outside storage in wet conditions or during transit overseas where exposure to high moisture or condensation over long periods of time may trigger the growth of Blue Stain.

Should you have any questions or need assistance from NELMA in any way, please contact us at 207.829.6901 or discuss with your NELMA Inspector during his next visit.