

## Columbia Forest Products' Position on Insect Infestation in Hardwood Plywood

Infestation of wood products by insects is an historic problem. Typically, there are two major groups of insects that attack wood:

- Beetles (of which there are 3 genera consisting of hundreds of species, including several that are well established in the southern United States); and
- Subterranean termites (of which there are at least 4 genera consisting of at least 2500 species worldwide, 8 of which are well established in all the southern Atlantic and Gulf coast states to the Pacific southwest).

Additionally, there are other less significant groups of wood assaulting insects to include dry wood termites, carpenter ants, wood wasps, and carpenter bees.

The most often reported infestation involves the **powder post beetle**. The most common of these belong to the family Lyctidae. Adults typically lay their eggs in cracks or open pores and vessels, usually in end grain regions of the wood. The eggs then hatch into larvae that consume the cellulose in the wood. Life cycle estimates vary wildly due to the large number of species, but the more commonly reported periods range from 3 to 24 months.

Assault by Lyctid on dry wood in storage or even during fabrication into furniture or cabinet components is possible. Finished wood is less susceptible to assault because the finish seals the open vessels of the wood where the adults prefer to deposit their eggs. However, unfinished areas of finished cabinets or furniture remain vulnerable. Infestation prior to mechanical drying is not likely as the moisture content of green unprocessed logs varies from 40% to over 100% (as a ratio of the weight of water in the wood to the oven-dry weight of the wood). Most species of powder post beetles prefer a range of moisture content between 8% and 15%.

For subterranean termites to survive they must initially have a direct route to soil as sunlight and the desiccating effects of wind will quickly dehydrate them. They can live in wood in a residence providing there is sufficient moisture in the wood. Infestation of logs on a log yard is possible as subterranean termites prefer wet wood conditions.

**The likelihood that any active infestation by powder post beetles, subterranean termites, or for that matter, any of the wood assaulting insects surviving the processes involved in producing hardwood plywood is extremely remote.**

The process of kiln drying lumber at temperatures of at least 133° Fahrenheit for a period of at least 30 minutes has been proven to kill lyctid in all life stages. As the temperature increases, the amount of time necessary to kill the organisms decreases.

The International "Standards for Phytosanitary Measures Guidelines for Regulating Wood Packaging Material in International Trade" includes the statement: "Wood packaging made wholly of wood-based products such as plywood, particleboard, oriented strand board, or veneer that have been created using glue, heat, and pressure, or a combination thereof should be considered sufficiently processed to have eliminated the risk associated with raw wood. It is unlikely to be infested by raw wood pests during its use and therefore should not be regulated for these pests."

Additionally, under the heading *Approved Measures Associated with Wood Packaging Material, Heat Treatment*, this standard includes a reference that “Wood packaging material (requiring such treatment) should be heated in accordance with a specific time-temperature schedule that achieves a minimum wood core temperature of 56°C (132.8°F) for a minimum of 30 minutes. Kiln drying...may be considered heat treatment to the extent that (this process creates conditions that) meet heat treatment specifications through the use of steam, hot water, or dry heat.”

While Columbia Forest Products does not actually heat treat our wood *per se*, the process of cooking the logs to greater than 135°F for a period approaching 24 hours would most certainly kill any adults, larvae, eggs, or nymphs of either powder post beetles or subterranean termites that might be present in the log. In the event it does not, exposing the veneer to temperatures ranging from 350°F to 500°F in a dryer for several minutes most certainly would.

Further processing the resulting veneer into hardwood plywood exposes *the center most component to temperatures greater than 212°F, the boiling point of water, which is also a fatal condition for all stages of either family of insects*. Due to the heat retention characteristics of wood, plywood in stacks following pressing has been shown to retain heat levels in excess of 135°F for several hours.

In consideration of the foregoing, **it is statistically unlikely that any infestation of wood assaulting insects would be active or potentially active immediately after manufacture into hardwood plywood**. Inasmuch as the exposure of such panels to potential infestation once it leaves our mills is outside our control, any such infestation must surely have been the result of contact incurred after shipment. Such exposure could, however, possibly occur in storage, whether at a distribution warehouse, fabricator storage facility, or jobsite, or perhaps even in service in a residence or business if local conditions are suitable for such infestation to occur.

**Position summary:**

- **The temperatures reached and sustained during log preparation, veneer drying, and hot pressing of Columbia Forest Products’ hardwood plywood panel products are more than sufficient to kill any latent insect infestation that may be present in the unprocessed components.**
- **To the extent that subsequent infestations may develop under many different circumstances outside the control of the manufacturer, Columbia Forest Products makes no warranty, expressed or implied regarding any such infestation that may occur once panels leave our control.**

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