

Wood Structural Panel Exemption from Phytosanitary Regulation

Wood products are commonly shipped between countries for use in many structural and non-structural applications. To reduce the risk and/or introduction of alien pests that may infest these wood products, many countries require these products be treated via heat or fumigation and marked. The International Standards for Phytosanitary Measures Publication No. 15 (ISPM-15), *Guidelines for Regulating Wood Packaging Material in International Trade*, establishes guidelines for regulating raw wood packaging materials used for such items as pallets, crating, packing blocks, cases, load boards and skids. ISPM-15 recognizes two methods of treatment; 1) heat treatment (HT) – heating the wood to a minimum core temperature of 56° C (133° F) for a minimum of 30 minutes, or 2) methyl bromide fumigation.

Section 2 of ISPM-15, *Regulated Wood Packaging Material*, states that “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 the raw wood. It is unlikely to be infected by raw wood pests during its use and therefore should not be regulated for these pests”. Stated another way, the wood-based products such as **plywood, particleboard and oriented strand board** do not require additional heat or chemical phytosanitary treatments, since the processing that these products undergo during their manufacture is more than sufficient to eliminate any pests that may have been present in the raw wood.

The following provides a brief description of the typical manufacturing process for wood-based products such as plywood and oriented strand board (OSB).

1) Log Preparation

The logs are often conditioned in hot water vats or high temperature steam chambers to facilitate the veneer cutting or strand/wafer generation process.

2) Log Processing

Logs used to produce veneer for plywood are peeled using high speed lathes. The thickness of the veneer used for structural plywood ranges from 1/16 - 3/16-in thick. The veneer is then dried using commercial dryers which operate at temperatures between 350 – 450° F. Each sheet of veneer typically stays in the drier for approximately 15 minutes; with the veneer surface typically reaching temperatures of approximately 250° F.

Logs used to produce OSB and waferboard are cut into strands or wafers approximately 0.025-in thick using a strander or waferizing machine consisting of a series of knives that move across the surface of the log at very high speed. The strands/wafers are then dried in large commercial drum or step driers in which the intake air temperature ranges from 600 to 1,500° F.

3) Lay-up & Pressing

After drying, the veneers are coated with a thin film of thermo-setting adhesive and bonded together under heat and pressure to create plywood. The press used to apply the heat and pressure operates at temperatures between 285 to 350° F and at pressures exceeding 150 pounds per square inch (psi). The pressing cycle is established such that the temperature of the interior glue lines exceeds 212° F for at least 1-1/2 minutes for adhesive curing purposes.

The strands/wafers used to produce OSB are blended in a spray of adhesive and formed into a mat for pressing. The presses used to manufacture OSB and waferboard operate at temperatures of approximately 400° F and exert pressures in excess of 600 psi. Press cycles typically range from 3 to 6 minutes depending on the thickness of the panel being produced.

The drying and pressing processes for particleboard are similar to those used to make OSB and waferboard. The main difference is that particleboard is typically composed of wood waste from sawmills and/or plywood trim instead of materials obtained by peeling or slicing logs.

Even if the logs are not subjected to soaking or steaming, the wood used to make plywood, OSB, waferboard or particleboard is subjected to temperatures in excess of 212° F at least twice during the manufacturing process. Literature indicates that temperatures of 165° F or greater are sufficient to kill most organisms and that at temperatures of 212° F or greater, these organisms begin to physically breakdown. For this reason, the processing used to manufacture the products described in this document is considered sufficient to eliminate the risk of pest contamination associated with raw wood.