

Preservative and Fire Retardant Treated Plywood

Preservative treated

Preservative treated plywood is intended for applications where the plywood is susceptible to attack by decay causing organisms and insects. Many of these applications involve exposures to environmental conditions where the moisture content of the plywood panels will exceed 20 percent for extended periods of time. These conditions provide ideal environments for decay fungi and termites that use the cellulose in the wood as food.

Preservative treated panels make up a relatively large portion of the plywood market. Common uses include concrete forming and all-weather wood foundations. When treated plywood is required for a particular application, the user should specify the retention level and after-treatment moisture content when treated with water borne preservative. Building codes require that the treating must be conducted in accordance with requirements of the American Wood Preservers Association (AWPA) and that the treated panels bear the mark of an agency certified to inspect preservative treated wood products.

Both Exposure 1 and Exterior plywood can be treated with preservative chemicals, although certain applications, such as permanent wood foundations, are limited to Exterior plywood only. The Exposure 1 and Exterior bond classification requirements are specified in U.S. Department of Commerce Voluntary Product Standard PS 1, *Structural Plywood*. Bond classification, as defined in PS 1, is related to the moisture resistance of the glue bond under intended end-use conditions and does not relate to the physical (erosion, ultraviolet, etc) or biological (mold, fungal decay, insect, etc) resistance of the panel. Plywood with an Exterior bond classification is suitable for repeated wetting and redrying or long-term exposure to weather or other conditions of similar severity. Plywood with an Exposure 1 bond classification is suitable for uses not permanently exposed to the weather and is intended to resist the effects of moisture on structural performance as may occur due to construction delays or other conditions of similar severity.

Exterior plywood grades used for treating must consist of no less than “C” grade veneer and use only species classified as Group 1 or Group 2. The species Group No. is used to classify species covered by PS 1. Group numbers include 1, 2, 3, 4 and 5. Strength and stiffness properties of species in Group 1 are typically highest, while the strength and stiffness properties of species in Group 5 are the lowest.

Treaters should be aware that some methods of pressure treatment exceed the pressures used in PS 1 for quality control bond durability tests. Span ratings are typically qualified before treatment and may not apply to panels after treatment. Consumers should contact the treatment company for specific information regarding the treatment used and the effects on panel strength and stiffness properties.

Fire-retardant treated

The new generation of fire-retardant treatments does not damage wood fiber, as did some earlier formulations of treatments. However, span ratings and strength values as stamped at the time of manufacture are not valid after treatment; treaters should provide strength information. PS 1 does not provide for fire-retardant-treated plywood, although plywood is often treated through an agreement between the treater and buyer.