



HUNTER PANELS ROOFING TECH TOPIC #R107

PLYWOOD AND OSB: UNDERSTANDING THE DIFFERENCES

Not all wood substrates used in Polyiso composite products are the same. It is important to understand the differences so that you specify correctly to accommodate your finished roof systems requirements.



Question: What is plywood?

Plywood is manufactured from at least three layers or plies of thin sheets of cross-laminated veneer and bonded under heat and pressure with strong adhesives. By alternating the grain direction between adjacent layers, strength and stiffness in both directions is maximized. A plywood panel has superior dimensional stability and an excellent strength-to-weight ratio and is highly resistant to impacts, chemicals, and changes in environmental temperature and humidity. Plywood has over twenty different grades and a dozen thicknesses available.

Question: Do the number of plies matter in plywood?

The fewer plies the more moisture and heat the wood will take on, making it unstable and increase the potential for warping. Plywood made of more plies is stronger than plywood made of the same thickness but less plies due to the fact that there is more glue/adhesive involved. If thicknesses are the same, usually the plywood with the most plies is more expensive and of a premium quality.

Question: Are there different types of plywood?

Western Plywood or CDX

- C = grade on one side, D = grade on other side, X = exterior glue.
- Typically CDX is used for structural applications and must be covered and not left exposed.
 - more mature wood
 - more expensive to purchase
 - 4-5 ply is most common

Southern Yellow Pine

- Wood derived from a three needle pine species of tree. Considered a PRS or performance rated sheathing
 - more juvenile wood
 - heavier and coarser
 - less expensive to purchase than CDX
 - 4-ply is most common

Question: What is OSB?

OSB stands for "oriented strand board" and it is manufactured in wide mats from cross oriented layers of thin, rectangular wooden strips that are then compressed and bonded together with wax and synthetic resin adhesives. OSB's combination of wood and adhesives creates a strong, dimensionally stable panel that resists deflection, delamination, and warping; likewise, panels resist racking and shape distortion when subjected to weather conditions. *OSB is the most used sheathing material in construction due to cost and availability. [*www.apawood.org](http://www.apawood.org)



Both OSB and Plywood should be APA or TECO rated. This trademark is typically on the product with a logo. It signifies that it is made in a specific member mill, that the panel quality is subject to verification through audit and the product conforms to certain performance standards.