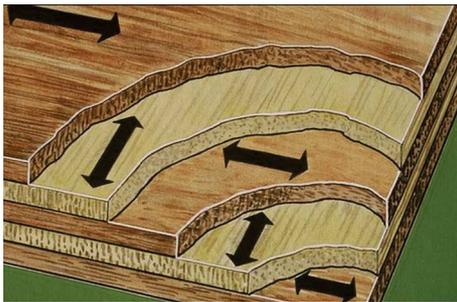


6mm Plywood made in South Africa - not ideal for laser cutting



Plywood sheets use alternating directions per layer to create better strength of the final ply



Imported marine ply - much more suitable for laser cutting



This is OSB (Oriented Strand Board) - not plywood

What exactly is Plywood - and can you cut it with your laser?

Plywood is an incredibly useful material, with practical applications that include interior, structural, and exterior projects.

Plywood is normally manufactured from thin layers or “plys” of wood veneer that are glued together with adjacent layers having their wood grain rotated up to 90 degrees to one another. In the most basic of terms, plywood is made by combining wood veneers together in order to create a flat sheet, held together using an adhesive.

Plywood can be made from softwoods or hardwoods. It can also be constructed of a mix of the two. There are various types of adhesive that can be used to combine the layers of wood. The type used in South Africa is mainly a phenol-formaldehyde or urea-formaldehyde resin.

Plywood can also be treated to be more resistant to flames or decay using other chemicals.

Where the problem comes in for lasers is the process of bonding the plies together. If the quality of the glue or the pressure and heat applied is not optimal, you get air gaps - or glue bubbles - that are difficult for a laser beam to penetrate without losing focus.

So when I am asked “can my laser cut plywood?”, I have to answer “it depends”. Most of our 80W and higher lasers will cut through 4mm plywood without any problem because it will normally only contain 3 to 4 layers - and even if the joining process is not perfect, the beam will force its way through.

However, if you want to cut 6mm or more plywood, there will probably be 8 or more layers - and each glue layer will refract the beam slightly so that by the time it gets half way through it is so out of focus that it will just burn the material rather than cutting it.

So if you want to cut thicker than 4mm plywood, ensure that you are using a good quality imported marine ply - and ensure that you go a bit slower than you would with the equivalent thickness of MDF.

Don't use OSB (Oriented Strand Board - also commonly called Chipboard in South Africa) with your laser. While plywood and OSB both off-gas formaldehyde, OSB off-gasses more of this carcinogenic gas. OSB also swells more when it comes into contact with water, meaning your board will not be level and flat if the humidity is higher.

