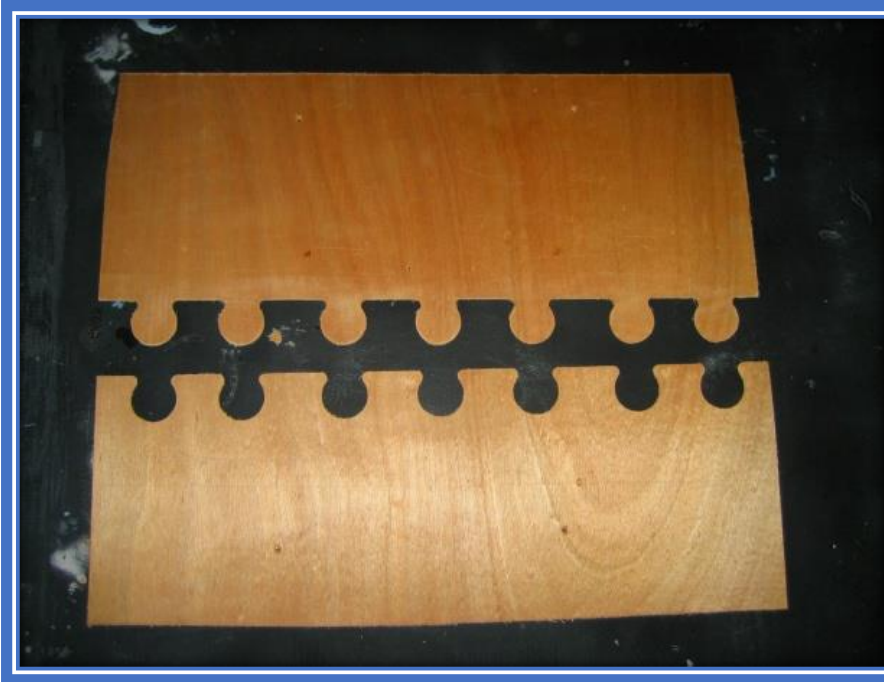


How To Make a Puzzle Joint

Puzzle joint: an alternative to scarfs, butt blocks and fiberglass splices.

The puzzle joint guarantees a perfect alignment without measuring, is stronger than the plywood, eliminates the extra thickness caused by other methods (less fairing) and avoids the flat resulting from some butt blocks. The puzzle joint must be very precise and cannot be cut by hand, it can only be used for CNC parts. We tested different shapes and clearances to arrive at our current design. The puzzle is 2" wide (51 mm) and the clearance between parts is about 0.025" (0.6 mm). This allows the joint to be assembled without excessive pressure but also with no play. Our panel joints are always slightly asymmetrical to eliminate assembly errors: the parts go together only one way.



To assemble a puzzle joint is simple:

- work on a flat surface covered with a plastic sheet
- coat the edges of the puzzle joints with epoxy resin
- assemble the two sides by pressing the joint together. The joint is tight and may require some pressure: we use a rubber mallet.
- cover the joint with more resin
- cover the assembly with a second sheet of plastic, tap with a mallet and apply pressure:
 - on that sheet of plastic, put down a flat piece of wood or metal (a 2x4 is fine) and put some weights on the assembly
 - wait for the resin to cure (overnight), grind the resin runs and proceed with the building.



- Note the tight fit: it is difficult to see the seam.
- Not visible in the picture are the glue lines and the plastic sheet under the part.
- This is a finished part: the deck of one of our SUP prototypes. We used cheap packaging plywood that splintered but despite that the joint is very strong. With

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quality plywood, the glue line would be thin, almost invisible. Later, the part will be covered with glass anyway.

- Our puzzle joint system was developed for our kits and works well for Stitch and Glue boats or any boat hull in which the plywood is covered with fiberglass on each side or at least taped along the edges. For traditional plywood on frame, the plywood skin is usually well supported by the framing, a puzzle joint will work especially if the hull is fiberglassed. We do not recommend to rely on puzzle joints alone in an unsupported structure.

To order plywood with pre-cut puzzle joints please go to [our Plywood store](#).

