



Print in Landscape Mode with ¼ inch borders.

The TAPE & GLUE PROCESS has been around for a few years, and hundreds of small boats have been constructed successfully utilizing the process without incident. There were two goals in developing the construction process, which is similar to Stitch & Glue. First, it had to be people and earth friendly, meaning it had to be as biodegradable as possible, and a non-allergen to those using it. Second, the materials used had to be low in cost to purchase. A third, but lower priority, had to be ease of assembly. The process has proven to be very popular with the small boat building community. Some builders have asked if other materials could replace those specified, and, up until now, none proved better. However, recent tests of various other materials has prompted a change to the materials list. Specifically, the “tape”, normally 3.25oz glass cloth, can be replaced with a commonly available alternative, “FibaTape”, an ultra thin fiberglass drywall tape with adhesive backing. The weave is small enough, and the thickness thin enough to provide just the right combination of features to replace the fiberglass cloth previously recommended. The following instructions will guide you through the process, in words and pictures, so that you should have no problems in producing strong and water sealed assemblies. Remember, the T&G Process is applied to most corners and seams after the basic hull modules are assembled, to provide a water seal at the edge of the plywood, and to enhance the structural integrity of the overall hull design. As a result, it is recommended that the boat being constructed be designed specifically to take advantage of this process.

The materials specified should be available at your local home improvement stores. The bonding glue is **TITEBOND III**, waterproof wood glue. It is biodegradable, non-allergenic, and FDA approved. It is available in 16 oz and 128 oz containers.

The tape is **Ultra Thin FibaTape**, used in drywall construction. It is an adhesive backed fiberglass mesh tape, that is mildew resistant. It is available in 75 foot and 300 foot rolls

Combined, these two materials produce a strong, thin, and easy to process alternative to other boat construction methods.

The photo at right is an edge seam processed with this new T&G2 method. As you can see, it covers the corner completely, and produces a smooth surface finish. Only light sanding is required after the glue has cured, typically in about 4 hours, weather depending. Like all processes, the ideal working conditions are at room temperature, around 72 degrees F, or 22 degrees C.



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TAPE & GLUE PROCESS 2 Materials

The photos below are of the two components that make up the Tape & Glue Process 2. In combination they provide a strong, waterproof panel sealing system, that adds strength and rigidity to the hull components. The following instructions will show, in text and pictures, how to easily accomplish this process, and they will also indicate those areas of caution..



Available in 75 foot and 300 foot rolls
Purchase the 75 foot roll for small boats..



Available in 16 oz and 128 oz containers.
Purchase 32 oz for T&G only

Typically for small boats, one layer of tape is all that is necessary. However, if you are going to portage the boat over rough terrain, rocks or gravel, it is recommended two overlapping layers of tape be applied, for best seam protection. Also, do not skimp on the glue, as it is what holds all components together, and provides some abrasion resistance. All my designs utilize bottom skids, and some even utilize chine rails, to protect the hull panels from damage. The T&G Process 2 is intended for small boats only, 12 feet in length, or under. Larger boats, which are heavier and carry a bigger load, should use more traditional methods of assembly, for safety purposes.

Follow instructions, and do not replace the materials specified. They have been tested and proven to work on small boats.

Special Note: 3.25 Oz. Fiberglass Cloth can be used as a replacement for the FibaTape, if FibaTape is not available to you.

TAPE & GLUE PROCESS 2

Make sure that all panels to be taped have been cleaned and are free of sawdust. Wipe all these areas with a damp cloth. Make sure all preparations, including 1/4" Rounding of Corners and Edges, have been made prior to starting.

You will be taping the inside and the outside seams of all hull modules. I like to do the inside first, and get it out of the way, but it's your choice. Whichever, always allow sufficient curing time for the TB3 glue, a minimum of 4 hours.

DO's and DONT's

DO take your time in performing these instructions.

DO wear protective gloves and eyewear when applying the glue.

DO plan ahead to insure you have sufficient materials to finish the job.

DO NOT take shortcuts, follow the instructions.

DO NOT crease or fold the Tape, as it is a stiff fiberglass mesh and may crack

DO NOT water down the TB3 Glue, as it will be difficult to control the drip.

DO NOT sandpaper through the corner edge of the Taped joints.

Other Do's and Dont's may show up where necessary.

The T&G PROCESS 2

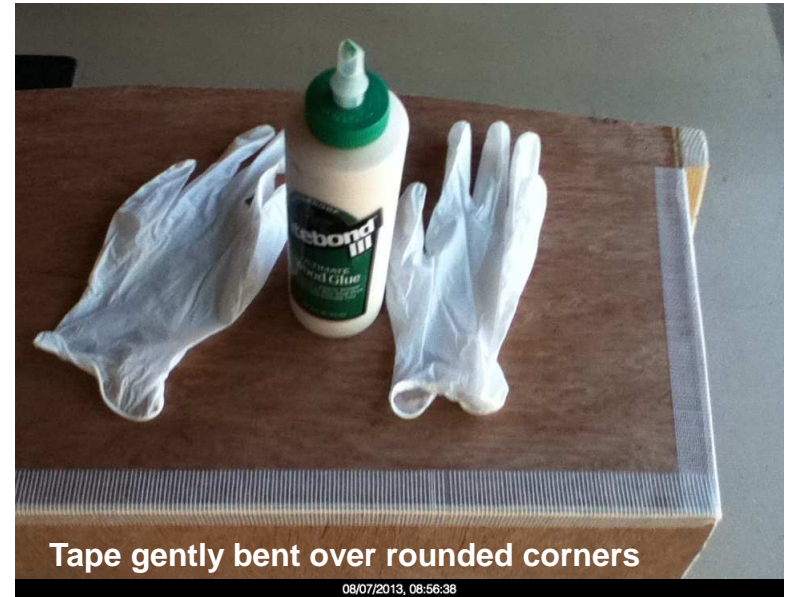
A simple process description: **Cut Tape to Length, Press Adhesive Side Firmly to Panel, Apply a Bead of Glue, and Smooth Out.**



Sharp Shears to Cut the Tape

Press the tape firmly and evenly over the rounded corner of the hull. Repeat this action for the other edges. Make sure there are no loose spots. If there are, make note of it, as you will have to re-seat these after the glue has started to cure.

It may not be necessary to tape the inside joint of the bulkheads, only the outside corners, as shown in the photos.



Protective Gloves

TAPE & GLUE PROCESS 2

The Process

Notice the bead size of the glue, and also note the small plastic trowel. This will be used to spread the glue evenly over, and into, the surface of the tape.

Be consistent in the application of glue, and how you spread it out onto the tape. Allow the glue to settle into the weave of the tape. Pay particular attention to the corners, as the glue has a tendency to dry out in these areas .



Typical glue bead size



Spreading glue with a small brush

When lightly sanding the taped edges, take special caution not to sand through the fiberglass tape !



Finished taped edge

Note: A second coat of TB3 will be applied to all taped seams, after the first has fully cured. This will add strength and fully conceal the tape. Patience is the key word when performing this process. Allowing the glue to fully cure is critical to achieve the full strength of the finished project. When ready to add the second coat of TB3, first lightly sand the taped surface to provide better bonding.



Typical corner application

After using both the trowel and the brush, I found the brush to be easier to use, and causes less disruption to the tape.

TAPE & GLUE PROCESS

Interior and exterior application



4 inch lengths of tape

What seams and corners need the T&G Process ?

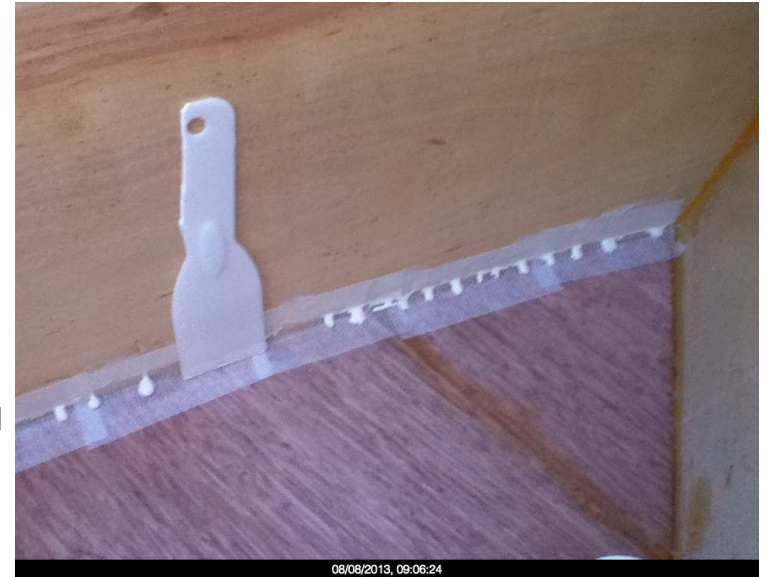
INSIDE:

All Base to Side Panels.
The Bow and Stern ends.

OUTSIDE:

All Base to Side Panels
All Side Panels to Bulkhead
All Base to Bulkheads
The Bow & Stern ends.

You will note that the curved sections of the inside base require the tape to be cut into 4 inch lengths.
See below.



Glue being spread up the tape

As stated earlier, I like to do the inside first, because it is harder to reach, and therefore more difficult.

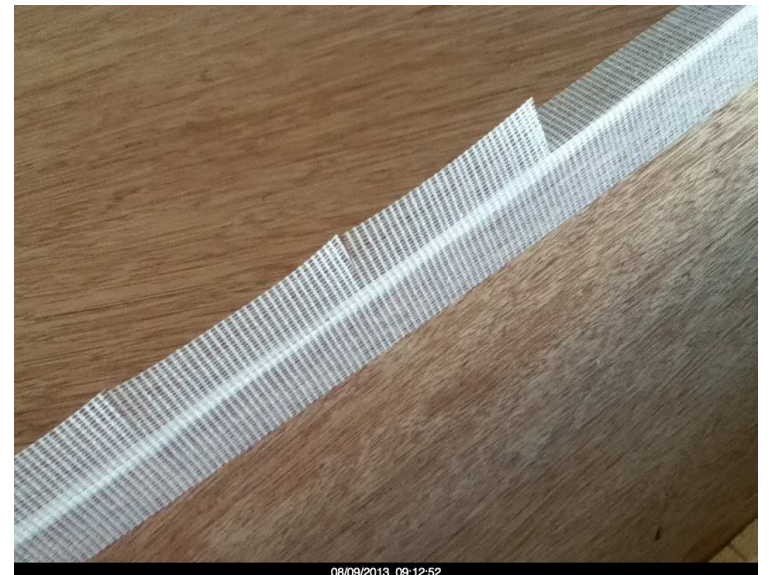
NOTE: Inside seams that use corner stringers (1x1's or 1x2's) do not need to be taped.



Overlapping Taped Sections

As previously mentioned, the tape is stiff, and as such, cannot be stretched . So it is necessary to apply it in overlapping sections to achieve a fully taped curved seam. These photos should provide a good view of that process.

On the exterior curved surfaces, it is best to apply the tape to the side panel, and then slit the area to fold over, every 4 inches, as shown at right.



Exterior method on curved surface

TAPE & GLUE PROCESS

Final Notes



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These are photos of the finished T&G Process, utilizing Titebond 3 Glue and FibaTape Ultra Thin, with a second coating of glue over all taped edges. Next process is to lightly sand all taped surfaces, taking caution not to sand through the tape !

If I told you taping was a simple task, I would not be truthful. There were times the tape lifted from the plywood after I had applied the glue, and this required special attention in those areas. I had to wait for the glue to start to cure, then press the loose tape down to the plywood, to achieve a bond. This occurred several times. It is possible the roll of tape I bought was older, as the adhesive backing was weak, and not very sticky. Or it could have been that I did not clean the plywood surface well enough. A second roll of tape, purchased at a different store, produced the same results. My conclusion is that this is not going to change, and the few times it lifted were tolerable. It is still far easier than the previous fiberglass cloth material, which moved every time it was touched, and unraveled upon application. The FibaTape is easier to work with, and should produce a strong assembly.

Taping the inside and outside edges of a four module hull took me 2 days to complete. I would assume you could do it in the same amount of time, or a long weekend. Just remember, this is a necessary process, and the protection it provides to the hull design is certainly worth the time and effort.

Good luck with your project ! Take your time, have patience, and you too will be rewarded with a safe and watertight hull.

Ken Simpson, Designer