

## INSTRUCTIONS FOR GLUING ON THE BUMPER FOR PORT TOWNSEND WATERCRAFT'S NESTING DINGHIES.

The PT 11 bumper is made from a high quality, non marking EPDM rubber. This type of rubber is by far the best for the purpose, but making it adhere well is important and this requires using very stinky glue.

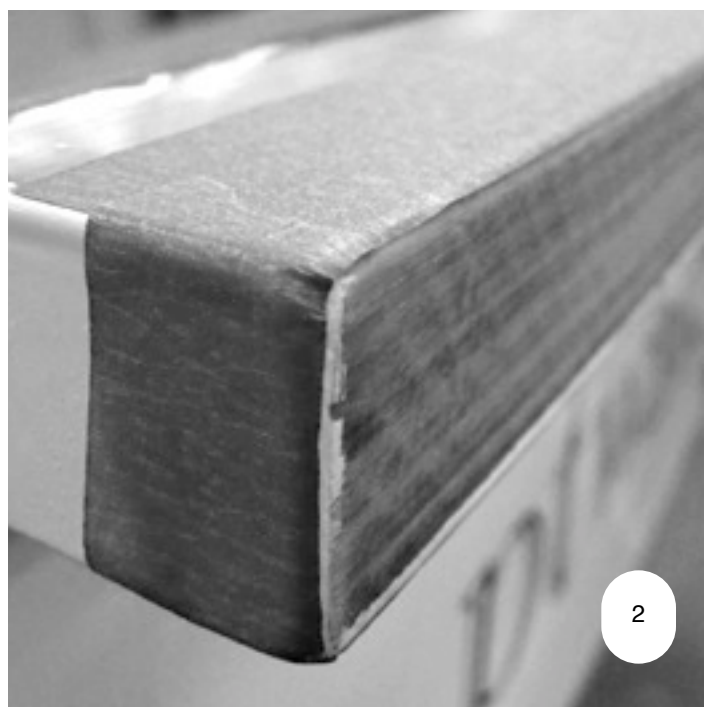
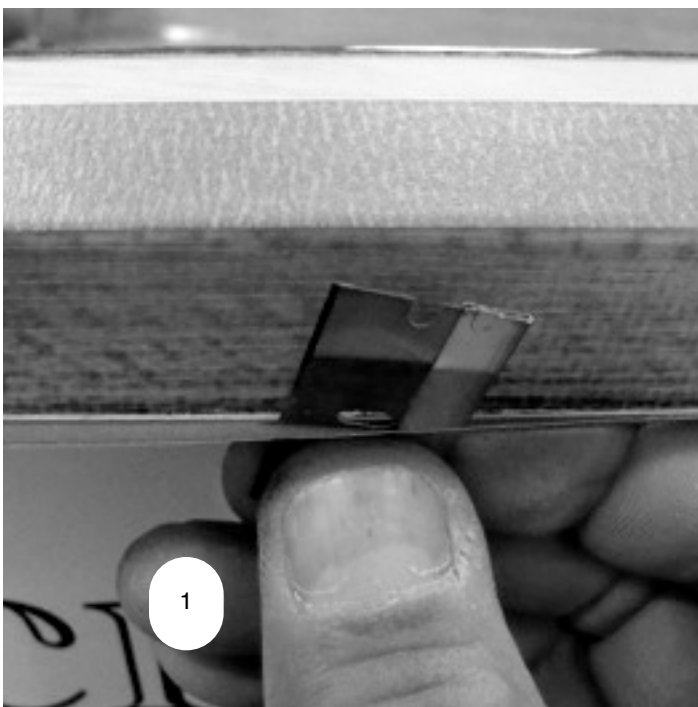
This rubber will adhere with a high quality contact cement using roughly the same instructions given below, but for best adhesion a **two-part Hypalon adhesive** is used. **This is contact adhesive, so no clamping is necessary.**

One of the limitations of Hypalon adhesive (or contact cement) is that **warm and dry conditions are required as well as good ventilation.** If you have to use it inside the shop without ventilation (to get the warm and dry part), a good respirator is absolutely necessary.

We sought the help of an expert for using this type of glue. **It is important to read the directions included with the adhesive, but some of our directions will be slightly different.** Our testing has shown that wiping bonding surfaces with toluene (toluol) is **unnecessary**, meaning you won't need to source and use this incredibly toxic thinner.

With the hull halves separated, block and hand sand the outer face of the gunwale with fine (120 or so) sandpaper. **Sand only the flat outer face** and wait until after taping to sand at the bow and transom.

**Tape the upper and lower edges of the gunwales** by letting the tape extend past the edge and trimming with a sharp razor blade. PHOTO 1 & 2



The aft ends of the bumper should run out onto the transom 4" or 5". Tape as shown, but place the vertical piece of tape (where the bumper ends) first. The bumper is 1" wide, so the lower tape should be at least 1" below the upper piece.

PHOTO 3

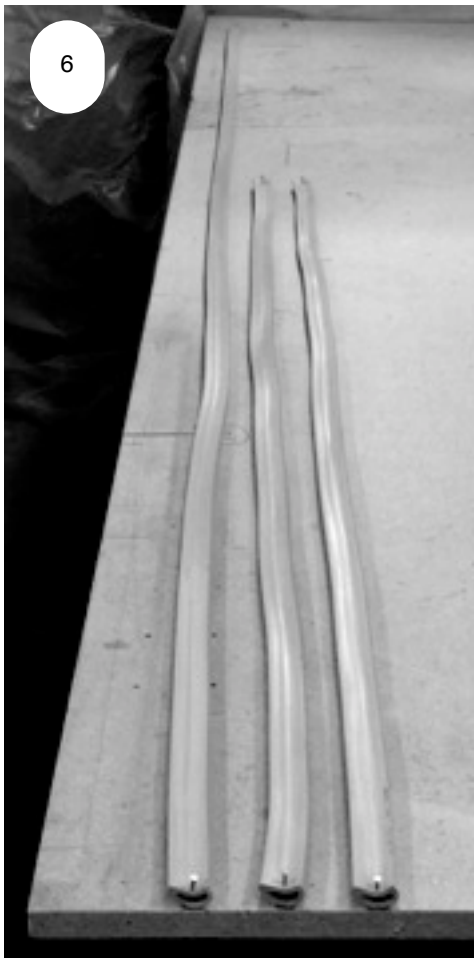
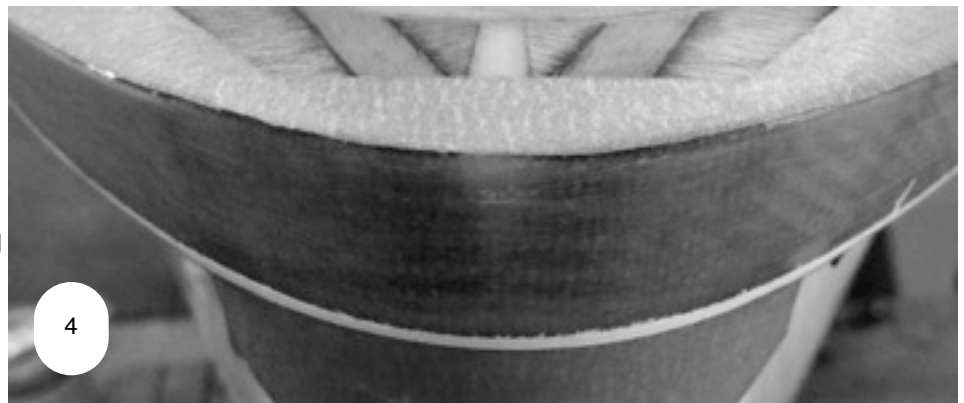
Tape around the bow as shown.

PHOTO 4 & 5

Lightly sand the painted surfaces on the bow and transom. Use fresh pieces of **3-M scrubbie** to prepare next to the tape all the way around. De-dust with rags.

Your PT 11 bumper is cut into three lengths. **One 12ft length** for the forward hull half and **two 6ft 6" lengths** for the aft hull half. These lengths will allow a few extra inches extra at the ends.

NOTE: SPEAR bumper; 25 ft long & installed in one piece.



The bumper sections should be stretched tight (flat side up) and nailed at either end as shown. Use a scrap board for the long section if you don't have a long bench.

The flat face of the bumper needs to be sanded really well for the adhesive to bond (see next page).

PHOTO 6

**Sand the flat side of the bumper sections thoroughly** with 120 grit (or so) sandpaper.

Vacuum the bumper and table and wipe the bumper with a clean rag. PHOTO 7

Set the hull halves on sawhorses and find two pieces of plywood or cardboard at least 4' long to use as **platforms** (see photos below) for holding the bumper when gluing.

**The two parts of the hypalon glue** are best mixed in the can so that the lid can stay on between uses. Thoroughly mix the glue with a stir stick that allows scraping the edges of the can when mixing. PHOTO 8



Apply the glue with a 1" throwaway brush. Give the brush a haircut to make it stiffer. **The hypalon glue is thick and dries very fast**, so load the brush (dip it about halfway) and brush out 6 to 10 inches or as much area as can be kept wet while brushing. The glue will not go on smoothly, but it must be thorough and cover the full width of both the bumper and the gunwale. **Brushing diagonally** one way and then the other will help insure that glue is spread to the edges. PHOTO 9

**Apply the first coat of adhesive to all three sections of bumper and both hull sections. There's no rush for the second coat**, but once the second coat is applied, the bumper must be applied within 20 minutes (+/-), so **apply the second coat of adhesive to one section of bumper (and one gunwale edge) at a time.** Wrap brush in plastic between uses.

Pull the nails from the section of bumper with two coats of adhesive.

**The surface with adhesive will stick to itself or other bumper sections like crazy.**

**You only get one chance to put the bumper on straight.**

**On the bow section, you will need platforms on both sides of the hull** for the bumper to rest on (sticky side up) when attaching the bumper. **If you are working alone**, you may need to apply the adhesive with the bumper wrapped around the boat as shown, which is more difficult than when nailed to the bench.



**Hold a length of bumper out with one hand while using the fingers of your other hand (feeling above and below) to center the bumper one short section at a time.** PHOTO 11 (*PT SPEAR builders see your manual for tips on handling your long bumper for gluing.*)



**Note:** Where the bumper wraps around the bow, place the upper edge flush with the upper edge of the boat. Use short pieces of tape to keep the bumper from moving downward (at the bow) while the glue cures.

Tape can be helpful to hold the bumper up at the sharp turn at the transom as well (see photo 3).

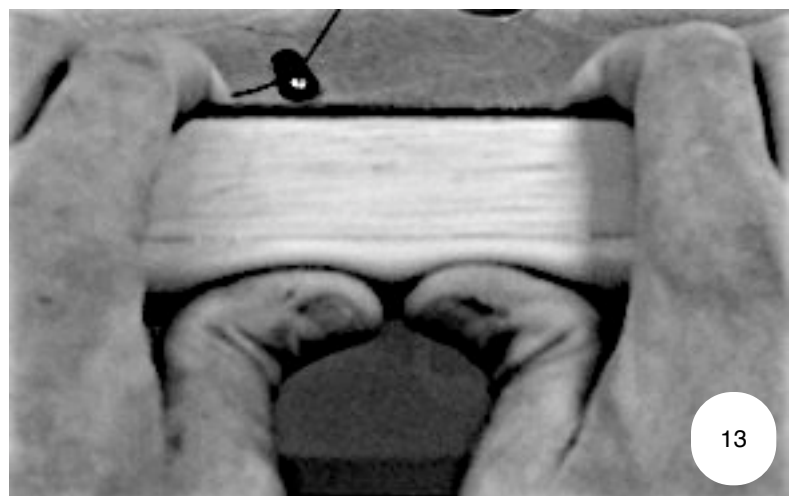
The flat side of the bumper should be about the same width as the gunwale, so using your fingers as a guide to get the bumper centered on the gunwale works well.

**Don't stretch the bumper when applying. Work slowly and carefully when applying the bumper**

Hypalon glue takes days to fully cure and is delicate until then.

**Be extra careful lining up the bumper at the ends of the gunwales** or the bumper ends will not line up when the hull is assembled. PHOTO 12

When one section of bumper has been placed, press it down firmly by hand. PHOTO 13



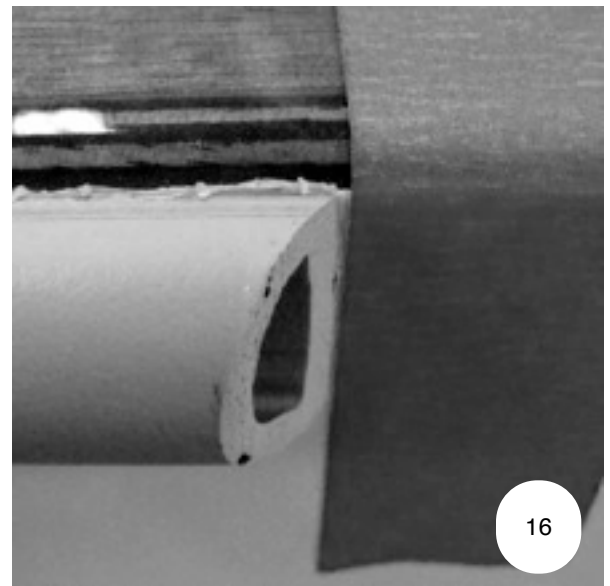
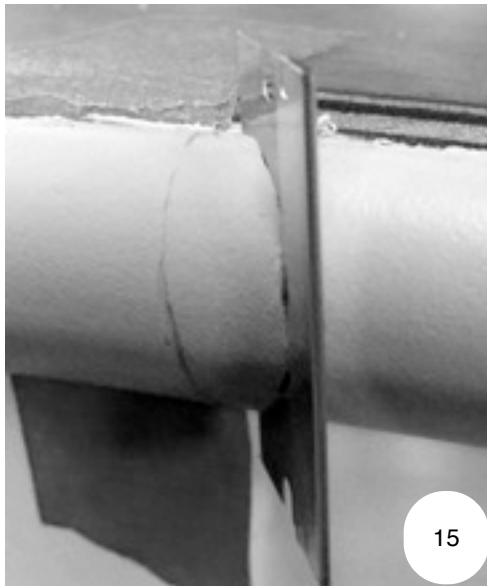
**Adhesion will be greatly increased by forcing the two glued surfaces together firmly** as soon as possible. One method is to round the end of a piece of wood and use it to firmly push the upper and lower edges of the bumper to the gunwale. PHOTO 14



Once all the bumper sections have been installed and pressed down firmly, pull the tape and **use a firm eraser or towel-like rag to remove any adhesive** that's not between the two parts. **This is much harder the following day.**

Cut the ends carefully. The aft ends can be cut at about a 45 degree angle using a razor blade or snap-off knife blade.

Align the blade to finish at the tape edge as shown. PHOTOS 15 & 16



At the joint between the hull halves, the bumper can be cut parallel to the bulkheads (as shown) By using a sawing motion with a very sharp knife. PHOTO 17

It's best to cut slightly back from parallel to leave a slight gap between the sections when the boat is assembled (see photo 12).

