

Making a Molded Windshield for your Boat

You asked where I got my windshield. Well, after some research, I found that most places wanted about \$400.00 to heat form a windshield and you still need the moldings for the top & bottom edges. (I have about \$160.00 in mine).



The plastic I used is 1/8 inch Lexan which is very flexible, but won't crack or split when bent cold. The moldings are a little more tricky. It involves annealing extruded aluminum stock and then shaping it around a wooden buck.

The following photos show the process I used to bend aluminum for the windshield moldings.

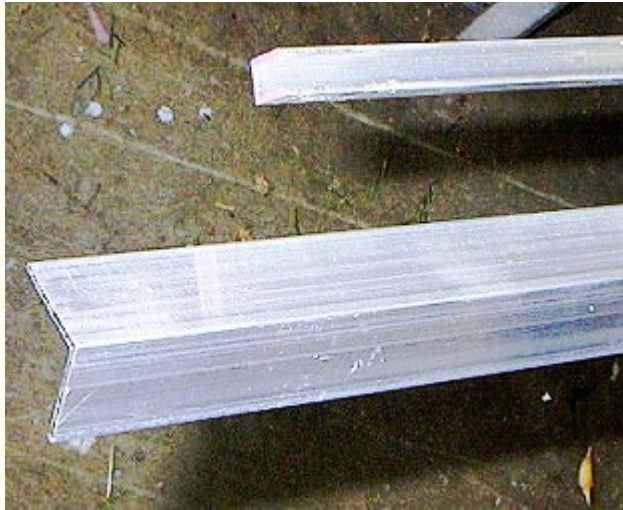


Photo #1. This is the size aluminum I used for the moldings of my windshield. 1"x1" angle and 1/4"x1/2" channel aluminum. It is available at hardware stores, metal supplies, McMaster supply, etc. The aluminum is not soft enough to bend easily so it has to be annealed. These photos show how to bend the bottom of the windshield moldings.

After you make a cardboard pattern for the size and shape of your windshield, make the base that the plastic and lower molding will screw to, cut the plastic to fit your pattern, screw the plastic to your base. This will get you close to your final shape of the windshield, shape your channel molding over the top edge of the windshield. The base of my windshield is angled 35 degrees in the middle and 10 degrees at the sides.



Photo #2. To anneal aluminum it needs to be heated and allowed to cool slowly. You need an oxy-acetylene torch to do this. First adjust the torch for acetylene only. This will be an orange flame with a lot of smoke and soot. Lay the aluminum on some sawhorses and wave the torch over the moldings covering them with soot.



Photo #3. Adjust the torch to a neutral flame and heat the aluminum until the soot starts to burn off. Be careful here, the aluminum is not very far from melting at this point. Keep the torch moving and not too close to the metal. The aluminum should be allowed to cool completely with little or no soot left.



Photo #4. Next you need something to bend the aluminum around. A wooden buck or the base that the windshield will fasten to will work. I made a buck out of 2x4's for this demo, but I used the base of the windshield to make my original moldings.



Photo #5. Use washers the same thickness as the molding to hold the buck up off of the wood topped table or workbench. Screw the buck down with enough room for the molding to slip under without hitting the screws.



Photo #6. Use a wood mallet to start tapping the aluminum over the buck. A leather covered mallet is better. Don't use a metal hammer, it will put dings in the metal that will have to be sanded out later.



Photo #7. After you bend the first few inches, screw a block of wood down to hold the end of the molding.



Photo #8. Start working the molding around the buck, pushing the loose end with one hand, and tapping the metal over the buck with your mallet.



Photo #9. You should be able to slip the molding off of the buck to check your progress. The bottom may be a little wavy, just tap flat and put it back on the buck and continue bending to fit.



Photo #10. When you have the shape you want, file any dings or scratches out and then wet sand with 400 grit and finish with 600 grit. If you have a bench grinder, you could put cotton buffing wheels on it and polish the moldings, or use metal polish by hand.



Photo #11. It took about 2 hours to make the buck and the molding in these photos, so it will take a good day to make a complete windshield.



Photo #12. I built the windshield so it would come off easily. 5 wing nuts through the deck and 1 at each end through the covering boards.



Photo #13. These are the parts that that make up the windshield. 1/8th inch Lexan/polycarbonate plastic. Aluminum channel for the top molding, 3/4" or 1" angle aluminum for the bottom molding and a wooden form/base mount to shape the bottom molding around.



Photo #14. The bottom of the windshield has hardware store foam rubber to seal out water and to make up the difference in the thickness from deck to covering boards.