

Repairing Aluminium Framed Windows on a Catalac

After 23 years the windows on Redouble were leaking more and more. Various attempts at repairing them only worked for a short period and I was for ever covering them in gaffer tape etc. as a temporary measure.

I had made enquiries about new windows but the cost was somewhat large as I would have to renew all windows in one go to keep the look the same. Visiting the London Boat Show in 2004 I picked the brains of window manufactures and found out the sealing materials used along with tips and hints. After using the credit card, I was the owner of some tubes of black butyl silicone and grey non setting mastic along with a tooling block.

Next task was to get the old window back home.

As the boat was outdoors and it was winter I removed only 2 small or 1 large window at a time. The gaping holes left were sealed with ply held in by bolts and backing pieces. The whole lot was made weather resistant by tape and plastic sheet.

The window was taken home and stripped down into its component parts. The taking apart revealed corroded stainless steel screws that sometimes needed drilling out, or if I was lucky fell apart as the screwdriver was turned.

Once apart the toughened glass was cleaned by scraping and the liberal use of solvent cleaners. The best scraper was the type used to remove paint from glass and the best solvent, lighter fluid.

The aluminium frame was cleaned by using a 'blunt' screwdriver and various solvents such as acetone and lighter fluid. Even though I took care, the anodised finish to the aluminium was scratched in places but as this was on sections that would be covered or hidden with sealant I was not too worried.

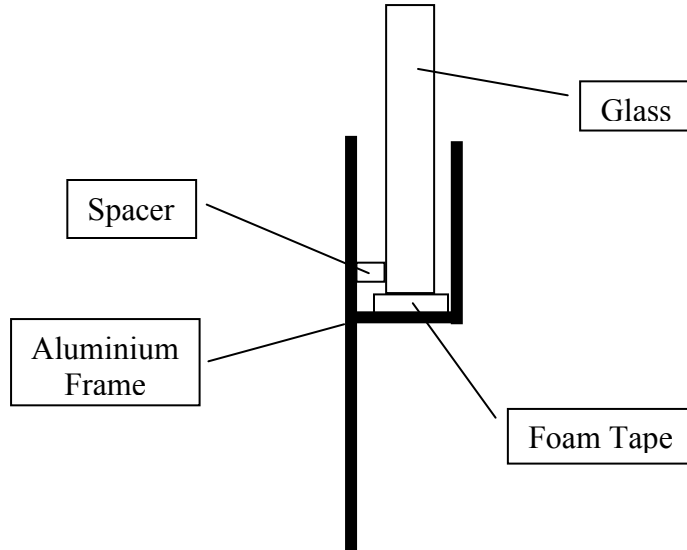
Now clean, remains of the corroded stainless steels screws were removed and the holes rethreaded to 4mm. I purchased the shortest counter sunk machine screws possible but at 16mm these still had to be shortened. A fiddly and time consuming business.

Once clean the frames and glass were dry run rebuilt. These showed up any problems and allowed for bits to be altered for a good fit. After the dry run had taken place the items were laid out so that they went back together in the same order. All the items were now degreased by using meths and paper towel.

On the final build the glass was held centrally within the frame by using adhesive foam tape. Where the stainless steel screws went in to the aluminium these had a coating of mastic to try and prevent future corrosion problems.

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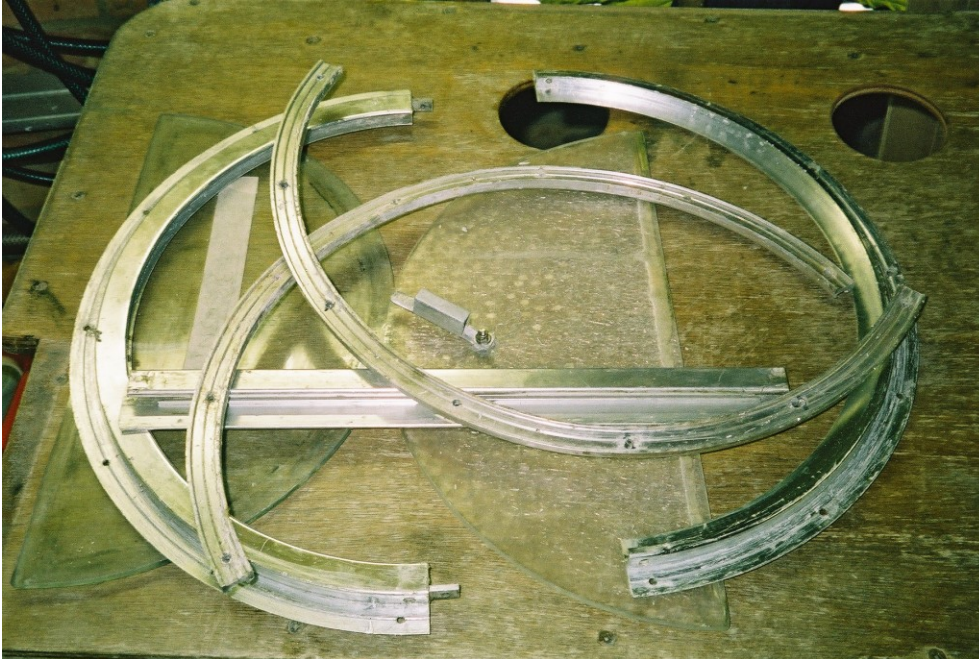
The frames were laid outside down and the black butyl was injected into the gap between the frame and glass where the old double sided tape had been. The frame was then turned over and the glass pushed down, oozing out the butyl. Spacers were then inserted into the 'new' gap between the glass and frame. More butyl was injected all round until it too oozed out. This butyl was then sprayed with soapy water and the tooling block was used to give a chamfered finish, a bit like the original rubber beading tape used.



This was now left for 24 hours to partially cure in the garage. A rough clean up was then done and the frame was removed indoors to fully cure (this was during the winter !). After 3 or 4 days the frame was fully cleaned and any excess sealant removed.

Refitting the frame should take place on a dry day ! The ply and plastic sheet are removed from the boat and the whole area cleaned up. Liberal amounts of acetone, paper towel and brass scourers are the best way. A dry run is done to make sure that the frame still fits in the hole and that the screw holes line up. Once done to satisfaction the flange is covered with the grey mastic. Again, apply liberal amounts to ensure that no gaps are left. The frame is eased back into place and screwed in. A person is needed inside to ensure that the screws pull up the inside clamping frame correctly. Once all the screws are in position I go around the frame a few times and tighten the screws up. Excess sealant is removed once it has skinned over by using a blunt screwdriver and then wiping with white spirit.

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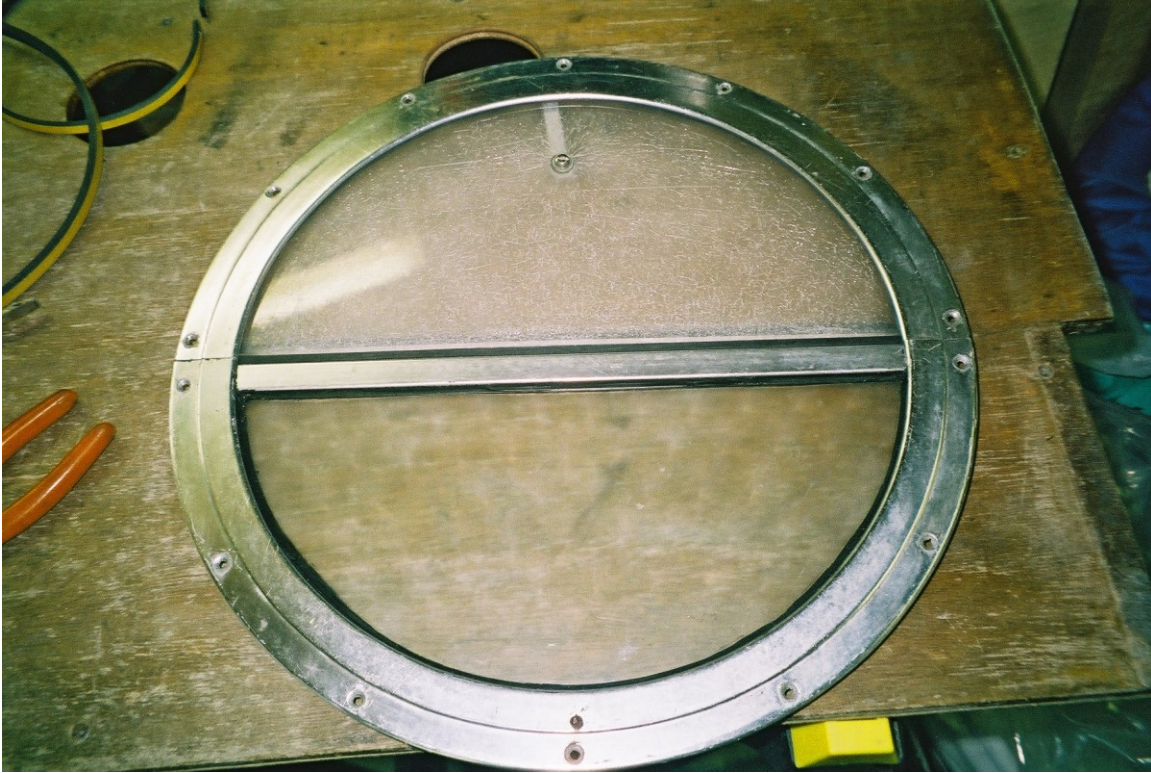


This picture shows one of the round aft windows all in bits after cleaning.



This picture shows where the frame comes apart and the old screws removed.

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This picture shows a frame rebuilt and sealed.

All the mastics and tooling block came from Houdini Marine Windows. They recommended black butyl silicone mastic to bed the glass in the frame and then grey non-setting mastic to put the frame back in position on the cabin top. At all times they emphasised that any shortage of sealant on the joints may allow future leakage, so if in doubt use more! I found that I used around $\frac{3}{4}$ of a tube per large window of butyl and $\frac{1}{2}$ tube of mastic. The tubes are the large size ones needing a dispenser 'gun' that can be purchased from builder merchants.

Other items worth purchasing are disposable gloves, paper towel (industrial type), lighter fluid, acetone, meths and white spirit.

It seemed to take around 12 hours to rebuild an average window frame, the time-consuming part being the cleaning. I had tried wire brushes etc. but kept reverting back to a screwdriver for the initial clean.

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Products used were:

Arbosil 1096 – non-setting mastic for sealing the frame against the cabin top.

Arbomast black – ‘bonds’ the glass into the frame.

These products were at around £6 per tube plus P&P plus VAT. The tooling block costs around £10.