

LEAKING WINDOWS

Background

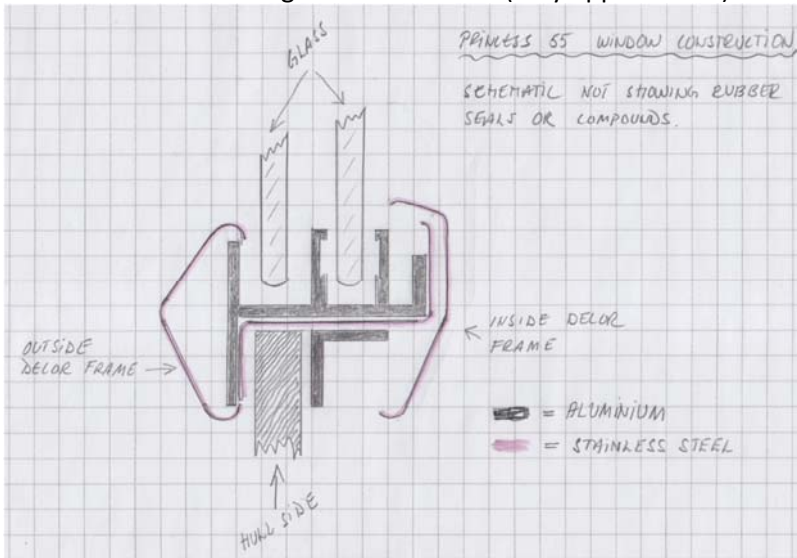
Leaking windows on older Princess (and other) boats is a common problem. On my boat I tackled the problem the winter 2011/12 and share my experiences here.

The problem in my case were the side windows in the saloon and wheelhouse area. The front windows are still OK, for reasons I will soon explain.

Why do they leak?

The main reason for the problem is in my opinion simply poor engineering. The window construction is quite complicated, built with external polished stainless steel frames and internal frames of aluminum. The outer ss frame is glued to the aluminum frame, the inner frames are separate. The side windows have a sliding window portion and seawater is frequently flushing and also remaining in the bottom section in the window runners.

Here is a sketch showing the construction (very approximate)



Stainless steel, aluminum and salt water. Mix it together and you have galvanic corrosion starting consuming the least precious metal, in this case the aluminum.

The phenomena becomes visible when the aluminum expand due to the corrosion and start pushing up the rubber seals looking like a white powder, an aluminum/ salt water mix. Looks really ugly like here on my saloon window.

In Helsinki where I am located by the Baltic sea, the salinity of the sea water is only 0,3-0,8% depending on the area compared to 3,2-3,8% in UK waters. So I can imagine your windows are even worse than mine.



The front windows are less prone to be corroded because there are no sliding window runners storing the sea water. This is lucky because taking them out is a job I wouldn't undertake easily. The removal of the screws at deck level look like a nasty task.

How to solve the leak problem

Well, you can call your local yard and order new windows! I never asked for an offer for a turn-key solution but I asked for offers for new windows.

The natural first source was Trend Marine whom I believe is the original supplier. Let's hope they have improved the construction! I haven't actually seen this problem on later than early 90's models.

I asked an offer for all windows, saloon, wheelhouse and also front windows, in all 7 windows.

In 2011 Trend marine offered a set 7 pcs of stls steel windows for GBP 13,900.00 and the same with aluminum frames for GBP 4,700.00.

I also asked for offers from GEBO in Holland and Ö-metall in Sweden. Ö-Metall make windows for Nordwest and many other well-known boats. The prices were in line with what Trend Marine offered.

I didn't want to have aluminum frames and the stainless steel ones were too expensive so I decided to try and do something to the windows myself.

Refurbishing the windows

In the beginning I want to point out that I am not a professional, not even very handy. However I am quite stubborn and not afraid to take on new tasks, especially those involving boats.

Taking out and apart the windows

First step is to remove the inner décor frames. Basically an easy job, they sit with nice looking polished round headed internal hex screws. "Basically" because they are fastened on the right thread, wrong thread and no thread. Not really clockwork engineering here. They are also cut to dozens of various lengths. Positive is that I found the same screws at a local screw dealer so they should be commonly available.

Now you get to the first inner aluminum frame. This is the counterpart to the frame on the outside of the hull side and again is fastened with multiple various screws. It easy to remove but the material is quite fragile so be careful when moving it around (see the sketch showing the construction).

Now all that keep the window in place is the compound gluing/sealing the window to the hull side from the outside. This seemed as impossible to remove at first but then I was advised to push numerous small wooden wedges between hull and window on the outside, about 20 cm between them and this did the job. Very quickly the pressure applied made the window come lose.



You need a friend now! The windows are heavy to move around. Move them to a safe place where nobody will break them more. I used my aft aft cockpit as a workshop.



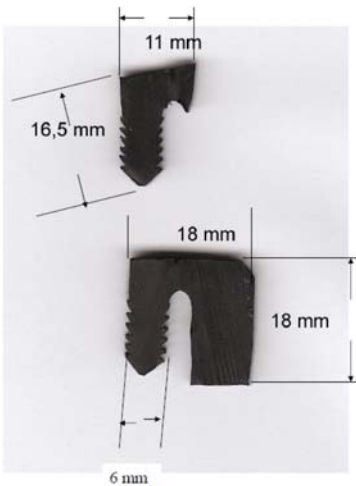
After taking out the windows I covered the openings with plastic and also put a support in the middle of the window openings.

Preparation and treatment



The outside ss frame is glued to the aluminum frame with butyl compound and it sits like...glued. I spent many weekends taking them apart using every kind of tool starting from everything in the toolbox ending up destroying the kitchen inventory of knives, forks etc. Without my Fein Multitool I would probably still be working on the project.

I spent many weekends cleaning and preparing the aluminum frames for painting. It would have been easier to bring them to be soda blasted or something but some of the frames were so corroded I was afraid there would be nothing left of them after being soda blasted. So I manually cleaned them as well as I could.



The rubber seals should be removed very carefully avoiding further damage to them because at least I was unable to find the correct seal profiles as replacement. I inserted the old ones and repaired the worst places with a rubber sealant.

After cleaning I carefully painted the aluminum frames with an anti-corrosion primer that I bought in a car paint shop.

Putting the windows back in place was a piece of cake compared to the removal. Again, you need a friend to help you. Important is to mask very carefully and put the window in place with one successful push. This because the butyl compound to be used as glue/sealant is very sticky and attach to everything even close by.

Result



I have now two seasons behind me and so far no “white powder” has appeared in the windows. Also the windows are 100% leak free.



Trend marine by the way have all the original window accessories available, locks, handles and more. I bought from them stainless steel window locks replacing the old plastic ones that begun to fall apart.

I am afraid I didn't have in mind to write this story at the time I did the job so the pics are not planned for the story. I hope they support the story in every case and feel free to ask if any question.

Stefan