

Protective Storm Glazing Procedure

We highly recommend that all stained glass windows be properly storm glazed to ensure a longer life.

Our Procedure is:

- Any existing storm glazing system would be removed and discarded by us. We would scrape any loose paint off and check for any hidden or obvious wood rot as well as cracks or other weaknesses in the wood frame. We would repair or replace these accordingly.
- After addressing the scraping and any wood defects we would prime as required and paint two finished coats of top quality paint.
- After addressing the woodwork and painting we would then install either the silver aluminum or the increasingly popular bronze coloured aluminum.

Our system covers a good percentage, if not all, of the exposed wood window frames by going brick to brick, which results in lower maintenance over the years relating to scraping, priming and painting.

- On completing the installation of the aluminum, we will then glaze the aluminum frame with vented: Plexiglas, Lexan, annealed glass, tempered glass or laminated glass.
- Tempered glass is not only five times the strength of ordinary glass, but also will keep its clarity over the years, unlike plexiglass and lexan and will assist in saving and protecting your irreplaceable stained glass windows from the increasing problem of vandalism. Tempered glass is used almost exclusively now with a very specialized sealant to assist in holding the glazing material in.
- We also caulk between the aluminum and the brick thereby creating a perfect double seal.

Proper Venting

Proper venting through the glazing material has, and will continue to be, an extremely important aspect with respect to storm glazing. I am finding that most stained glass windows storm glazed years ago have not been vented at all and those that have been done of late are not at all vented adequately, nor properly and only in fact will cause further expensive problems. I have therefore contributed a fair amount of space in this report on this subject.

There are two major issues that result from an inadequate venting system both of which are extremely costly down the road for the windows and wood frames.

- a. The heat build-up shortens the life of the stained glass windows, which results in the very expensive procedure of releading and restoring that much sooner. Heat is the worst enemy to the lead itself.

- b. The condensation which gathers on the inside storm glazing material is not allowed to dry and as a result drips down and ultimately causes the sills to rot and as well, through capillary action, rot will occur up the sides or verticals of the window frames which can lead to costly stained glass window repairs with them slipping within the frames. Not to mention wood repairs.

Some companies try to get around the problem by not addressing the moisture situation initially via properly venting but try unsuccessfully instead, to get rid of the moisture after it has collected and is sitting on the sills already having done damage to the wood and paint; in other words, an after the fact way of addressing the problem and unsuccessfully at that.

One of the most bizarre methods we have noted is cutting out the corners of the storm glazing glass so that where the storm glass is installed the vent hole is covering the wood sill and other wood parts resulting in no or limited ventilation occurring and in fact adding to the pace of rot in the sill and other wood parts themselves.

Others that we have seen is the drilling of weep holes into the wood sill and sides of the frames to allow the accumulated moisture to escape. This is not to be construed as a venting system and in fact adds to the deterioration of the woodwork once they are plugged with dead bugs, etc. regardless of what product is put in the holes to assist in keeping them open. Not to mention the fact that the walls of the holes cannot be treated properly with any wood preservative. Further to that the structural strength of the window sills and frames is reduced significantly.

We address the problem in a proactive way here at Trillium **Glass**.

Yet another example of a highly inadequate means of venting which we have seen is where the church walls consist of double brick and holes are placed between the storm glazing and the stained glass windows sideways into the air space between the two walls of brick or where there is some form of venting to the inside of the church, versus to the outside. These methods definitely do not allow for enough nor the proper type of ventilation and again will shorten the life of the stained glass windows as noted in A.

In working with many engineers, consultants and architects, they tell us that the only way to combat this problem properly is via venting the protective glazing material itself in from the corners and edges, which is what we are doing and recommending here at Trillium Glass. This ensures proper ventilation at the right time and consistently and does not take away from the structure of the wood frames. When all is said and done the only proper method when analyzing all aspects is the drilling of holes in the storm glazing material itself versus, for example, cutting away the corners and tops of the glass and installing a form of vent as noted earlier. Please note as well that we install a screen to the inside of our vents in order to assist in keeping out bugs.

Structural support is very important within the system itself.

In other words, that there are an adequate number of horizontal aluminum mullions and that they are located in the proper locations within the system itself. We have seen many situations for example where there are two or three separate pieces within the storm glazing system where there should be five or six pieces of material all dependent on the overall size of the window.

In traveling around the country these days visiting churches, we find that a lot of them have been storm glazed in the past via plexiglass or lexan screwed through the material and into the exterior wood frame and caulked without any perimeter framing at all holding it. This, of course, is done due to the fact that the supplier can not provide the aluminium that bends for gothic, circular or semicircle shaped tops, which if used would create a proper weather tight seal between the storm glazing and the stained glass window itself.

The problem with not using a perimeter frame is that there is a high expansion and contraction rate with plexiglass and lexan, which is dependent on the weather temperatures outside. This will then rip the screw holes in the material between the holes themselves and the perimeter of the material thereby allowing moisture to infiltrate and rot sills etc. As a result with any installation using plexiglass or lexan they must be in an aluminium frame to counteract the expansion and contraction of the material.

Further to the above, when the competition uses Sull Sash, or something that looks similar to ours, they glaze it with thinner glass to save themselves money. We glaze our storm glazing system with a 5mm or 3/16" material adding 50% more thickness and protection. It not only gives better insulating value which is a money saver with today's energy costs, but as well nothing less than 5mm should be used because of the size of the

pieces used in these particular windows due to wind load etc, caused by todays more violent weather patterns. It as well gives your windows better protection from vandalism.

To add to the energy efficiency of a building we are often removing the original old steel vents and replacing them with thermally broken aluminum vents either in the silver or bronze aluminum colour to match our storm glazing system.

Please [contact us for further information](#). We will be looking forward in hearing from you!

Where Quality Has Its Price, Price Alone Has No Quality