



# Frame Installation

**If you install window frames all the time, please don't assume that you know exactly what is needed. Please read this! For Fire Frames read this and next section as well.**

You need to think of this as a heavy brick wall sitting inside a light aluminium frame, not as a standard light weight window.

Fixings for the frame need to be maximum 600mm centres and most importantly, the sill of the frame needs to be packed and supported really well.

Think of a brick wall with a steel lintel over an opening that has to carry all of the weight of the bricks above it and how sturdy this needs to be.

Now imagine the sill of the glass brick frame having to do the same thing but is really flimsy and has no support to do it on its own.

The sill not only needs support to stop the middle from sagging but also needs support to stop the frame flexing and bowing the glass brick panel as it is being laid (think of a brick veneer construction, the frame may be packed and supported really well on the stud framing, but if the frame is spanning the wall cavity between the stud wall and the brick wall and only supported on the stud wall side, the weight of the glass brick panel will cause the unsupported side to flex and sag down causing the glass bricks to bow outward ever increasingly as the panel gets higher and heavier.

Support must be provided to prevent this flex from happening, even if it is temporary until the glass block panel has set and is rigid. After it is set any temporary support can safely be removed.

This same flexing of the frame can happen if packed unevenly along the sides of the frame - the installer puts his spirit level/straight edge on the inside of the frame fixed to the stud wall, sees that all is level, plumb and straight and leaves it there without checking the outside edges where the frame is not attached to anything yet (ie: the outer brick skin hasn't been laid up against the frame yet) and doesn't notice that too much tension in the fixings or badly placed packers has caused the frame to bow on the outside face. This will be noticeable with the joint lines of the glass bricks on the outside.



# Fire Frame Installation

**(Everything you read in the previous section - Frame Installation is applicable as well as what is written here, please read both - as annoying as that may seem, it could make a world of difference to the success of getting Fire Certification!)** There are some extra things to consider with preparing for and installing glass brick frames for fire rated panels.

Firstly, the frame itself is not considered to be fire rated, it is more a type of permanent form work housing the mortar and expansion fire wool. The frame will melt in a fire being aluminium and having a relatively low melting point and the panel will still remain in place keeping a fire at bay due to the specific way it is installed.

There is a complex system of steel reinforcement running through the mortar joints between the glass blocks that actually extend out through pre-drilled holes in the glass block frame and into the surrounding fire rated building structure. It is this reinforcing system that will hold the panel in place when the frame is compromised but only if the following criteria is met:

**There must be a solid backing behind the frame for these reinforcing rods to fix into** (you cannot simply have the aluminium frame spanning a wall cavity like a standard window as these rods must be fixed into something not sticking into the air!) There also needs to be a physical barrier for smoke and flames once the edges of the frame have melted.

**There must be a relatively small gap 10mm maximum between the frame and the structure** that these reinforcing rods will fix into (These rods are only 6mm in diameter and will be very strong and able to withstand pressure created by extreme heat without the panel moving but only if the gaps are small - think of holding a 6mm thick steel rod that is 400mm long in your hands with your grip far apart and try to bend it... easy right? Now think of trying to bend a 100mm long rod when your hands are right next to each other.... it's a lot harder to bend!).

**The pre-drilled holes in the glass brick fire frame MUST NOT be used for fixing through**, they are located exactly where the reinforcing rods must penetrate the frame through the corresponding mortar joints and cannot be moved. Make your own fixing holes wherever else you need to.

**The gaps between the glass brick fire frame and the building structure must be sealed with fire rated caulking material.**