



Perimeter expansion joints

Glass blocks will expand and contract by 0.25mm per 25°C temperature change. Soft expansion joints must be incorporated into the perimeter between the substrate opening and block, being caulked with a white silicone (or fire-stop mastic). This will visually look similar a standard mortar joint.

For the head and jambs of an opening, 10mm-thick foam is used. This is a white expansion fibre. The horizontal expansion joint between the first row of glass blocks and the base of the opening is formed using high-density bitumen or neoprene material to supports the weight of the panel. Alternatively two coats of bitumen emulsion can be applied as the barrier between the bottom course mortar joint and base of opening.

Joint sizes and spacer pegs

10mm is the most common joint size for specifying and building glass blocks. A 190x190mm block plus a 10mm spacer modulates to 200mm. Spacer pegs serve multiple functions:

- They prevent mortar squeeze, increasing the number of courses that can be constructed in a day.
- They prevent stainless steel reinforcement bars coming into direct contact with the glass block as metal and glass have different expansion and contraction properties.

When a spacer peg is fitted and the wall is finished, the tabs at the end twist off and can then be grouted over.

Other spacers are available for 80mm-thick blocks - 6mm x 6mm and 6mm x 10mm and also for 100mm-thick blocks - 10mm x 10mm

Building freehand is not as accurate as using spacers; weight compression could cause the blocks to slump or joints to be uneven.

Panel reinforcement and tying back to the perimeter opening

Stainless steel ribbed reinforcement bars are used to tie to the opening. The rods penetrate the expansion material and anchor the panel in place by connecting to the perimeter frame. This can be located by drilling an over-sized hole a minimum depth of 25–35mm and should be filled with silicone to cushion any movement of the re-bar.

Rods are 1200mm long and when the panel is larger than the reinforcement bar, rods are overlapped by a minimum of 150mm and are loosely joined using tie wire/cable tie.

One reinforcement bar should be used in each horizontal and vertical joint as a minimum. More rods may be required if using end glass blocks or a TF30 or TF60.

For situations where connecting the rods to the opening may prove difficult, panel anchors can be used (similar to the brick-tie principle secured by either screw or bolt-fixing or can mechanically shot fired).

