Precast Floors

Specifying glass block flooring

At concept or feasibility stage there are a number of items to review before the specification or detailing process can begin. Initial questions to ask are:

- Will the elements be subject only to pedestrian traffic or vehicular loads?
- What loading requirements should the panels achieve?
- Is the precast and glass required to have a fire rating? What fire integrity and thermal isolation rating is required?
- What is the opening size and have you incorporated expansion joints?
- What type of bearing, perimeter frame and intermediate support do you need?

Most building regulations will require glass block flooring to achieve a minimum of 5Kn per square metre. Precast strength is achieved based on various factors:

- Block type, joint, border width and thickness
- Quantity and gauge of steel reinforcement used
- Panel size
- How many sides the panel is supported on
- Length of any unsupported span

The panel should be designed around the perimeter opening dimensions. Once panels are poured they cannot be altered, added to or cut, so planning the opening size and preparing the bearing is critical.

Ordering precast glass block flooring

Precast is always produced to order and not available as a stock item. Before being cast production drawings must be checked and signed off. It is imperative to allow lead time for curing and production.

Allow a minimum of between four and six weeks, excluding holiday periods, dependent on the number of panels required.

Joints and borders

As every flooring project is unique, panels are made specifically to suit. Border widths are a minimum of 70mm and joints 30mm wide. The perimeter framing or intermediate support bearing that the panel edge rests on must never be less than 40mm wide.

Fire-rated panel joints and borders have to be produced in accordance test data specification (available on request).

Calculating the opening size

Calculating the opening size is unique to each project. The dimensions will be determined by the block width, joint and border width, bearing, perimeter and intermediate expansion joint width and onsite tolerances.

Loading strength

Investigating what performance criteria is required of precast flooring at feasibility stage will offer advantages regarding what type of panels can be used. The size and type of support structure/pier would be most suitable, for example: steel, brick or concrete. These decisions can ease knock-on effects later. Even though glass block flooring is treated as a finishing trade, the planning is best considered as the building superstructure is being designed.

Loading calculations for panels are worked out based upon the type of block, width of joint, border, gauge, quantity of reinforcement, depth and length of the panel and the number of sides supported. If the bearing supports the panel on only two or three sides the loading strength of the panel(s) will be reduced calculable on the unsupported span.

The quantity and gauge of steel reinforcement is based upon the panel size and loading requirements or fire rating specification. A minimum of two reinforcement bars are used within the joints and generally more within the perimeter border. The diameter will be determined by the performance and is between Ø6, Ø8, Ø10 or Ø12mm.

The mortar used to make prefabricated glass block slabs is based upon a Portland cement mix.

Two styles of panel finish are available:

1. An oatmeal colour, smooth trowelled finish.
2. A grey colour, textured finish.

Paver Shells and Hollow Block

Ref	P12.60	P15.80	PR12.60	P19.100
Dim in mm	120x120x60	150x150x80	Ø120x60	190x190x100
Weight/paver	1.2kg	2kg	1.1kg	3.5kg
Quantity/m²	33-40	23-28	33-40	15-18
Surface	Clear	Clear	Clear	Clear
Appearance	Ribbed	Ribbed	Clear	Frosted

P19.100 sandblasted top, colour: oatmeal, finish: smooth, Precast Floor Panels.