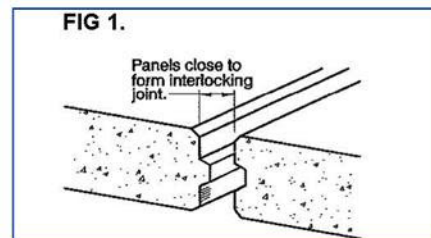


Milbury Systems is an ISO 9001:2000 registered company specialising in prestressed concrete solutions for retaining, storage and cladding structures.

Milbury's prestressed concrete panels have interlocking tongue and groove joints, providing load transmission (figure 1) whether installed side by side vertically or one on top of another horizontally.

Milbury Systems is experienced in all aspects of concrete engineering involving prestressed units. They will find the most economical and appropriate structural solution to each individual project.



TECHNICAL SPECIFICATION

Panel thickness: 80mm, 120mm, 160mm and 200mm

Panel widths: 1.0m, 1.2m and 1.5m

Panel lengths: to suit the project, limited by load/span and handling considerations

Design: generally to BS8110, 1997

Manufacture: The panels are cast in purpose made steel moulds in our own factory under a strict quality control regime

Installation: Whilst the Milbury system is designed for ease of installation, panels can be installed by Milbury's own teams if required

Concrete: A design mix using compatible aggregates and cement to provide a nominal concrete strength of 60N/mm²

Reinforcement: The prestress is imparted using 7 wire core strands on long line wet cast production

Surface finish: Generally a class A steel mould finish on three sides with hand floated upper surface

HORIZONTAL PANELS

Milbury horizontal panels provide the fastest and simplest method of walling a structure, by being secured against the building frame or cantilever columns.

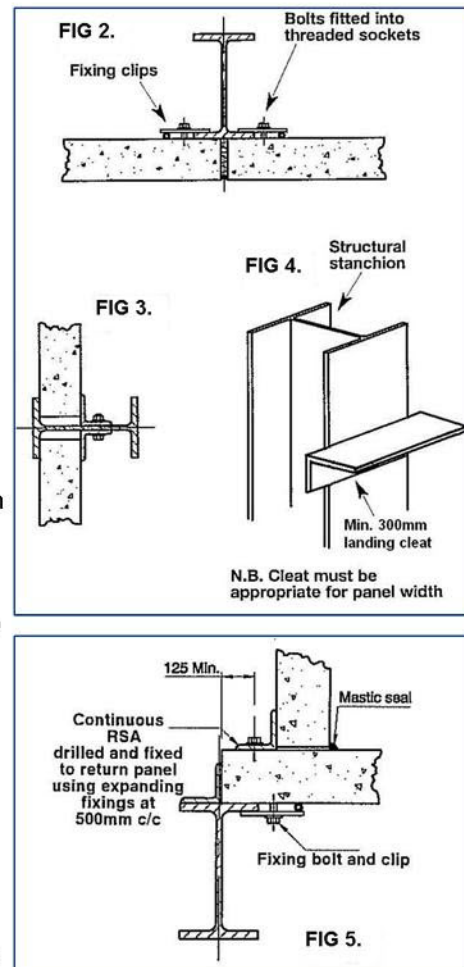
The units are placed and centred against the columns then secured using the steel fixing clips, bolts and cast-in sockets (fig. 2). Alternatively, the panels may be fixed within the columns against flange and held in place with a retaining angle (fig. 3).

The panels may be allowed to rest on the floorslab as no special foundation is required, or can be seated on suitable landing cleats, as in figure 4 (please refer to Milbury Systems for appropriate sizes). A soft packing should be used between cleat and panel where the bay length exceeds 4.5m or the height 3m.

Adjoining panels are erected similarly, leaving a 10-20mm gap between units at the centre of the column. Panels are lowered, male joint uppermost, onto the panel below.

Corner details are typically as in figure 5. Milbury will be happy to advise on the appropriate size of corner angle and type of fixings.

The panels are sealed after they have been installed. Where a watertight seal between the bottom panel and floor is required, the panel can, in some circumstances, be concreted into the floor with a top seal between the outside of the panel and the concrete ensuring a waterproof joint.

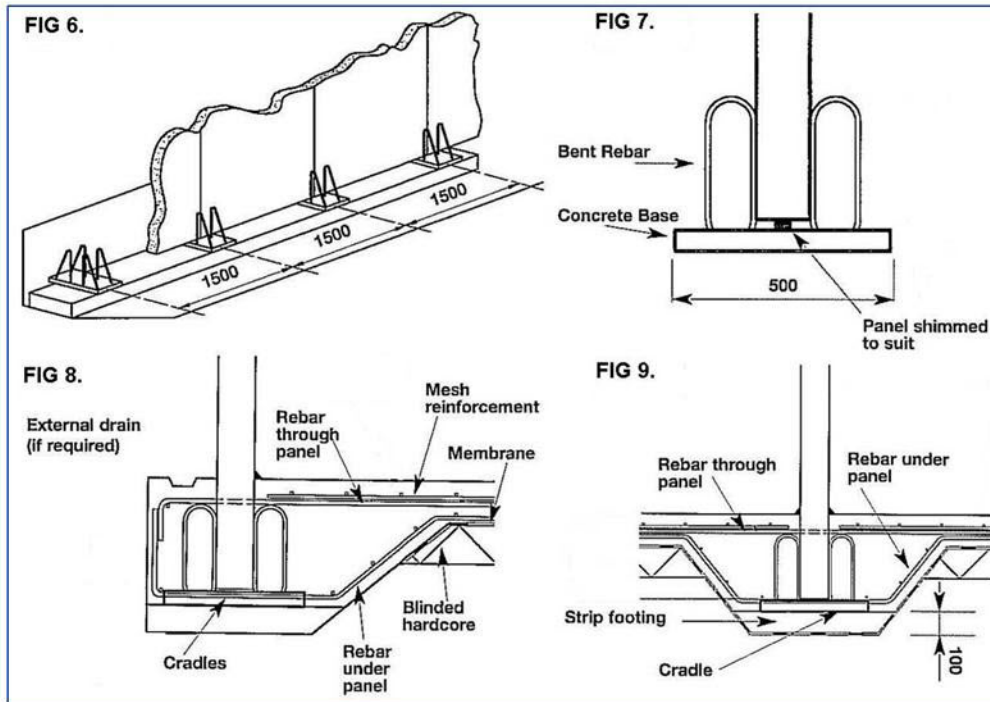


VERTICAL CANTILEVER PANELS

These are normally supplied with the appropriate reinforcing cradles and reinforcement. The foundation trench is excavated and a strip footing formed in the base (fig. 6). The cradles (fig. 7) are set out on the footing, and the panels lowered into them, shimmed and levelled as necessary. Temporary propping must be used.

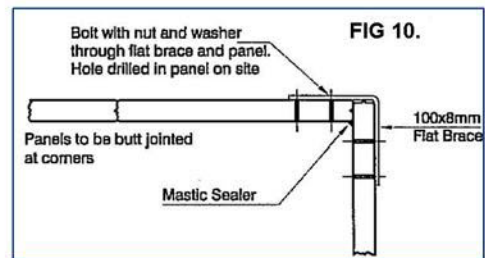
Reinforcing bars are passed through the preformed holes in the panels, and under the panel. Concrete is then poured and vibrated into the foundation, securing the panels and allowing props to be removed when adequately cured. Sealant is applied to the vertical joints. The reinforcing mesh is secured over the reinforcing bars, and the floorslab cast over the foundation, ensuring good compaction against the wall at back and front (fig. 8). A modified foundation is required for double loading panels (fig. 9).

All corner vertical cantilever panels should be erected as illustrated in figure 10, preferably lapping each other and not corner to corner. A bracket may be then fixed near the top at a corner wherever the joints are to be sealed. This is to limit differential movement between panels, which could, in time, break the seal.



Note:

The reinforced concrete should generally extend continuously at least 2.4m from the panel face. Fibres are not a suitable substitute for steel mesh above the foundation.

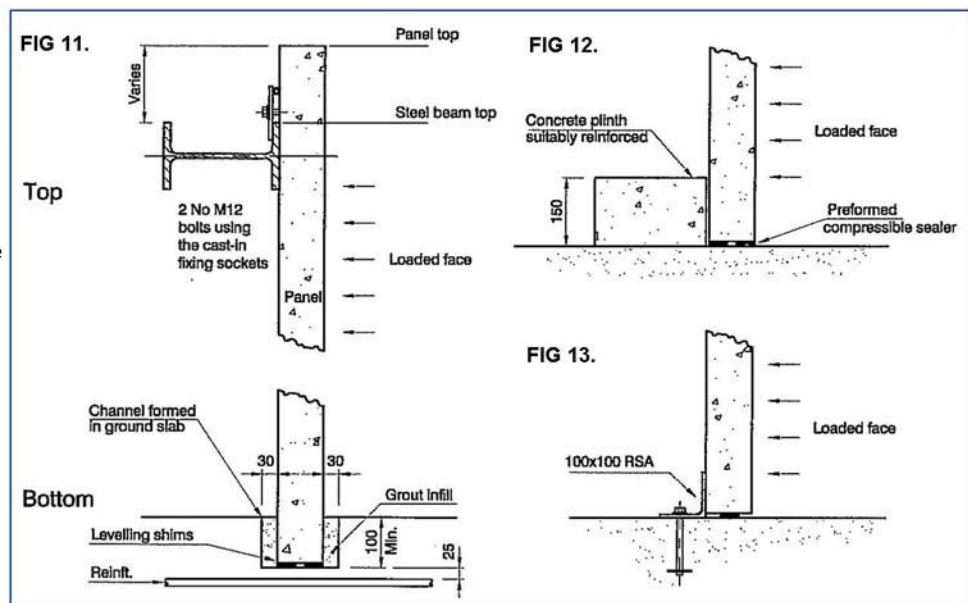


PROPPED VERTICAL PANELS

Supported within a preformed channel in the floor and against a steel header beam, Milbury propped vertical panels are capable of remarkably high storage depths. A proportion of the load is taken on the building frame, the remainder into the floorslab.

Panels are lowered into a preformed channel or other base fixing and secured against the top beam by means of the standard fixing socket and plate (figs. 11-13).

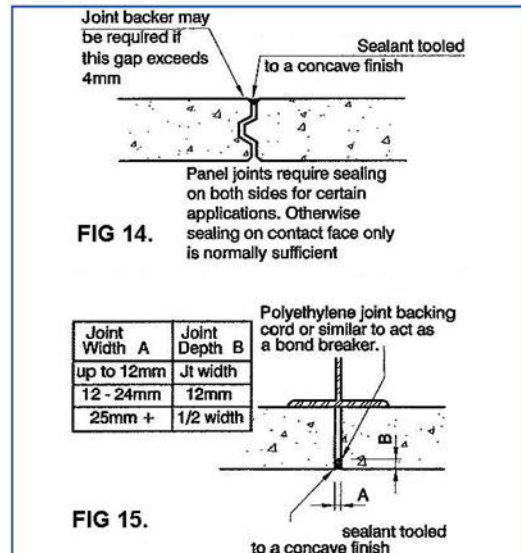
The panels are then sealed and grouted.



SEALING OF PRESTRESSED UNITS

The tongue and groove joint allows a group of panels to act as a single unit. Therefore when sealant is correctly applied an effective watertight joint can be created which is immensely durable because it is not challenged by differential movement (fig. 14). Vertical butt joints between units should be sealed as in figure 15.

Milbury Systems offer a single part urethane sealant, which is suitable for most applications including potable water and most potential pollutants. Intumescent and other special seals can also be used.



PRESTRESSED PANEL APPLICATIONS:

EARTH RETAINING WALLS

STORAGE FACILITIES

WAREHOUSE CLADDING

SECURITY WALLS

BLAST & FIRE WALLS

RECYCLING FACILITY PUSH WALLS

WATER ATTENUATION TANKS

FLOORING

ACOUSTIC CLADDING & BARRIERS

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