

Panel Construction

After the floor slab has been cleaned, the tilt-up panels are outlined directly on the floor slab with chalk. The chalk lines can be sprayed with a coat of bondbreaker to prevent rain from washing them away. The panel edge forms, and any opening forms can then be set in place.

Fog the casting area with clean, potable water prior to application of the bondbreaker. The fogging should saturate the slab, but any standing water must be removed before the bondbreaker is applied. The bondbreaker should be applied in a two-coat application; the first coat of the material sprayed in one direction and the second coat sprayed perpendicular to the first. Be sure to let the first coat dry before applying the second coat. Applying the bondbreaker in this manner will help ensure a smooth, uniform coating.

Check the slab and bondbreaker before pouring any concrete. The slab should have a slightly tacky, soapy feeling. Bondbreaker can be tested by dropping a small amount of water on the casting bed, from two feet above to allow it to splatter. If the bondbreaker is applied correctly, the

water will bead into small droplets as it would on a freshly waxed automobile. If the water does not bead, respray all of the suspected areas of the casting slab.

When all of the panel preparations are complete and the panel is ready for placement of the concrete, the entire panel area should be fogged with potable water to be certain that the pores of the concrete slab have been properly saturated. Make sure there is no standing water, and proceed with the concrete placement.

The panel concrete must be properly consolidated using an appropriate concrete vibrator. It is preferable to use the vibrator in an up and down motion. Laying the vibrator horizontal and dragging it along the reinforcing steel will often leave the pattern of the rebar visible on the down side face of the panel. Avoid over vibration; it may cause segregation of the aggregate and bring excess water to the surface.

Preparation for Lifting

Clean the panel and the surrounding floor slab area. Locate and prepare all pertinent embedded devices that are accessible. Do any dressing or patching that can be accomplished on the ground. Attach all pipe braces and strong-backs as required.

Each panel should be numbered and clearly identified according to the panel layout/erection sequence plan. Place the identifying mark in a position that will not be exposed when the structure is completed. The structure footing should

also be marked with the corresponding identifying numbers to give the erection crew clear indication where each panel goes. The footing should be appropriately marked to show the proper position of each panel on the footing.

All lifting inserts should be uncovered, cleaned out and tested with a hardware unit several days prior to erection day. Rotary hammers, drills, leveling shims, cutting torch, steel wedges, pry bars, level and plumb bob and a full set of hand tools should be available at the job site.

Panel Erection Hints

Several aids are suggested to help make the erection process safe and efficient:

1. Prior to erection day, install leveling shims with a level so that the top of the panels will be in line. Grout should be placed around the shims to hold them in position.

2. After the panels are erected and braced on continuous footings, grout should be placed under each panel.

The grouting should be done as soon as possible after erection. Make certain that the void between the panel and the footing is completely filled with grout.

After the Lift

When constructing the floor slab, a perimeter strip, generally three to five feet wide is often open to facilitate the footing excavation. This excavated area can be up to five or six feet deep, depending on the building design, and won't be backfilled until after the wall panels have been erected. The perimeter strip must be backfilled and compacted very carefully to avoid movement or bending of the panels.

Usually there are reinforcing steel bars projecting from the slab into the perimeter area which will overlap the bars that project from the panels. If the panel is a "dock-high" panel, it may be best to weld the floor rebar to the panel rebar. After

the backfill is in place and properly compacted, concrete is placed into the perimeter strip to connect the floor slab to the wall panels.

Wall braces should never be removed until all structural connections are complete. Note that the perimeter strip between the floor slab and the wall panels is considered a structural connection.

If the building's structural drawings do not indicate when the braces can be removed, the engineer of record should be consulted.