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Precast Capping Beam Formers

Application

Ideal for all Bored pile walls, contiguous or secant, with a simple capping beam where the precast units can be left in-situ.

For walls with a capping beam that has beam, slab or column connections, the units are removed and piles are left at cut-off level.

Both applications eliminate the need to break down piles.

Advantages

- Pile position tolerance is reduced to the practical minimum.
- Pile alignment is significantly improved.
- Pile positions are immediately known, there are no delays trying to find pile setting out pins or replace them.
- No breaking down of piles.
- Excavation on pile completion so programme time is saved.
- The works are more environmentally friendly and look professional.

Patents

UK Patent No. GB2349395
Europe Patent No.
EP1090189 (Sweden, France, Netherlands)
US Patent No. 6394703
Germany Patnt No.
60002810
International Patent No. PCT/IB00/00504 (EP, US).



All bored pile walls require a capping beam to connect the piles together. Cementation Skanska has developed a system that enables the formation of the capping beam using high quality precast concrete units.

The Process

Precast units of normal depth 500mm and width equal to the pile diameter plus 300mm are cast with holes corresponding to the bored pile wall pile spacing. The maximum length is about 4m so that they can be handled by a normal excavator.

On site, a trench is dug to a depth to suit the cut-off level of the piles and the trench is blinded over the capping beam width.

The precast units are placed in the trench to give a pile positional tolerance of +/-10mm. The sides of the trench are protected by plywood sheeting and leanmix concrete placed around the units to fix them in position.

Contiguous Bored Pile Walls

The piling rig installs the piles through the precast units and the pile concrete is trowelled off level with the top. On completion of piling, excavation in front of the wall can commence immediately.

Secant Pile Walls

The units are initially positioned for the firm (female piles) and after installing each pile, the concrete is scooped out down to blinding level. When all female piles are installed the precast units are then repositioned half a pile spacing by sliding the units along the blinding. They are now in position for installation of hard (male) piles. The male piles are then installed in the same way as normal contiguous piles.

Capping Beam Variations

If the capping beam forms part of the subsequent structural works, the concrete in the male pile is also scooped out so the units can be removed.



With the precast units removed, the result is a blinded, shuttered trench with all piles at cut-off level, ready for in-situ capping beam construction.

