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Smooth all-round shuttering surfaces with a new production system

Upcrete Systems displayed creative answers for handling self-compacting concrete at the Bauma. Upcrete stands for concreting under pressure from bottom to top in a mounting stream. The scientific basis for this concreting method and technology has been subjected to thorough theoretical investigations in the intervening time and Upcrete is currently in the process of putting these basic theories into practice. In CPI 1/2007, the system was presented to public scrutiny for the first time. At the Bauma, further important advances could be seen.

In this process, the filling inlet is an essential detail. The Upcrete inlet is the coupling point between the feed pipe attached to the concrete pump and the shuttering, and is capable of generating smooth shuttering surfaces. Due to its design, no hardened concrete remains in the inlet connection which does not have to be dismantled for cleaning after concreting. In fact, cleaning is limited to washing out a litre of fresh concrete. The filling inlet, which can be supplied in three standard sizes, DN 50, DN 70, DN 100, finds general application in precast production facilities and at the construction site.

With these new possibilities in mind, the Upcrete Team carried out tests on a standard concrete product as one example of the many utilisation instances of pumped concrete. A smooth, double-sided solid wall can manufactured absolutely economically using battery shuttering with the Upcrete system.

The shuttering is composed of an outer pair of formwork sections into which a twin pallet can be inserted. This twin pallet will have been fully prepared (magnetic longitudinal stops, reinforcement, installations etc.) before its insertion into the shuttering. The separation between the outer shuttering and the inserted twin pallet makes it possible to continue work and preparation outside the fixed outer formwork pair. Ideally, a production line should be equipped with a greater number of twin pallets than outer formwork pairs so that the next twin pallet can be prepared whilst the last twin pallet is being concreted into the outer formwork pair or is hardening. The smallest production process possible would be one stationary outer pair of formwork sections and two twin pallets. With increasing sales volume, the quantity of outer formwork sections can be increased with a parallel increment in twin pallets in line with preparation times.

The plant can function on a small scale with a simple insertion device for the twin pallets or else, in the next stage of expansion, employ more specialised techniques (post-hardening, lifting, cleaning, laser projection for forming and positioning assembly parts, reinforcing, etc.) in the form of a circulation line.

The following bear testimony to its efficiency and quality:

- Extremely rapid concreting times
- Excellent surface qualities
- Unsoiled concrete matrix free of macro-pores with minimal air content
- Superb construction part dimension tolerances
- Smooth shuttering surfaces or patterns on all sides
- Concreting is rendered very straightforward as no work takes place on the shuttering
- Simple production facility logistics as many expensive machines needed for horizontal production are done away with
- Plant capacity enlargement is very uncomplicated
- Extra low production area requirements

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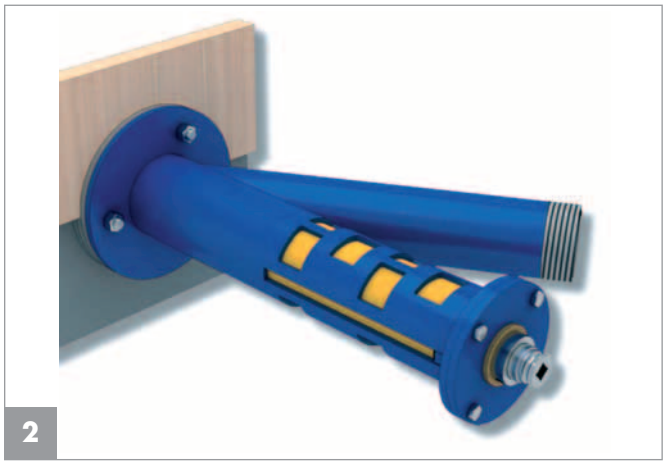
UBS Upcrete Battery System – battery shuttering for the efficient, vertical manufacture of large-surface precast elements



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UCI Universal Concrete Inlet for the precast concrete component technology of the future

Advances in Upcrete battery shuttering

All preparatory work on the vertical wall can be carried out at a comfortable working height without bending or stretching, as the wall height adjustment is controlled by an automatic stop on the upper wall section and concreting takes place from underneath. This protects employees' health, keeps the working area clean and raises productivity.

The pressure resistant shuttering design and the hydraulic shutter locking devices also enable the most varied types of special concretes to be utilised: normal concrete, lightweight concrete, cellular concrete and heavyweight concrete. The narrowest cross sections and the most difficult geometrical patterns can be filled with no gaps.

At the Bauma, Upcrete also launched a new and innovative module house design. This promises undreamt of scope for dwelling space creativity whilst marrying efficient shuttering and concreting technology to revolutionary architecture and structural planning. The latest information about this module house design can be found on the website www.upcrete.com.

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