

Tilvirket fra artikel bragt i CPI World Wide, februar 2010

New mobile concrete batching plant can replace a small concrete factory

60,000 m² floor for a new storage hotel on the outskirts of Paris. This was the task faced by fibo intercon's client, whose company is based in Luxemburg. The project, however, was associated with logistical difficulties. First and foremost the concrete had to be delivered continuously which according to calculations required 10 truck mixers each day to go back and forth between the concrete factory and the construction site. Another challenge was the traffic difficulties which frequently arise in and around the French capital. Thus, great risk was associated with having a concrete factory supply concrete for the project. Therefore fibo intercon's customer started looking for other solutions.

The solution was found at fibo intercon, a company which manufactures concrete batching plants, concrete systems and equipment for the global concrete industry. The two companies had already for some time discussed the possibility of developing a concrete batching plant that could meet the customer's requirements and needs. But when the order for the 60,000 m² floor in Paris finally was within reach, the joint project was speeded up.

In the process the two companies have worked closely together on the technical clarification. All details and options have been discussed thoroughly, and adjustments have been made. In May 2009 the finished batching plant was ready for production at the construction site near the storage hotel in Paris.

The concept

The newly developed concrete batching is characterized by high mobility and flexibility. The individual units are mounted on swap loads with hydraulic legs, making it easy to move between projects. When the batching plant arrives at the construction site, it takes about one day to erect it. None of the units requires a cast foundation, but can be placed on a level surface. This allows the contractor to begin concrete production almost right away.



The batching plant consists of three units. The first unit is the mixing unit. This consists of a strong counter flow mixer, a cement pre-weighing system, an inlet funnel for reception and dosage of aggregates from the connected modular in-line silo, two additive pumps, an 8000 litres water tank built into the swap load and frame, a generating set and a cabin for operation monitoring. All components are mounted on a single swap load. The counter flow mixer has a volume of 2250 litres gross/1500 litres net and is driven by a 75 kilowatt electric motor. The cement pre-weighing system, the inlet funnel for reception and dosage of aggregates and the additive pumps are all designed to ensure a fast and effective dosage of aggregates to the counter flow mixer. The batching plant also has parallel dosage of water and aggregates, reducing cycle time, wear and tear on the mixer and energy consumption. The result of all this is a counter flow mixer with a cycle time of just 1 ½ - 2 minutes. The mixed concrete is emptied out through a discharge gate at the bottom of the mixer and onto a 14 meter long belt conveyor. This leads the concrete into a waiting concrete truck, which brings it to the nearby construction site.

The cabin for operation monitoring is "the bridge" of the batching plant. It contains both a table, chairs and a Siemens control system. fibo intercon has chosen this particular control system because it is possible to get parts for it all over the world. The control system monitors all processes and connected equipment, and the integrated printer makes it possible to document the concrete production. The control system can also be linked up to an ordinary PC making it possible to store and process data.

A generating set installed in a soundproof cabinet is placed behind the cabin. The generating set consists of a Mecc ECO38 Alte-2SN/4 power generator, a BF6M 1013FCP Deutz diesel engine and a 1247 litres diesel tank. This provides all plant units with power.

Besides the above mentioned features, the mixing unit is also equipped with a compressor, a high pressure cleaner for cleaning the plant and an installation for high pressure cleaning of tools. And as extra customized features the batching plant is equipped with flag poles and outdoor lighting.

The second unit is a modular in-line silo with four silo cones mounted in a common frame structure on a swap load. The silo cones have low load height which makes it possible to fill them with a loader tractor or the like. The flexible partition between the silo compartments makes it possible to divide the modular in-line silo into two or four compartments, for instance, two compartments of 11 m³ and two compartments of 12 m³. Thus the silo can be adapted to the number of aggregates required for the individual project. Two of the silo cones are equipped with humidity sensors at the bottom. This enables the batching plant's control system to automatically correct for water and sand dosing in accordance with the signal from the sensors.

From the silo cones aggregates are dosed via dosing conveyors down unto a weighing belt mounted on load cells. When the control system gives signal, the weighing belt transports the aggregates to a 14 meter belt conveyor, which transports them further up into the already described inlet funnel on the mixing unit. There the aggregates are stored, until the mixer is ready for the next batch.

The third and last unit is two 30 m³ horizontal cement silos. The silos are equipped with injection and top hatch making it easy to fill them with cement either by truck or with big bags. In addition to this equipment, the cement silos are equipped with automatic self-cleaning filter, cement auger, vibrators, air pads and valves. A ladder leads to the top of the cement silo which, at the request of the customer, is equipped with a railing to meet personnel safety requirements.

The future

In this way, fibo intercon has developed a "rolling concrete factory" that can handle even larger construction projects. Sales manager Erik Roos says: "We are convinced that the market will welcome our new batching plant. Contractors now are able to undertake projects that previously were less attractive because of the difficulties and risks associated with them. The new possibilities bodes well for the industry and for our new batching plant's future."
