

### New Liebherr Mixing Tower incorporated by Hans Rinninger & Sohn GmbH & Co. KG for the production of Concrete Goods

- Implementation of 2x RIM-D 2.25 m<sup>3</sup> and 1x RIM-M 0.5 m<sup>3</sup> ring-pan intensive mixer
- Variable production of ready-mixed and high-strength concrete
- State-of-the-art microprocessor control

**Kißlegg (Germany), 6 March 2015 – Liebherr's proven quality and reliability is once again underscored by Hans Rinninger & Sohn GmbH & Co. KG (RIKI) with the new Liebherr mixing plant Betomat IV-515.**

After 42 years of flawless operation, Hans Rinninger & Sohn GmbH & Co. KG in Kißlegg (Allgäu) have opted to replace their existing Liebherr mixing plant with the incorporation of a new Liebherr mixing tower Betomat IV-515 in their factory producing prefabricated elements and concrete goods. Featuring a capacity of up to 515 m<sup>3</sup> of aggregates in ten silo chambers, the new mixing tower conveys material of up to 32 mm grain size via galvanised belt-driven bucket elevator with a delivery rate of 140 m<sup>3</sup>/h. In addition, the plant also includes six cement silos each with a holding capacity of 100 t.

The Rinninger concrete factory has been specialising in the production of high-grade concrete goods for the structural engineering, civil engineering, landscape gardening and surface drainage sectors, as well as the production of prefabricated elements for over 100 years. Once again, the proven quality and reliability of Liebherr are brought to the fore by Rinninger with the new mixing plant Betomat IV.

#### **Flexible and efficient production with state-of-the-art equipment**

The new Liebherr mixing plant is equipped with three ring-pan intensive mixers. Each of the two RIM-D 2.25 features a mechanical double agitator providing agitator speeds of up to 100 rpm. They can be used for the mixing of ready-mixed concrete or for all types of high-performance concrete (UHPC). Mixer speed or agitator speed can be modified via frequency converter for the various concrete recipes accordingly during

the mixing process. The third mixer - a RIM-M 0.5 m<sup>3</sup> featuring mechanical agitator – serves predominantly for the production of concrete goods, however, may also be used for filling of the truck mixers.

A flexible mixing plant is essential for Rinninger in order that the company can provide custom-made solutions as an immediate response to market requirements. The new Liebherr mixing plant is therefore equipped with two weighers respectively for the weighing of aggregates, cement, water and admixtures, as well as featuring a pigment weigher. Discharge of the concrete is accomplished by two mixers, either directly into truck mixers or into the affiliated bucket transport system for the production of prefabricated concrete elements. Enhanced capacity of the new plant ensures a considerable increase in the number and size of orders, as well as extremely quick realisation.

An upgrade of the system is also possible. Should higher production volumes be required, the Liebherr mixing plant is designed to accommodate subsequent installation a fourth ring-pan mixer. As well as the high-grade components, an almost completely galvanised steel structure guarantees extremely long life-expectancy. In order that flawless operation can be guaranteed even during the cold winter months, the entire plant is insulated with plastic-coated façade cladding and is equipped with a heating system. This configuration allows Rinninger to respond to the most diverse requirements of modern concrete production.

### **Mixing processes visualised on monitors by the plant control**

Control of the plant is realised via a state-of-the-art, calibratable microprocessor control. This control monitors the batching sequence specific to the respective recipe and relays the procedural cycles to an array of visualisation screens.

Adjusting consistency for a mix is extremely straightforward. Upon conclusion of a wet mixing time, the control is notified automatically via sensing device as to whether a mix complies with the respective requirements and whether the following batches should continue to the same recipe. The established set value is adopted into the mix and applied for the subsequent mix orders with this recipe. In accordance with this recipe-

related adjustment, any deficient mixing water is then calculated automatically upon conclusion of the dry mixing time and supplied subsequently to the mix.

Moistures of the sand granulations can be viewed on visualisation screens throughout by way of integrated Liebherr Litronic-FMS moisture sensors. Cameras on the rotary distributor above the aggregate silos, on top of all mixer covers (with a view into the mixer), on the discharge hopper and at the truck mixer and bucket elevator discharge points ensure a direct visual inspection of all relevant procedures. Statistics for materials usage and production volumes, as well as statistics relating to customers, building sites or vehicles can be generated at arbitrary time intervals.

Exhaust air filters reduce dust emissions and are employed to ensure environmentally-friendly operation.

A computer-controlled, high-pressure cleaning system guarantees methodical and efficient cleaning of the mixer. The cleaning system can be regulated from the control desk or from the switchgear cabinet. Several rotary nozzle systems are arranged on the mixer cover for optimum cleaning and an additional rotary pipe is integrated in the mixer gate.

Rinninger also employ a residual concrete recycling plant LRS 806 featuring an output of 12 m<sup>3</sup> per hour, whereby material recovered from cleaning of the mixing plants and truck mixers, as well as quantities of unused residual concrete is prepared once again for use. The constituents of the reconditioned material are washed in a closed material circuit. An additional hydrocyclone cleans the residual water of fines before supplying the purified water back into production. This practice of processing and recycling the water yields considerable savings in costs and materials.

## **Image**

liebherr-betomatIV-rinninger.jpg

Liebherr mixing plant Betomat IV-515 featuring three ring-pan mixers, ten aggregate chambers and six cement silos

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