

Liebherr Emerging in the Indian market

Liebherr, is an over DM 7 billion (Rs 16,000 crores) annual turnover German Group concentrating primarily on construction equipment. Liebherr is Europe's largest construction machinery manufacturer and one of the largest in the world. They are Europe's largest concrete production and transport equipment manufacturers and are known world-wide for reliable plants of superior design and highest quality standards through innovative and cost effective features and maximum in-house production. In India, AM Equipment & Services Pvt Ltd, Chennai, is the dealer of Liebherr concrete equipment.

Batching and mixing plants

Their batching and mixing plant range include horizontal batching and mixing plants from 30 m³/h up to 75 m³/h of compacted concrete capacity in ring pan mixer design and 180 m³/h of compacted concrete capacity in twin shaft mixer design based horizontal plants. Liebherr vertical plants are generally custom designed to meet individual customer requirements.

The main advantages of batching and mixing plants offered by Liebherr are given below.

- (i) The complete plant is manufactured to highest

international quality standards, assembled, tested and painted in Germany before dispatch and proven with hundreds of installations world wide, including India.

- (ii) Radial scraper (for 30 m³/h and higher capacity plant) is made in Germany.
- (iii) Weighing belt system structure (for in-line bin version of plant) is galvanised for long life as aggregates always contain moisture and it is even more important for plants working close to coastal area.

Mobile mixing technology: New Mobilmix 2.25 R

Liebherr is presenting an entirely new concept in mobile horizontal mixing plants - Mobilmix 2.25 - which caters to the need for short erecting times, retention of the same robust construction in order to comply with the standards for stationary mixers and high potential output.

The mixer plant's basic elements are located on a supporting platform, which is transported as a complete unit on a trailer. The container with the control

system is integrated into this module. A crane on the truck trailer sets the basic unit down on a level surface. It is lifted together with the mixer system, weigher and hopper and placed into the working position, screwed and bolted down. The control container is slid into its intended position. The large amount of available space in the container, which is unusual for a mobile mixer, enables a modern microprocessor control system to be installed. A screw-type compressor is installed in a section of the control container which is accessible from the outside.

The inline silo components consisting of a unit with batching gates, belt weigher, sheet piling and supporting walls, along with an extra chamber superstructure for the aggregates with fold-out walls, is delivered by two additional trucks with trailers. Up to 140 m³ of aggregate can be stored. The chamber width of 3.50 m makes it easy for a wheeled loader to carry out the filling process. Subsequently, up to four cement silos are erected which can have storage capacities of up to 100 t each.

An estimated 1 to 2 days are sufficient for assembling and dismantling the mixing plant. With the installed Liebherr DW 2.25 dual shaft mixer, the Mobilmix has a theoretical production capacity of approximately 100 m³/h set volume of concrete.

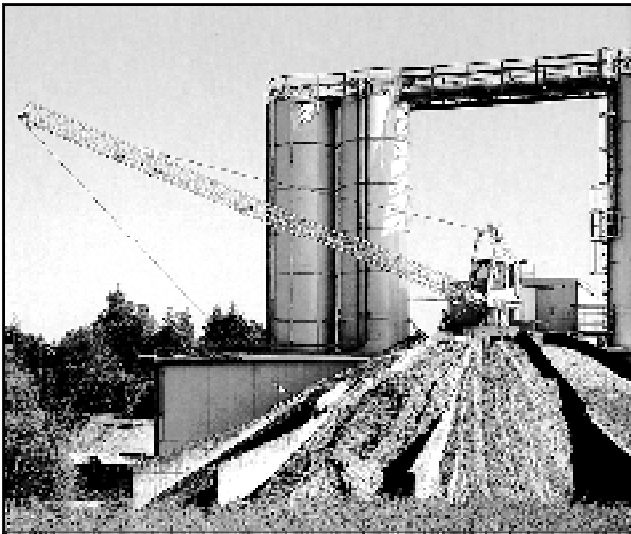
Ring pan mixer with agitator

The ring-pan mixer with agitator, manufactured by Liebherr offers the following advantages:

- More mixing energy is imparted to the mixture
- Allows shorter mixing times (30-50 percent) than ring-pan mixer without agitator. Moreover, saving in mixing time and improved mixing of concrete results in lesser wear and tear of the mixer linings and reduced loading of the mixer motor.
- Mixing fines homogeneously such as sand and cement (mortar), micro silica, fly ash, colour pigments is possible, in reasonable time, only in the ring-pan mixer with agitator.
- Same strength concrete as that produced with ring-pan mixer with-



Mobilmix 2.25



Star pattern silo

out agitator can be produced in the one with agitator using less cement than that used in the former. As cement is the costliest component of RMC, achieving same strength concrete using less cement will result in lot of savings in cost.

- Used in production of self compacting concrete (SCC).

Liebherr twin-shaft mixers — A proven success

The rapid market acceptance of Liebherr's twin-shaft mixers can be attributed to several design features. The drive motor and gearbox are designed as a single unit, which makes the installed dimensions of the mixer more compact. As a result, only one torque reaction strut is required, and can absorb belt forces more effectively.

The mixer arms have been reinforced at the areas particularly susceptible to wear such as at the fixing screws and the ex-

The standard wear protection consists of Cr-Ni tiles; the ceramic lining, an optional extra, is of corrugated design to prevent stones from being trapped. This ensures that the integrity of the wear-resistant surface, which is necessary for a long service life, remains intact.

Litronic BCS batching control system

The Litronic BCS is a compact microprocessor control system and a cost-effective fully automatic batching control system for concrete mixing plants. The operating panel has an illuminated circuit diagram (flow chart) for manual or emergency operation. It also has sufficient space for additional modules such as the Litronic FMS or the Litronic FMG. The processor controls four to five weighers, the moisture corrector, the aggregate coarse/fine batching or the in-flight correction. Up to 16 analog inputs can be designated for these tasks. Invoice or report printers can also be connected.

Full object orientation of the basis software permits the configuration of plant variations without the need for extensive software matching. A mixing plant can be run in three operating modes: automatic, manual or emergency. In the manual operating mode, the weigher

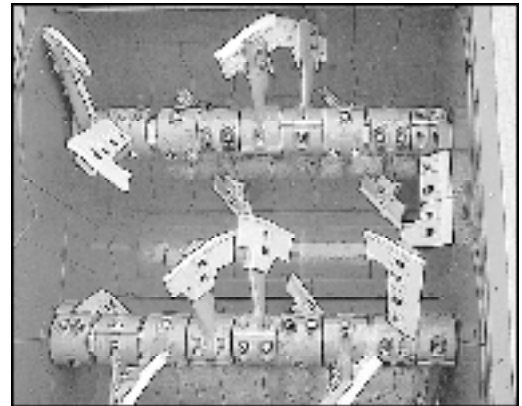
tended cover. The gap between the mixer arms on both mixer shafts has been optimised to ensure a more intensive mixing process. The system's mixing efficiency is also influenced by the way the mix components are added. The Liebherr twin-shaft mixer improves this factor by adding aggregates and cement at opposite ends. Water is added uniformly to the entire mix by a spray system.

data collation is carried out automatically.

A new option has been developed for the Litronic MPS-II microprocessor control system, permitting further adaptation to specific application requirements. The database functions have been extended for the long-term archiving of the recorded data and "construction-stage" statistics. The new process visualisation display on the screen provides an overview of production processes in the mixing plant.

Operations in India

Most of the batching plants supplied to Indian customers, some of which have been more than 20 years old, are operating satisfactorily even today in India with customers like Afcons, Continental Constructions, Jaiprakash Industries, Larsen & Toubro, Simplex Concrete Piles, etc.



Liebherr's twin shaft mixer

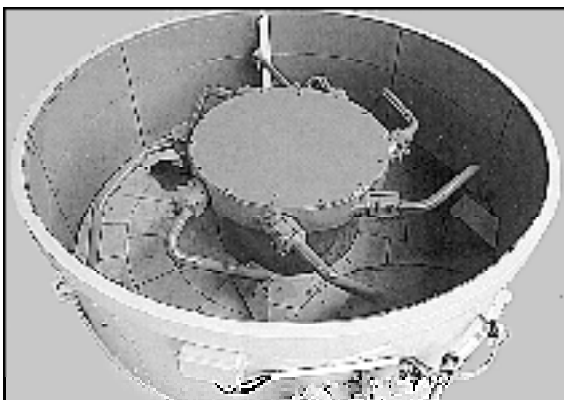
Recently, AMES has sold six 120 m³/h, four 90 m³/h, four 30 m³/h capacity Liebherr concrete batching and mixing plants to different customers, all over India, namely, L&T, ACC and HCC to mention a few.

After sales service

The Liebherr concrete equipment is supported by their dealer, AM Equipment & Services Pvt Ltd for parts, service and supervision of erection and commissioning.

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Type R ring pan mixer