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CONCRETING TIMES

SOUTH EAST ASIA

Himalayan Tunnels with Schwing Stetter India

Dear Customer,

Greetings!!

In this Edition, we have covered interesting projects in Indonesia, Philippines and Vietnam. We have introduced new horizontal batching plant HN4.0 in Germany. The product was reviewed by many potential customers across the globe and was appreciated for the ability to manage production of 0.25 m³ to 4 m³.

The other advantage of balancing the energy need and lowering the production cost. We have also brought out a cover story on shotcreting machines which have become very popular in various tunnel job sites across Himalayas, India. Some of the shotcreting machines are involved in building the Pirpanjal connecting railway tunnel at the highest altitude in Kashmir region, India. Look forward to meet you all in the Philconstruct exhibition taking place between November 10th- 13th, 2016.

Happy reading!!!

With best regards,

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Ciputra International Apartment



Cengkareng: This mixed use development project is being constructed by PT Nusa Konstruksi Enjiniring. It consists of six towers of thirty six floors each. Total concrete being poured is around 16,000 m³ using K350 & K450 grades of concrete. Schwing equipment being used in this project are SP 2800 & SP 1800 concrete pump.

Nava Park Apartments



Serpong: This apartment project comprises of six towers of eighteen floors each. It is surrounded by nature Nava Park facility with direct access to Nava Park Botanical Park, Tangerang. It is being constructed by PT Nusa Konstruksi Enjiniring using K350 and K450 grades of concrete. Schwing equipment in use at this project is SP 2800 concrete pump. Total concrete being poured is around 8000 m³.

Athlete Village — Asian Games 2018



Kemayoran: For the upcoming 2018 Asian Games, Ministry of Public works, Republic of Indonesia is constructing Athlete Village in the Kemayoran subdistrict of Central Jakarta. In total, ten towers are being constructed to provide 7424 units, which can accommodate approx. 22,000 athletes, officials and other games related personnel. Construction work is awarded to two consortiums with the Government construction company taking the lead role. Total expenditure budgeted for the athlete village is US\$ 260 million and the target is to complete the project in 510 days, i.e. by August 8, 2017. SCHWING Stetter being the most reliable concrete pump, both the consortiums are using three numbers of Schwing stationary concrete pumps of SP 1800 and is also with a possibility to add more pumps at a later stage.

CT Projects in progress

University of the Philippines



Diliman : This upcoming project is an addition to the school building in Quezon city. Concrete is being pumped to ten floors. It is being constructed by 10K concrete who has hired Schwing concrete pump of SP 1400 from LVRD concrete pump services.

Ready mix concrete application



QuyNhon City :

Schwing Stetter India truck mounted concrete boom pump S36X was commissioned at Vietnam for RMC and construction use.



Fuso trucks in Vietnam :

Recently, Schwing Stetter India transit mixer AM7FHC2 mounted on Fuso FJ truck chassis by Mercedes Benz, Vietnam for the market of Vietnam.

Shotcreting Made Easy



Shotcrete is used in lieu of conventional concrete, in most instances, for reasons of cost or convenience. Shotcrete is advantageous in situations when formwork is cost prohibitive or impractical and where forms can be reduced or eliminated, access to the work area is difficult, thin layers or variable thicknesses are required, or normal casting techniques cannot be employed. Additional savings are possible because shotcrete requires only a small, portable plant for manufacture and placement.

Schwing Stetter India has various products for shotcreting like TSR 30.14, TSM 30.14, TSM 20.8 and BPN 300 RE. Sprayed concrete construction uses two processes namely dry mix and the wet mix. The flexibility and economy of this material comes to the fore in above-ground and underground buildings, tunnelling and special underground construction, in fact throughout the construction industry. The following uses are widespread:

- Excavation stabilisation in tunnelling.
- Sealing works in underground construction.
- Trenching stabilisation.
- Tunnel and underground chamber lining.
- Slope stabilisation.
- Stabilisation in mine and gallery.
- Protective lining construction.
- Wearing courses.
- Concrete repair.

- Special lightweight load-bearing (concrete replacement and strengthening) structures.
- Restoration of historic buildings.
- Creative applications (stone structures).



How shotcreting is done?

Most shotcrete is batched and mixed in the field using portable mixing equipment or delivered in mixer trucks from a local ready-mixed concrete plant. Batching and mixing equipment must be capable of maintaining an adequate and continuous flow of homogeneous material. Cement, aggregates, and admixtures (except accelerators) are thoroughly mixed. The mixture is fed into the gun and propelled through the delivery hose to the nozzle by compressed air or pneumatic or mechanical pumping. Air is injected at the nozzle to disperse the stream of concrete and generate the velocity for shotcrete placement.



a. Description of guns:

(1) Pneumatic-feed: The premixed mortar or concrete is conveyed from the gun through the delivery hose to the nozzle by slugs of compressed air. At the nozzle, additional air may be added if needed to increase the velocity and improve the gunning pattern. This equipment can handle mixtures of a consistency suitable for general shotcrete construction, using mixtures containing up to 3/4-inch aggregate. Guns with a dual mixing chamber and a two-way valve allow mixing of materials and a continuous flow operation.

(2) Positive displacement: The concrete is pumped or otherwise forced through the delivery hose without the use of compressed air. Air is injected at the nozzle to disperse the stream of concrete and impart the velocity necessary for shotcrete placement. Positive displacement delivery equipment requires a wetter mixture than pneumatic-feed equipment, and the velocity of the shotcrete being applied is lower. It is difficult to apply shotcrete to vertical and overhead surfaces by this method unless a suitable accelerator is used. This equipment can shoot material containing 3/4-inch aggregate.



Schwing Stetter India has been exhibiting its strength time and again in many shotcreting applications around the World. For example, in the 345 km Udhampur – Srinagar – Baramulla rail link project being constructed by Afcons using our equipment, which is the biggest project in the construction of a mountain railway since India's independence, 118 MW Nikachhu Hydropower project by Druk Green Power Corporation and in 300 MW Srinagar Hydroelectric power project by GVK Power and Infrastructure Ltd.



The New Horizontal Batching Plant 4.0 From Stetter



Stetter's HN 4.0 concrete batching plant is setting new standards for efficiency and, at the same time, a broader capacity range with shorter vehicle loading and downtimes, energy efficiency, and low-cost production. Stetter GmbH is filling a niche market with this machine size and is currently the only manufacturer to offer a batching plant with a 4.0 m³ mixer and skip in its product line.

Memmingen / Herne : The DW 4.0 twin-shaft mixer expands the product portfolio of Stetter GmbH in Memmingen. The incentive for the development of a large-volume and simultaneously trend-setting twin shaft mixer for the ready-mixed concrete industry was the need for higher efficiency, better mixing-system utilisation, and shorter truck-mixer downtimes. At the same time, the system was designed in such a way that with an output of compacted concrete of up to 148 m³/hour, single batches of the smallest quantities starting at 0.25 m³ up to 4.0 m³ concrete are also possible. In comparison with batching plants having smaller mixers, the production costs for concrete can be reduced by up to 20% per m³. The faster production saves time while simultaneously having a positive effect on the energy balance during both system operation and truck-mixer operation.

The large number of components developed and produced by Stetter also ensure high production quality and excellent reliability of the HN 4.0 batching plant in operation. The individual modules of the batching plant are, as usual, pre-assembled by Stetter at its main plant in Memmingen. This enables quicker on-site system assembly later at the site by the Stetter technicians and ensures trouble-free setup. Along with the actual batching plant, Stetter will also supply and install the required electrical equipment including all of the control cabinets. When the company's own MC 500 mixing-system control unit is used, the Stetter technicians will also handle the commissioning, instruction, and transfer of the system software.

The standard high-grade full galvanisation of the entire steel structure of every Stetter batching plant emphasises the high standards of quality and guarantees a long system service life.

Our arguments convince customers

Despite concerns and doubts from the competitors, Jürgen Albrecht, Managing Director of Eifelbeton GmbH, has placed all of his bets on the HN 4.0 batching plant including an extensive package of options. His catchment area in his own words is no "typical concrete region", as in big cities and urban areas. This did not stop him from investing in the batching plant. It is a long-term and trendsetting prospect for his company. "The performance capacity of the system is impressive. It can manage everything from a mere 0.25 m³ up to a maximum of 4 m³ per batch. Above all, it is efficient, both in the energetic balance and production costs, and when filling the vehicles. This pays off absolutely in the long term," believes Jürgen Albrecht. The shorter vehicle loading time saves the enterpriser not only fuel, but has also greatly extended the service life and utilisation of his fleet of Stetter four-axle truck-mixers and truck-mixer semi-trailers. A side effect is the increased motivation of its drivers, as they have much less idle and waiting time. Jürgen Albrecht emphasises: "With all of its clearly measurable advantages, the HN 4.0 is primarily a lever for customer loyalty as I can produce both large and small quantities with short lead times and don't need to refuse anyone."

Stetter GmbH has also supplied and installed an admixture container and a fully equipped laboratory container for Eifelbeton's new horizontal batching plant HN 4.0 in Bitburg. The optional camera also installed in the mixer enables all single steps in the mixing process to be actively tracked.





The complete system enclosure with insulation panels ensures year-round production of high-grade concrete even in temperatures below the freezing point. A high level of occupational safety and availability is provided by the new high-pressure cleaning system developed by Stetter for the twin-shaft mixer. With around 100 bar water pressure, the mixer cleans more thoroughly, faster, and with less water than with manual applications.

Eifelbeton GmbH selected 5 differently sized boxes for two in-line silos for storing the aggregates and is thus achieving extraordinarily high flexibility for the future. With 52 m³, the box for sand has the greatest volume. The other 4 boxes are each equipped with a holding capacity of 45 m³. The unlimited combinations of the box sizes for a Stetter in-line silo enables optimal adaptation of the storage capacity to the needs of the customer. The optional hinged cover attached to the top of the in-line silos can be opened and closed by remote control and ensures high energy efficiency in winter operation. Each one of the 45 m³ boxes is specially equipped for the use of recycling materials. Instead of a batching gate, the boxes are provided



with a metering belt of 1.70 m in length which empties directly onto the weigher belt. This guarantees operation with very few disruptions.

Together with the HN 4.0, a concrete recycling plant RA 20 was also supplied and installed by Stetter. For Jürgen Albrecht, the HN 4.0 also represents the future of large batching plants. "I am convinced that the 4.0 m³ volume alone will become the future benchmark simply for reasons of efficiency and the associated savings in all process steps."



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