

Nordimpianti System Srl, 66100 Chieti (CH), Italy

SPC Industries Malaysia, chooses Italian technology for the production of pre-stressed hollow core slabs

SPC Industries is the manufacturing unit of the construction company Kimlun, market leader in the Malaysian/Singapore real estate sector. SPC Industries is based in Johor Bahru close to the border of Singapore. Founded in 2002 SPC Industries is today without a doubt a reference point of prefabrication in the whole region. The main products are concrete precast tunnel elements, concrete pipes, ready mix, segmental box girder, concrete culvert box sections and now also pre-stressed hollow core slabs. SPC Industries exports more than 90 % of its precast production to Singapore.



Overview of the new hollow core factory

The distribution of the concrete is entrusted to several flying buckets that can transport 2 m³ of concrete at a speed of up to 4.5 m/sec. The batching plant, as well as its position within the plant was carefully planned and optimised to meet an efficient production of the various products.

The scope of delivery for Nordimpianti in - clude the supply of 3 steel casting beds each 150 m long installed with a heating system. The machine for the production of the hollow core slabs chosen by SPC Indus - tries was the new Extruder, the Nord - impianti EVO model E120 with various forming inserts able to produce the complete range of hollow core slabs, 200, 265, 320, 400 and 500 mm in height.



Nordimpianti Evo Extruder

In Malaysia and all of Southeast Asia, hollow core slabs are becoming more popular and are a necessity for an economical construction method. The building expansion of the local market in both, residential and industrial sectors, has pushed SPC Industries to economise in the use of natural resources as aggregates and cement, so the decision to invest in equipment to manufacture prefabricated elements was the evident result.

The initial meeting between SPC Industries and Nordimpianti started in the middle of 2011 after the new investment was approved by the parent company Kimlung. The excellent reputation on the world market, the quality of machines, the after sales services and technical support offered by Nordimpianti impressed SPC Industries. Within a few months the agreement was formalized to supply a new hollow core slab production line in the Johor Bahru factory.

The production facility of SPC Industries covers an area of approximately 30 acres

on which there are 3 buildings each one for the manufacture of a different precast product. The new production line for hollow core slabs required the construction of a new building with 7 production beds each 150 m long. A new batching plant from Skako and an automatic concrete distribution system was installed to supply quality concrete at all the production beds.

The investment in a new concrete batching plant was immediately recognised as a necessity by SPC Industries in order to produce superior precast elements, the quality and consistency of the concrete mix is very important. The new batch plant is equipped with 2 planetary mixers producing each 2 m³ of concrete every 3 min. The batching plant is able to provide simultaneously a low slump concrete for the production of hollow core slabs and a concrete with a higher slump for other precast products. The plant is equipped with the most modern control systems with humidity probes located in both, the bins of the aggregates and in the mixer.



Multiangular Cutting Saw and Extruder Nordimpianti in operation Hollow core slabs made by Extruder Machine

The decision to invest in the Extruder system was a dedicated choice from SPC Industries, who has during the last decades built up a superior technical expertise in the production of hollow core slabs using Slip-former machines. After discovering the many benefits offered by the new Nord - impianti Extruder such as, the quality of the finished product, the ease of operation and

the low maintenance costs, any doubts about the choice between production systems based on the extrusion process or Slipformer system were immediately clarified.

The concrete supply to the production machines is carried out by a concrete distribution bridge crane which also follows the extruder supplying electrical power to the

machine. The distribution of concrete, from the batching plant, via the flying bucket to the bridge crane is fully automated and allows the extruder to be constantly supplied with concrete along the entire length of the bed.

SPC Industries also requested Nordimpianti to supply other essential production machines. A multi-angle 500AM cutting



Stocking area for hollow core slabs

saw capable of cutting elements in all angles including longitudinally cuts up to a depth of 500 mm, a multipurpose bed cleaner that cleans the production beds, applies the demoulding oil, and also pulls the stressing cables over the complete length of the bed.

In addition Nordimpianti also supplied all the ancillary equipment needed to make the production as efficient and safe as possible, this includes a transportation system to move the elements to the storage area, all stressing equipment, lifting clamps and covering sheets for the curing of the elements.

One of the unique features of the plant is the efficient water drainage system. It has always been the goal of Nordimpianti to both, provide its customers with first class quality machines, and also offer advanced tailor-made engineering and environmental solutions.

Solutions and features that the company SPC Industries appreciated from the outset in order to install one of the most modern production facilities in Southeast Asia.

This particular drainage system is composed of scrapers on a conveyor chain within a channel situated at the lower end of the beds. Water and debris cleaned from the beds falls into the conveyor and is transported to a slurry tank outside the building. All this is done automatically without operators avoiding most of the manual maintenance.

With this new product line SPC Industries will now be able to supply the most up to date hollow core slabs at a low material and aggregates cost and strengthen its market presence and reputation especially in the south Malaysian Peninsula and in Singapore.

The next goal of SPC Industries is to install a new production line in Kuala Lumpur where the construction activity of the parent company Kimlun is expanding rapidly. •

FURTHER INFORMATION

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