

Nordimpianti System Srl, 66100 Chieti (CH), Italy

A new prestressed hollow core slab factory opens in Adana, Turkey

Nordimpianti System Srl has consolidated its global expansion by completing a new hollow core slab production line for the prefabrication company Kambeton. The production of precast flooring is an important milestone not only for Kambeton but also for the building industry in the city of Adana which in recent years has experienced substantial growth in civil and industrial construction.



Outside view of Kambeton

The pre-stressed hollow core slab is not a new prefabricated element in the Turkish market but its presence is a small reflection of the ever increasing use of these elements within the construction sector globally. Up to now Turkey has had only a few companies that have had the foresight to believe in the success of an element so prevalent in the rest of the world. One of these companies is Kambeton, led by Mr Zeki Baykam, who heads up a business dedicated to offering high quality products. An extraor-

dinary entrepreneurial talent who has brought success to his company which today has two major plants, one in the city of Adana and the other in Nizip, Gaziantep.

With over 35-years of experience in the design, manufacture and erection of precast concrete systems Kambeton is a leading company in the industry in Turkey and the surrounding region. By focusing on quality and reliability Kambeton has

become a reputable partner for thousands of investors. Kambeton is the largest manufacturer in the region with a total manufacturing area of 240,000 m² and currently employs over 400 people.

Zeki Baykam started out the company as a contractor in 1978 with the production of precast fence posts. Over the years Kambeton expanded its production range to over 3000 products including superstructure elements, pre-stressed bridging joists, infrastructure elements such as pipes and manholes, centrifugal electric poles, wall panels, barriers, retaining walls, paving stones, curb stones and other landscaping elements such as street furniture, fence posts and any kind of customized products such as bleacher stairs and tunnel segments.

Kambeton owes its reputation to three main management principles; being fair, being reliable, and being innovative. Constantly, by contributing to the development of the construction industry with new products, Kambeton continues to offer the fastest, the most affordable and the highest quality solutions to its clients.

The idea to change the old system using moulds into a precast hollow core slab facility started in the early 2000s. However the demand in the region has only recently



Interior view of the new production area for hollow core slabs in the Kambeton prefabrication factory.

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Hollow core slab immediately after production, demonstrating the high concrete compaction achieved by Nordimpianti's Extruder machine.

matured to make such an investment feasible. The building industry required a faster and more reliable system for floor construction. It is precisely for this reason that Kambeton began exploring different market options by first undertaking a thorough analysis of the solutions that were being offered and adopted in other countries. In early 2013 the Turkish company started talking to various suppliers of precast technology narrowing down the list. The choice of partners for the supply of the new production line was a highly selective process for Kambeton. To arrive at their final decision the technical staff of Kambeton invested a lot of time visiting production facilities and exhibitions around the world. After all the extensive research Mr Zeki Baykam had to decide on the choice between the Extruder, Slipformer or Wet Casting technologies.

Each technology has its advantages and disadvantages. After many meetings with various machine manufacturers it was still not clear to Mr Zeki Baykam which system would offer Kambeton the best results in terms of the quality of the finished product at the lowest possible production costs in order to be competitive in the market. It was only through the support and advice from Nordimpianti, who gave clear and detailed information on the various production systems available that Kambeton were able to dispel any lingering doubts. Nordimpianti's vast experience in all three production systems meant that the Italian company was able to explain with confidence all the pros and cons of the machines eventually leading to the conclusion that the extrusion manufacturing method was the best system suited to Kambeton needs for the production of hollow core slabs.

Kambeton were also able to see for themselves at Nordimpianti's extensive production site the attention to design and high end engineering that goes into Nordimpianti's products. They were also able to witness the machines in action in actual production establishments. The first impression of Kambeton's highly skilled engineering team was in appreciating the build quality of Nordimpianti's machines, particularly the extruder with its unique screw transmission system in which all the gears operate in a sealed oil bath eliminating at a stroke a lot of maintenance work and drastically reducing running costs.

Kambeton were also pleased to see that this attention to design detail could be found in all aspects the machine, from the care of the finish to the innovative mechanical solutions which characterise the engineering expertise of the Italian company.

After all this research the final decision was made. Kambeton chose the Nordimpianti Extruder for a number of reasons both technical and economic.

Nordimpianti's Extruder is specific to the production of hollow core slabs and allows the production of elements with advantageous characteristics such as:

- High concrete compaction;
- low cement content per m³ of concrete;
- maintenance costs reduced to a minimum;
- strong adherence between the stressing cables and the concrete;
- simple machine operation;
- excellent surface finish of the produced elements.

The hollow core slab production line was installed in one of the bays of the existing Kambeton factories which was completely transformed to accommodate the new



The Nordimpianti EVO e120 Extruder, capable of producing hollow core slabs with heights of 150, 200, 265, 320, 400 and 500 mm.



500 AM Multi Angle Saw during cutting of the manufactured slab.

machines. The plant consists of five 144 m steel production beds installed with a bed heating curing system. Each bed has 300 t reaction beams for stressing and other reaction beams for de-tensioning prior to cutting the slabs. The EVO e120 Extruder was chosen, capable of producing hollow core slabs 1200 mm wide and in variable heights of 150, 200, 265, 320, 400 and 500 mm. The cutting is carried out by a multi-angle 500AM saw. This can cut at any angle.

Although, to give Kambeton the ability to carry out longitudinal cutting of wet concrete a 500L model specifically designed for this purpose was chosen. The latter is a very smart choice in that enables Kambeton to cut the elements immediately after casting with all the advantages derived from it. Longitudinal cutting is usually done when the concrete is dry on the production bed. However cutting when the concrete is dry slows down the production cycle, wastes a lot of water and creates dust that affects the factory environment. The 500L wet saw model eliminates these problems.

To complete the production line Nordimpianti was able to supply a multi-function cleaning machine capable of performing the cleaning of the bed, as well as bed oiling and the pulling of the stressing wires along the bed. Last but not least a hydraulic power unit for tensioning as well as other accessories were supplied to make the system work to perfection.



Multi-function bed cleaner during production bed preparation.

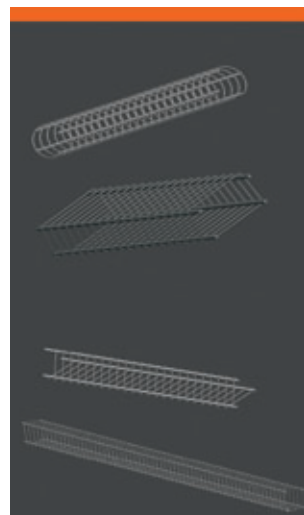


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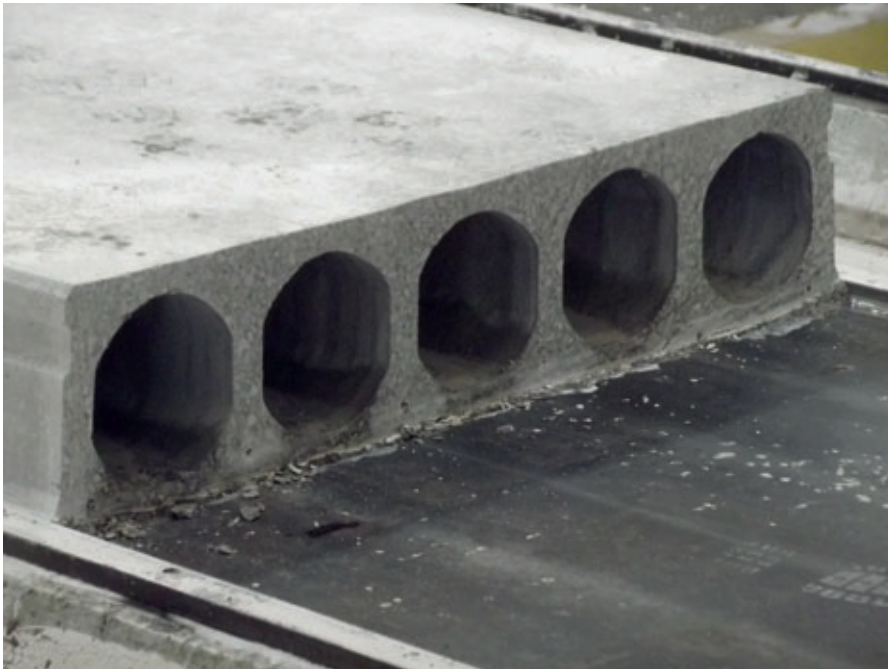
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The very first produced hollow core slabs, one still on the production bed, ready to be supplied for on-site assembly.

The Extruder supplied by Nordimpianti was initially fitted with a forming insert to produce 300 mm high hollow core slabs. Kambeton's technical team, guided by Nordimpianti's experience were pivotal from the outset in their choice of good quality raw materials and their use in the correct concrete design mix. The initial tests exceeded expectations and not one square meter of finished product was discarded at the testing phase, a result that confirms how important it is to rely on a partner that can combine proven experience with the supply of high quality products at a fair market price.

The plant was completed on time and Nordimpianti's technicians were on-site for less than two weeks for the commissioning and staff training on the use and maintenance of the machines. The sale of the plant from Nordimpianti was conducted in collaboration with Atlas Muhendislik, representatives based in the city of Istanbul. Kambeton relied on the expertise of Nordimpianti and Nordimpianti, through the Turkish representative, was able to respond to the experienced engineers from Kambeton, creating a virtuous 360 degree communication that took all companies from negotiation to commissioning to fully meet the needs of the customer.

Nordimpianti has a strategy of collaborating with local partners, a point which is very attractive to many customers. Today Nordimpianti has nearly 40 partners across the world from South America to South East Asia encompassing Europe, Russia and the Middle East. Being able to count on a partner close to its customers allows Nordimpianti to offer continuous and reliable service throughout the lifetime of the plant.

Both Nordimpianti and Kambeton are fully satisfied with the final result: Kambeton for choosing a reliable partner who is always ready to provide the backup support necessary and Nordimpianti for having successfully launched yet another manufacturing site, its first in Turkey, opening up new horizons in a country with a strong potential. ■

FURTHER INFORMATION

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