

Nordimpianti System Srl, 66100 Chieti (CH), Italy

Product quality and increasing demand drive the need for advanced equipment for the production of hollow core slabs

In a dynamic hollow core slab market characterised by high standards of quality and efficiency, it is essential for a company, not only to have highly organised production processes, but to also be constantly open to the opportunities offered from the use of state-of-the-art machinery and equipment. Daewoo Steel Tech. Co. Ltd, South Korea's 7th leading precast construction company, is one such company that moved swiftly to adapt and change to market conditions, moving away from machines once being supplied by a local manufacturer.

Daewoo ST Co., Ltd. is a specialized precast concrete solutions provider within the Daewoo Engineering & Construction group, focusing on the design, production, and installation of high-performance precast elements for building, industrial, and infrastructure projects. The company operates modern precast factories equipped with automated produc-

tion lines, ensuring consistent quality, high productivity, and reliable delivery for domestic and overseas projects.

Its product portfolio covers a wide range of precast concrete components, including slabs, beams, columns, walls, façade panels, and large infrastructure elements such as bridge and segmental units. Daewoo ST supports clients from early design and engineering evaluation through manufacturing, logistics, and site erection, offering complete turnkey support for precast structures. By combining advanced production technology, strict quality control, and experienced engineering teams, Daewoo ST helps customers shorten construction time, improve site safety, and achieve cost-efficient and durable precast concrete solutions.

Its production of prefabricated floors began in 2022 at the plant in Jincheon, initially focusing on the production of pre-



Aerial view of Daewoo ST production site in Jincheon, South Korea

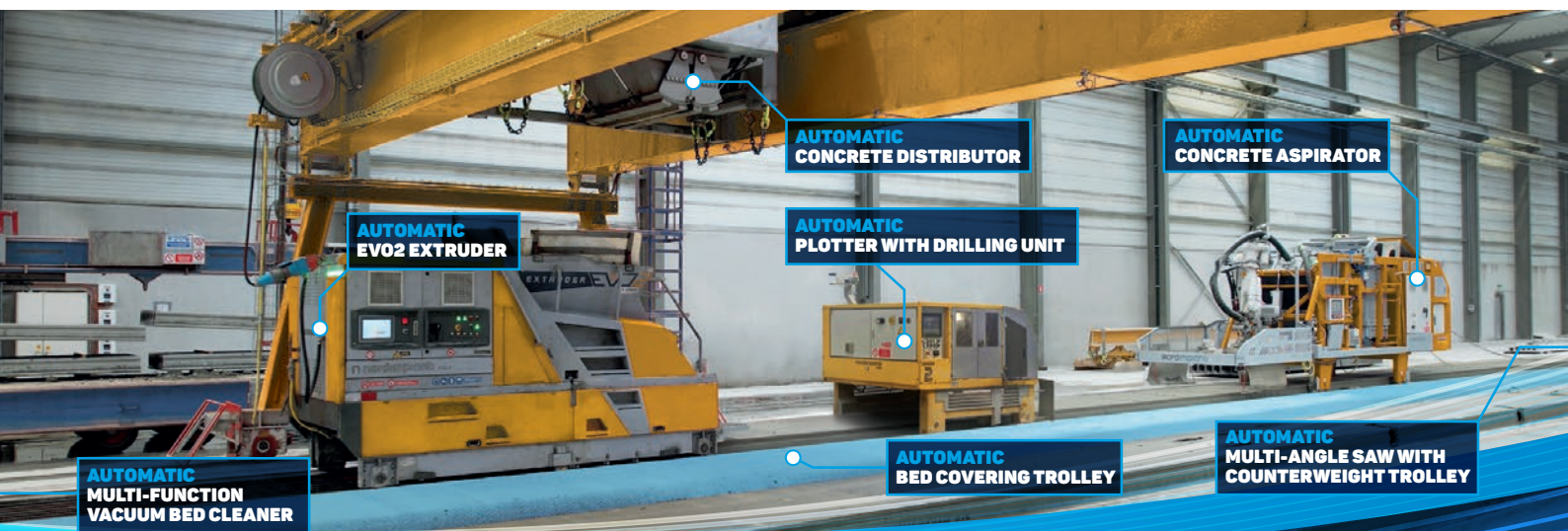


Half slab and hollow core slabs produced with the locally manufactured Slipformer

stressed half slabs and hollow core slabs, manufactured using Slipformer machines.

The plant in Jincheon has four production beds, each 2.4 m wide and 180 m long, impressive figures that allow for a production capacity exceeding 1,300 m² of floor slabs per day.

Until 2023, production was achieved using Slipformer machines, but in that year, Daewoo ST had to reconsider its entire production system and evaluate the option of changing the casting method due to a number of critical factors. Demand for half slabs was in sharp decline, while hollow core slabs produced with the Slipformer machines were perceived



PUSHING THE ENVELOPE OF AUTOMATION AND EFFICIENCY IN THE PRODUCTION OF PRESTRESSED HOLLOW CORE SLABS

NORDIMPIANTI is a world leading manufacture of machines and equipment for the production of prestressed hollow core slabs primarily used in the construction industry.

NORDIMPIANTI's automatic machines are meticulously engineered to ensure the highest levels of production efficiency so that labour and

production costs are driven as low as possible.

NORDIMPIANTI has over **50 years** of experience in the prestressed concrete industry supplying companies in over **60 countries**.

From a single machine to a complete turnkey project NORDIMPIANTI has you covered!



Daewoo ST production hall with four long casting beds



2.4m double panel EVO2 Extruder machine during casting

by the company to be of lower quality compared to those offered by other manufacturers, who had already adopted modern extrusion production machines. While the market for half slabs was shrinking, demand for hollow core slabs was constantly growing. In 2023, Daewoo ST decided to discontinue the production of half slabs and to replace its fleet of machines to produce hollow core slabs with extrusion machines.

The change to Extruder machines also allowed the range of hollow core slab heights that Daewoo ST could now offer to its customers to be increased. Up to that point slab height had been restricted to 320 mm because of the limitations of the Slipformer machine. The goal was to produce hollow core slabs with heights of up to 500 mm, capable of meeting the demands of construction projects such as low-temperature logistics warehouses, data centres, etc.

After careful market research, and after investigating what equipment other local precasters were using, Daewoo ST

technicians chose to focus on the technology offered by the Italian company Nordimpianti. Chief among the factors that influenced this decision was the fact that Nordimpianti had already supplied numerous other plants in South Korea with 2400 mm Extruders.

With investigations done, technical requirements fully established and contracts signed, the new machines were successfully commissioned in January 2024, fully in-line with the delivery times agreed. The first machines that Nordimpianti included:

- Extruders for the production of 6 and 4 hole hollow core slabs with heights H200, H320, H350, H400, H500
- Automatic multi-angle saw combined with a counterweight trolley
- Multifunction Bed cleaner
- Lifting beams.



Automatic multi-angle cutting saw with counterweight trolley



Multi-function bed cleaner



Telescopic lifting beam

Nordimpianti also has production and warehouse facilities in South Korea, a fact that further helped Daewoo ST choose Nordimpianti as its supplier. Nordimpianti Korea helped with the commissioning of the plant and is also able to supply locally produced original spare parts as well as ongoing technical assistance with specialised locally based technicians.

The switchover to Nordimpianti's Extruder machines delivered excellent results in terms of production and quality however the efficiency of the new machines highlighted an inefficiency of a subsequent process. Hollow core slabs often require the marking and drilling of holes for water drainage in the voids.

These processes were carried out using manual tools and involved significant labour combined with a high risk of human error, which impacted both efficiency and overall production quality.

To solve this issue Daewoo ST decided to commit to a further investment in an automatic Plotter with drilling capabilities, again from Nordimpianti. The combined function of the plotter allows for printing and consistent hole drilling to be carried out fully automatically, bringing with it numerous advantages, including:

- Reduction in the labour required
- Improvement in product quality
- Reduction in waste caused by human error.

Daewoo ST produces two 1200 mm wide slabs simultaneously using a 2.4m Extruder machine. A distinctive feature of Nordimpianti's automatic Plotter is the doubling up of both printing and drilling components so that it integrates perfectly with Daewoo ST's production process. The



Automatic Plotter



Automatic Plotter and multi-angle saw working fully automatically

plotter/driller is essentially like two 1200mm wide machines which can work on both slabs at the same time, optimising processing times and ensuring perfect synchronisation with the speed of the Extruder casting machine, without lagging behind.

The Plotter is equipped with a high-capacity battery that allows it to operate completely autonomously as it moves along the casting bed. In addition, taking away the manual involvement of the drilling means that the quality of the weep holes is now more uniform, a key aspect in ensuring the aesthetic excellence of the underside of the slabs.

With the launch of this new automatic machine, Daewoo ST has firmly established its position as a market leader. The new plotter machine became operational in June 2025.

At the same time, the collaboration with a prestigious company such as Daewoo ST has enabled Nordimpianti, together with its subsidiary Nordimpianti Korea, to establish itself as a leading supplier in Korea of machinery and equipment to produce prestressed concrete elements. ■



Hollow core slabs with marks and weep holes immediately after element casting



Weep holes as seen at the underside of the hollow core slabs

FURTHER INFORMATION

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