Progress Group GmbH, 60549 Frankfurt am Main, Germany

One of the most modern production plants for precast concrete elements in Europe

Systembau Eder GmbH & Co KG invested 12 million euros in the Kallham site and is building one of the most modern production plants for precast concrete elements in Europe. The innovative technology comes from Ebawe Anlagentechnik and Progress Maschinen & Automation, the software from Progress Software Development; all three companies belong to the Progress Group. The new plant is highly automated and equipped with clever, sophisticated machine technology. Eder thus produces double walls with and without insulation as well as precast slabs with in-situ topping.

Successful family-owned company trains its own junior staff

The Upper Austrian Eder Group can look back on a successful company history dating back to 1897. Over the decades, a brickworks in Peuerbach-Bruck has developed into an innovative group of companies consisting of brick factories, ready-mix concrete plants and a system construction department specialising in the manufacture of precast concrete elements.

The first precast circulating system went into operation in 1994 and various precast concrete elements such as double walls and precast slabs with in-situ topping were produced. With the constant expansion of the system construction department, the variety of precast concrete elements produced also grew continuously. Today, the Eder Group offers double walls, precast slabs with in-situ topping, prefabricated staircases, balcony slabs and all kinds of special prefabricated elements.

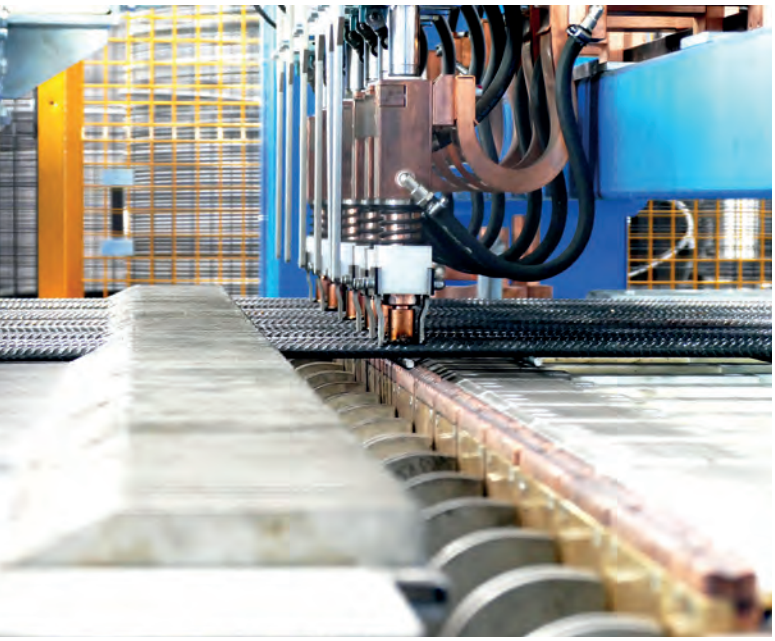
The company currently has 140 employees, 110 of whom work in Kallham and 30 in the technical offices in Peuerbach. The focus is on the training of apprentices. 22 of the 25 trained apprentices still work for Eder today and some of them fill management positions. The company is successfully managed by managing director Franz Josef Eder.

Partnership that creates trust

After the acquisition and successful use of a VGA Versa lattice girder welding machine from Progress Maschinen & Automa-

View of the new, highly automated circulation system at Systembau Eder in Kallham

Eder achieves high savings through the fully automatic setting of spacers with the MeshSpacer.



Just-in-time production of reinforcement meshes with the BlueMesh mesh welding machine from progress Maschinen & Automation

The magnetic crossbeam inserts the meshes into the pallets according to CAD specifications, serves the intermediate buffer, can turn the meshes when longitudinal bars have to be above the cross bars and places the meshes on a stacking carriage.

tion, the Eder Group decided to plan and implement its latest precast concrete element production in close cooperation with the various specialists of the Progress Group. Due to the new areas of application and increasingly modern architecture of commercial and industrial buildings, a technical adaptation of the production possibilities became more and more urgent for Eder. Managing Director Franz Josef Eder, who is also President of the Association of Austrian Concrete and Precast Plants (VÖB), is satisfied: "With the new circulation system, we can produce double walls up to a height of twelve metres under optimum conditions for our customers and are ideally equipped for the future".

With the highly flexible VGA Versa lattice girder welding machine, the lattice girders are produced "just in time", which enables Eder to achieve high savings potential in logistics, storage costs and waste.

Automation through new plant

With the new pallet circulation system from Ebawe Anlagentechnik, the Eder Group is taking another important step towards full automation in precast concrete element production. The new production plant, installed at the Kallham site in Austria, ensures the highly automated precast element production of double walls, insulated double walls and precast slabs with in-situ topping. The precast concrete elements produced are mainly used in building construction as well as in residential and industrial construction. At peak times, the new production plant can be operated with a capacity of up to six pallets per hour. The main work stations in the circulation are a FormMaster shuttering robot, which can also set magnets for electrical boxes using a gripping tool, a deshuttering robot, automated reinforcement production, the newly developed concrete distributor, compaction equipment, storage and retrieval machine, turning unit and a lifting traverse for demoulding and removal of the elements.

The new circulation system uses the Infinity Line® Notch-Free modular shuttering system. This allows the elements on the

pallets to be shuttered without gaps and without the need for additional filling elements. The patented shuttering system allows shuttering without chamfer recess. In this way, perfect outer edges can be produced. The Infinity Line Notch-Free shuttering system is designed to produce a high-quality precast concrete element with simplified and cost-optimized production.

Technology that convinces

The technology of the Ebawe concrete distributor, which has been convincing to date, has recently been further developed. The Eder Group was the first to use the new Ebawe eCon® Drive concrete distributor, which features innovative improvements. The fully automatic concrete distributor scores with a very high concrete discharge speed with very good dosing and accuracy. The new eCon Drive also offers a considerable advantage in terms of economy. The advanced technology results in less wear on the screw, and the use of locking devices can also be dispensed with. In Eder's new concrete plant, the concrete distributor travels on a branch line directly to the concrete mixing plant located on the outer facade, where it is supplied with fresh concrete. This configuration reduces the logistics effort and allows the washing and cleaning of concrete equipment to be concentrated in one place.

Reinforcement production 4.0

The area of reinforcement production is completely automated in the new Eder circulation system. The Mesh Spacer automatic laying machine positions spacers for the reinforcement meshes on the shuttering surface of the pallet. The insertion is optimized on the basis of calculations of the element size and the weight of the reinforcement, so that an increased savings potential of the required spacers results. The flexible reinforcing mesh welding system BlueMesh, which belongs to the M-System series, convinces by numerous application possibilities in the new plant. In just-in-time production, the mesh welding machine can fully exploit its flexibility and provide meshes in time according to the production requirements of the pallet circulation system. In addition to these advantages, series production of standard meshes is also possible. For the production of precast slabs with in-situ topping,

A multi-axis linear robot rounds off the automated reinforcement area in Eder's new plant.

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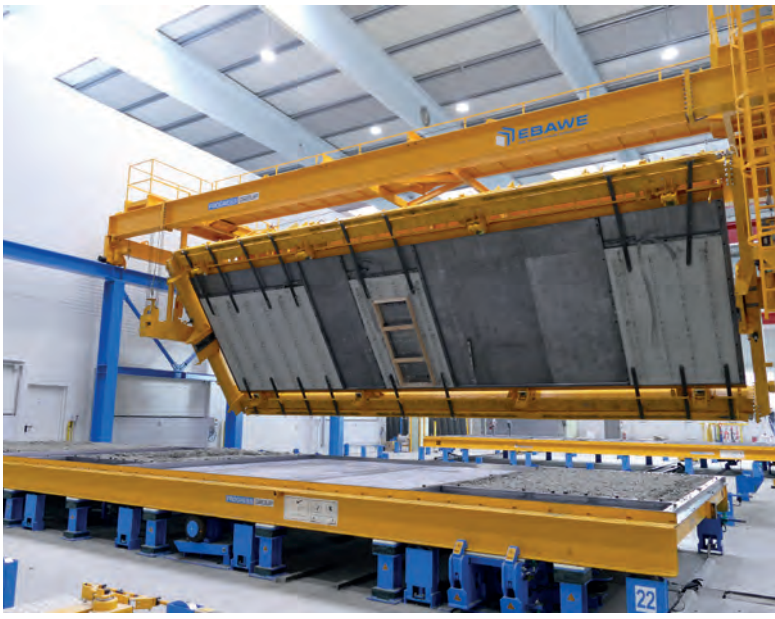
High discharge speed paired with very good concrete dosing capability thanks to the new eCon® Drive automatic concrete distributor



In addition to precast slabs with in-situ topping, Eder also manufactures double walls with and without insulation - the ergonomic turning unit takes care of the turning process.

the machine is additionally equipped with an automatic bending device for bending the rod overhangs on the front side. The automatic magnetic crossbeam can not only turn the meshes and insert them into the pallet, but can also place the produced meshes on a stacking trolley for external purposes. These can be used, for example, for other production areas at the site, such as structural precast elements or for the third reinforcement layer for insulated double walls.

Furthermore, the highly flexible lattice girder welding machine VGA Versa ensures a qualitative and cost-optimised process in the provision of reinforcement. This lattice girder welding machine offers the advantage of a fully automatic height adjustment as well as a corresponding automatic wire diameter change. Due to these technical advantages, the use of the VGA Versa not only reduces production times, since no retooling is required for the different heights, but also costs due to savings in storage costs and waste. The lattice girders produced are also inserted completely automatically into the prepared pallets by a multi-axis linear robot.

Complete solutions from a single source

The economic advantages of using the ebos® control system come to bear in all areas of precast concrete element production. ebos was developed by Progress Software Development, also a member of the Progress Group, and has been continuously adapted to the increasing requirements of the precast concrete industry. The different coupling modules for the subsystems ensure that the data is always available at exactly the right time, at the right place and that the entire precast concrete element production functions smoothly with a single, homogeneous system. Complex interface problems are avoided and the customer enjoys the advantage of "everything from a single source" with a comprehensive range of services and extremely simple user guidance.

In the new plant, special attention was paid not only to automation but also to the optimisation of the working area. New social rooms, a spacious staff restaurant and ergonomic production facilities were created for the employees. The interior colour design was also not left to chance, but was planned by colour psychologist Billa Hebenstreit. The colours used, green and blue, with their positive effects are said to have a calming, concentration-enhancing and sound-absorbing effect.

With the new plant, Eder is breaking new ground in the production of precast elements. Not only do the dimensions of the elements continue to grow, Eder provides its products with all the necessary accessories such as continuous pipes, reinforcement connections, electrical installations and openings at the factory. The high degree of prefabrication of the concrete elements considerably accelerates the construction process on site and reduces the installation effort to a minimum. Eder sums up the advantages of the cooperation between Eder and Progress Group as follows: "The advantages of the Progress Group are clear to us: On the one hand this is due to the circulation systems operated by Progress itself, a deep understanding of the production process and on the other hand the complete solution from a single source. The interfaces must be reduced to a minimum in order to successfully complete a complex project". ■

FURTHER INFORMATION

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