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A success story for double walls in France

Spurgin has been focussing on innovation, sustainability and efficiency for decades – supported by its long-standing partnership with the Progress Group. The French market leader for conventional double walls and double walls made of concrete with a low CO_2 content realises state-of-the-art circulation systems with the full-range provider for the precast concrete industry, as is currently the case in Mignières in northern France. The result is a new production line for the manufacture of wood-concrete elements consisting of 85% bio-based material – a pioneering project for the precast concrete industry, and not just for Spurgin.

Spurgin has been synonymous with innovative and efficient double wall solutions since 1978. With a clear focus on simplification, quality and sustainability, the company develops customised products for the construction site of tomorrow - and is now a market leader in France. With a total of seven pallet circulation systems at six locations, Spurgin is already a long-standing customer of Progress Group. The partnership, which has existed since 1998, is based on mutual trust and the pursuit of innovation and maximum performance for the efficient production of precast concrete elements with low emissions. With a total of 15 different products from four demand-orientated segments, Spurgin places particular emphasis on innovative solutions that improve the carbon footprint and ensure high-quality end products. These are double walls, insulated double walls, architectural walls made with formliners or coloured concrete as well as precast slabs with in-situ topping and solid walls in wood-concrete.

Long-standing partnership in figures

The Progress Group realised its first circulation system in Alsace, near its headquarters in St. Croix-en-Plaine, in 1998. In 2004, Spurgin launches the Isopré® wall, a double wall with integrated insulation, and builds another plant in south-east France (Blyes), now the company's third site. This was followed by the fourth plant in Chartres (Mignières) in 2011 and the fifth plant in Nesle in 2017 to better serve the Paris market, the west and the north of France. Just one year later, the sixth plant in La Roque d'Anthéron near Marseille opens its doors to realise the full potential of southern France. In 2023, the double wall circulation system at the St. Croix-en-Plaine site will be completely rebuilt and brought up to the latest standard. In the meantime, partial modernisations of the pallet circulation systems with the fully integrated reinforcement machines have been carried out repeatedly in order to optimise the production systems.

The newly designed concrete spreader is used to discharge the wood-concrete.

The new centrepiece of the plant at Spurgin: the PreFix shuttering system.

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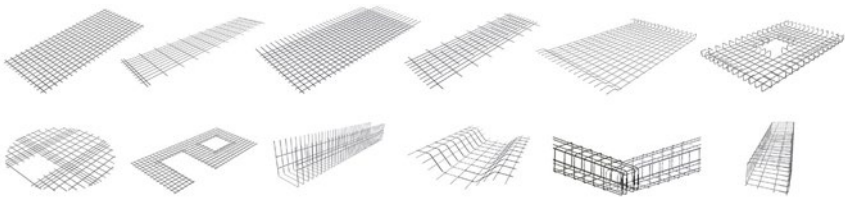
Mesh Welding Plants



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The tilting equipment in the new hall brings the finished wall elements into a vertical position and thus enables safe and user-friendly removal.

The new turning equipments picks up two pallets at the same time and turns them through 180°. This makes it possible to apply a load-bearing structure made of normal concrete to the top of the wood-concrete element.

Pilot project – plant for bio-based wood-concrete elements with low CO_2 content

The latest joint project is located in the north of France, in Mignières, and includes a new plant for the production of wood-concrete elements that have a sustainable footprint and are made from bio-based material. The new regulations in France prompted Spurgin to launch this special solid wall on the market. Support was provided in particular by Ebawe Anlagentechnik, the specialist for circulation systems within the Progress Group. The automation for these special production requirements was realised with innovative machines and software solutions.

In collaboration with Spurgin and CCB Greentech, a concrete spreader for spreading wood-concrete and a special device consisting of a spiked roller and tamper were designed. This ensures levelling of the removed wood-concrete and correct compaction afterwards. The turning equipmentsupplied can pick up two pallets at the same time and turn them through 180°. This makes it possible to apply a load-bearing structure made of normal concrete to the top of the wood-concrete element.

PreFix shuttering system at the heart of the new system

Progress has developed a FormMaster shuttering and de-shuttering robot with the PreFix shuttering system for the new type of solid wall. The particular challenge in this project was the difficulty of producing different wall thicknesses and wall contours. Due to the large number of possible combina-

Opening ceremony of the new Spurgin plant for the production of wood-concrete elements in Mignières.

The Métifiot wine cellar in Saint-Rémy-de-Provence was realised with Spurgin double walls in matrix construction.

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RATEC AMERICA

Installation of wood-concrete walls, double walls with low CO_2 content and Isopré walls at the Bouygues hospital in Tours

First wood-concrete elements after just three months of construction

After the placement of the shutters, the concrete is spread with the concrete spreader, levelled and then compacted. The pallets with the already deshuttered elements are stored in the curing rack via a storage and retrieval machine. The double wall elements produced with the turning device are brought into an almost vertical position and removed using the tilting equipment.

The complete circulation system was installed and successfully commissioned in just three months – a challenge that is only possible with a well-coordinated team. This project represents a significant milestone for the French construction industry, and Progress Group will continue to accompany Spurgin with a great deal of innovative strength on its path towards automation and digitalisation of precast concrete element production. ■

tions, a conventional shuttering system would have required an enormous amount of space in the shuttering profile store. The special PreFix shuttering system consists of a universal basic shuttering with magnets and various facing elements, which are changed fully automatically by the shuttering robot. This combined system makes it possible to realise elements with different wall heights and contours on each pallet. The need for shuttering elements is significantly reduced – and with it the space required in the warehouse.

The shuttering is removed before the elements harden using a deshuttering robot, which is made possible by the dimensional stability of the wood-concrete after compaction. As a result, only a fraction of the shuttering elements are required.

Digitalisation of production processes

The entire system is supported by the ebosyc software solution, which enables the required shuttering to be assembled in advance by the storage robot so that there is no waiting time when changing the wall height or thickness. Another highlight is the innovative 3D visualisation via the Graphical Performance Analyzer (GPA), which enables clear and location-independent monitoring of the entire production process. The complete, visualised production overview and simple operation ensure a seamless and optimised production process. In addition, ebosyc enables flexible pallet allocation and production control.

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