

PRESS RELEASE

Cobias presents technological optimisations for prefabricated concrete parts at the BAU 2017 in Hall A1, Booth 127.

The higher the degree of prefabrication at the plant, the lower the risk of assembly and execution errors under time pressure and in adverse construction site conditions.

As the degree of prefabrication increases, the costing reliability also increases and optimises the construction process, as fewer individual services and materials have to be organised and inspected during the construction process.

In particular the "Slim-Line" product line with its flattened plastic void former modules is predestined for use in prefabricated concrete plants for the production of semi-prefabricated and prefabricated parts.

What has proven its worth thousands of times during the production of in-situ concrete is becoming increasingly popular at prefabricated concrete plants due to the Cobias product extensions and optimisations. Through the use of the Cobias technology in semi-prefabricated parts and prefabricated parts, the prefabricated concrete industry is able to expand its areas of application and sales possibilities. In addition, the use of these plastic void former modules means that prefabricated concrete manufacturers can follow the trend of offering more effective and more efficient products, primarily then when building certification acc. DGNB, LEED or BREEAM is desired.

To date, Cobias can look back on approximately 10 million m² of finished voided flat slabs used across the globe, so that this patented technology used to optimise flat reinforced concrete constructions in terms of weight and material consumption can be designated as an accepted construction method, in particular as a technical approval has been issued for both product lines – "Eco-Line" and "Slim-Line".

The Cobias technology is based on the creation of enclosed voids inside a reinforced concrete area or slab.



By using these enclosed plastic void formers made of recycling materials, concrete can be replaced where it is not structurally necessary.

This patented system can also be used by prefabricated concrete plants to optimise their semi-prefabricated and prefabricated parts in structural, economic and ecological terms, so that they can develop new applications and open up new markets.

Optimisation through reduction

Under identical fringe conditions such as concrete quality, deformation limits, additional load, traffic load and span, a "Cobias voided flat slab" is up to 10% thinner than a completely solid reinforced concrete slab.

Furthermore, the statically-required flexural reinforcement can be reduced by up to 15%. At the same time, the slab dead weight is reduced by up to 35%.

With an identical dead weight, it is possible to produce a Cobias voided slab with an up to 40% larger span in comparison to a completely solid reinforced concrete slab.

Convincing practical examples from reinforced concrete prefabricated part production

Cobias is able to refer to a series of practical examples which clearly show how simple the production of semi-prefabricated parts and also of prefabricated parts actually is, and above all how efficient and practical is their further use on the construction site. The Cobias technology can be applied for prefabricated and semi-prefabricated slabs, for staircase landings, for balcony slabs, prefabricated walls and shafts.

The combination of the Cobias void former technology with the production know-how from the prefabricated concrete plants offers further advantages such as for example the possibility for subsequent opening up of building sections, and the integration of building technology necessities such as cables, empty conduits, installations and recesses.

Cobias void former modules in concrete semi-prefabricated parts



Cobias void former modules combined with semi-prefabricated slabs. In this version, the void former modules are installed at the plant in the semi-prefabricated parts.

*File name: Cobias stacked semi-prefabricated parts
Source: Cobias*

The use of Cobias void former modules in semi-prefabricated slabs represents a further step in plant manufacture, which is independent of the weather and which has the advantage of speeding up the construction process on building sites.

The distance of the props can be increased; the lattice girder geometry can be optimised, less concrete has to be ordered, brought to the building site, installed and compacted and the span of the prefabricated slabs can be enlarged, amongst other things due to the lower slab dead weight.

The production of the semi-prefabricated part initially takes place at the prefabricated concrete part plant. Immediately after this, the void former modules are placed in rows or singly depending on the layout specifications into the fresh concrete between the lattice girders, and pressed down slightly into the fresh concrete on the thin semi-prefabricated slab.



The installation of the upper reinforcement layer and the subsequent concreting is just the same as in the conventional process.

File name: Cobiax_7048
Source: Cobiax

After the concrete has hardened sufficiently, the semi-prefabricated parts with the embedded Cobiax void former modules are delivered to the building site and installed. Then the butt joints or cross reinforcements are installed.

The installation of the upper reinforcement layer and the subsequent concreting process are identical to the conventional process.

No additional measures are required during concreting in order to secure the void former modules against uplift.

Cobiax void former modules in prefabricated concrete parts





Cobiax void former installed in the formwork ready for concreting.

The result: Exact dimensions with accurate edges and low dead weight, ready for loading and installation.

File names:

- *Cobiax prefabricated concrete part*
- *Cobiax prefabricated concrete part 4*

Source: Cobiax

During the effort to build in a more efficient, material-saving and intelligent manner, the use of Cobiax technology void former modules not only in in-situ concrete slabs, but also in prefabricated part construction has established itself as a particularly economically viable and technically optimised solution. For example, they can be used in the area of prefabricated concrete slabs for single and two-family homes, for offices and industrial projects and for hotels and functional buildings such as transformer and substations and also garages. The technology has also proven itself eminently suitable for balcony and landing slabs.

The weight reduction in the prefabricated concrete parts due to the use of the void formers made of recycled plastic produces advantages in terms of statics and logistics, and facilitates handling during installation. Amongst other things, this is because the required crane capacity is substantially reduced. In the case of balcony slabs as prefabricated concrete parts combined with void former modules by Cobiax, another decisive advantage has been revealed: through the lower building section dead weight, the dimensioning of the thermally separating component is lower and therefore less expensive.

In comparison with other prefabricated concrete slabs such as hollow-core slabs, prefabricated slabs produced using Cobiax technology can bear loads on two axes and can be produced to almost any slab width – with and without prestressing – at almost any prefabricated concrete plant.

Photo, image subtitle



Interested entrepreneurs are welcome to speak to the two Managing Directors, Dr.-Ing. Karsten Pfeffer (left) and Dipl.-Ing. Volkmar Wanninger (right), also during the BAU 2017, in Hall A1 at the Cobiax Booth 127 on the subject of cooperative collaborations.

*File name: Cobiax Wanninger Pfeffer
Source: Cobiax*

Keywords:

Cobiax, BAU 2017, optimisations, prefabricated concrete parts, degree of prefabrication, costing reliability, construction process, "Slim-Line", plastic void formers, prefabricated concrete plants, production, semi-prefabricated parts, prefabricated parts.

All motifs available in print quality.

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