

Construx b.v.b.a., 8531 Hulste, Belgium

Tilting tables and a wall battery mould for the production of low cost individual houses

Since several years, the company Hoger Sp. Z.o.o. has been operating as an active player on the Polish construction market, as a supplier of building materials and precast concrete elements. Due to the increase in demand for low cost housing, they decided to focus on the development of basic but aesthetic and environmental friendly houses. By using state of the art precast and insulation techniques, they manage to offer houses with surfaces of 99m² to the lower market segment at the very competitive price of € 65.000,- (land not included).

Each house consists of a living room, a kitchen, a bathroom, an entrance hall, a technical space and 3 bedrooms. Optional, the house can be extended with a terrace. The constructive elements such as the grade beams, the inner and outer walls and the roof are all made of light aggregate concrete and pre-fabricated in a new precast facility. For the insulation, they have chosen to use EPS and foam glass slabs. These slabs are produced in-house on an automated production line.

All this results in a highly insulated, nice looking individual residence with a lead time of maximum 3 months between order and completion. The on-site assembly takes only 1 day, hence the motto of the Hoger company : 'Each day a house'.



Construx tilting tables (8m x 4m) for the production of the outer walls

To realize all this, the most modern and performant precast manufacturing techniques are required. Performant but also easy to use in order to guarantee short lead times. Construx's vast experience in the field of moulds, formwork and automation, built up through the years, was the main argument for Hoger to choose them as a partner to develop this project together.

In a first stage, the decision was taken to purchase the most adequate formwork system for the walls. This resulted in 4 tilting tables for the production of the inner and outer walls and a 10 pocket wall battery mould for the fair-faced double walls.

Construx tilting tables (8 m x 4 m)

Because of the application of very thick foam glass slabs, Hoger choose to use the extremely solid Construx tilting tables. These tilting tables have a rigid steel top structure with an 8mm steel sheeting in 1 single piece, without any joints. These long and wide plates are rolled specially for being used as formwork surfaces. At Construx, they are sandblasted and polished on an automated grinding machine in order to obtain an extremely smooth finish.

In order to demould the wall panels without damaging the edges, the panels need to be tilted before they are removed from the table. By doing so, they can also be stored vertically. The use of a hydraulic tilting table is the most appropriate way to lift the panels. The tilting tables consist of a rigid top structure which is fixed onto a tilting articulating base frame. With the use of perfectly synchronised hydraulic rams the top structure can be tilted up to 80°. By using multi-stroke cylinders there is no need for recesses in the floor.

The tilting tables are equipped with high-frequency vibrators with a centrally located frequency converter. The tables are insulated and equipped with heating pipes underneath the top part of the table.

Due to the fact that the outer walls always have the same thickness, Hoger choose to work with fixed, non-adjustable side-forms on the bottom longitudinal and on one transverse side of the table. The box-outs for openings for windows and doors are fixed by means of 2000kg Construx box-magnets.



Construx wall battery mould with 10 pockets for the production of the fair-faced double walls

Construx wall battery mould with 10 pockets

The necessity of double fair-faced inner walls, which need no post-process finishing, required those walls to be manufactured vertically in a wall battery mould. The walls needed to be very smooth and without any joints. The use of a standard Construx wall battery mould guarantees to cope with those specifications.

The Construx wall battery mould is user-friendly due to the wide free working space in between the suspended panels. The panels of the wall battery mould run on an overhead track, as they hang suspended on a steel overhead structure. Each panel has a double-sided 10mm steel sheeting in 1 piece, without joint. These long and wide plates are sand-blasted and polished on an automated grinding machine in order to obtain a smooth finish. The level of smoothness depends on the customers' requirements. The Construx wall battery moulds are extremely suitable to prefabricate wall panels which are fair-faced on both sides.

Moreover, the outer panels are beefed-up in order to limit the number of tie rods. The end panel and all middle panels are manually moved by means of a chain drive. Each pocket is equipped with easily adaptable height adjusters and detachable side-forms which can be bolted on a number of pre-defined locations.

The correct use of magnets allows an easy fixing of side-forms for doors and windows. The centre panel and both end panels are equipped with steel working platforms with safety rails and access ladders. ■

FURTHER INFORMATION

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