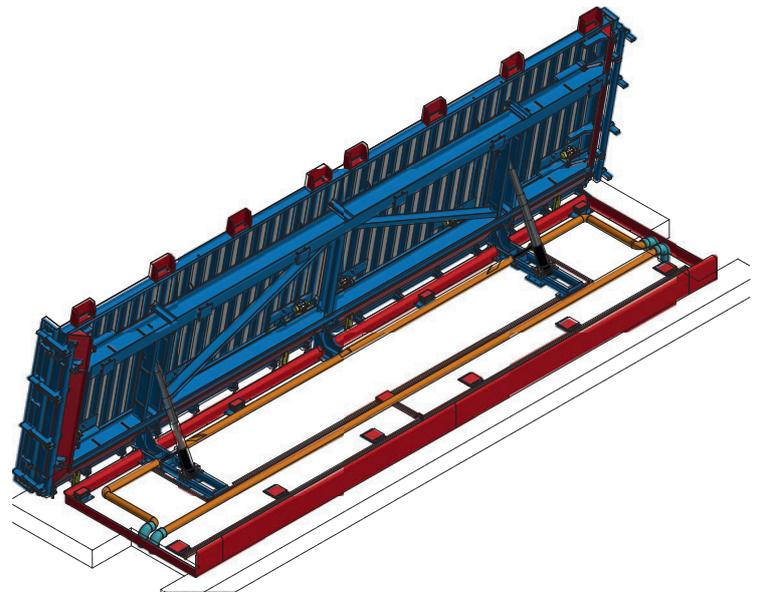


Construx bvba, 8531 Hulste, Belgium

Six fully equipped hydraulic tilting tables installed in a brand-new precast plant in France

Mahieu Construct s.a., a Belgian company based in Comines, specialising in the design, manufacture and assembly of industrial and agricultural buildings made of steel frame or reinforced concrete, recently launched a new company, based in the north of France. Premadun s.a.r.l. will focus on manufacturing precast concrete elements for industrial and agricultural buildings. To develop their precast wall production, they requested Construx to design a complete package of six fully equipped hydraulic tilting tables with a complementing flexible and adjustable side-form system.

Seen Premadun will mainly manufacture for Mahieu Construct, which is their own construction company, each tilting table needed to be fit for accommodating two large size panels of between 6m and 7m in length and of up to 4m in height. Hence, a 14m x 4m size for all six tables seemed to be appropriate. The surface of the tables is an 8mm steel sheeting which consists of one single steel plate only. The type of steel is S355JR which gives an extra durable surface. The manufacturing of the plates is done according to the OFL-S standard which is a special procedure to obtain extra flat surfaces, fit for the use in fair-faced concrete applications. The surface



Hydraulic tilting table, 3D-view

is shot blasted and polished on an automated grinder, until a perfect finish and the required smoothness is obtained. The grinding is done with grains 26 and 80, and at the end the surface is polished with "scotch brite". The maximum deflection guaranteed by Construx is 1,5mm on 3m length.



Tilting tables standing upright

PRECAST CONCRETE ELEMENTS

Because of the use of vibrators Construx supplied tilting tables with a detached top part. Special shock absorbers were placed in between the top part (frame + sheet) and the tilting frame. This is done in order to avoid vibrations being directed through the tilting frame and the supports into the factory floor. Hence the top part of the table can easily be disassembled. The floor supports on which the tables sit are also equipped with shock absorbers.

Construx supplied one central hydraulic unit which is fit to accommodate twelve tilting tables. Each top part of the recently supplied first series of six tables is tilted by means of two telescopic rams. These rams are incorporated in the floor supports and driven by a hydraulic aggregate with two separate pumps in order to obtain a perfect synchronisation of the rams. The tilting of the tables can be controlled from the centrally located electrical cabinet or by means of a wireless remote control. When using the remote, the required table needs to be selected with a safety key. The position of the hydraulic rams is chosen to avoid the need of making openings in the factory floor in order to make the rams fit underneath the table whilst the surface of the table is at an ergonomic height of 725mm. The tilting angle of the tables is 80°, and when in upright position, the bottom sides of the tables come very close to the factory floor due to the positioning of the hinges, therefore no space in height is lost due to the tilting. The tables can carry a maximum load of 800kg/m² and the overall maximum tilting capacity is 26T, when the load is equally divided.

Each table is equipped with ten 14kN, 1,2kW, 6,000rpm high frequency vibrators and has a separate control cabinet with a motor protection switchbox. All motors can individually be controlled. Construx also supplied one central vibration control cabinet with an 18,5kW variable electronic frequency inverter and two extra-large 3-digit LED displays. Per table, the operator can choose to either run all the vibrators at the same time or the left half or the right half separately. The top LED display indicates the location of the table (two first digits: row



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Overview of the production facility showing tilting tables





LED displays for frequency-controlled vibration

and position) and the configuration of the activated vibrators (last digit: none, left, right, all). The bottom LED display indicates the chosen frequency (0 to 200Hz). The complete electric and electronic installation is done with vibration-proof cables and according to IP65 standard specifications. Each tilting table has a steel casing all around, for protection and for fixing insulation panels when required.

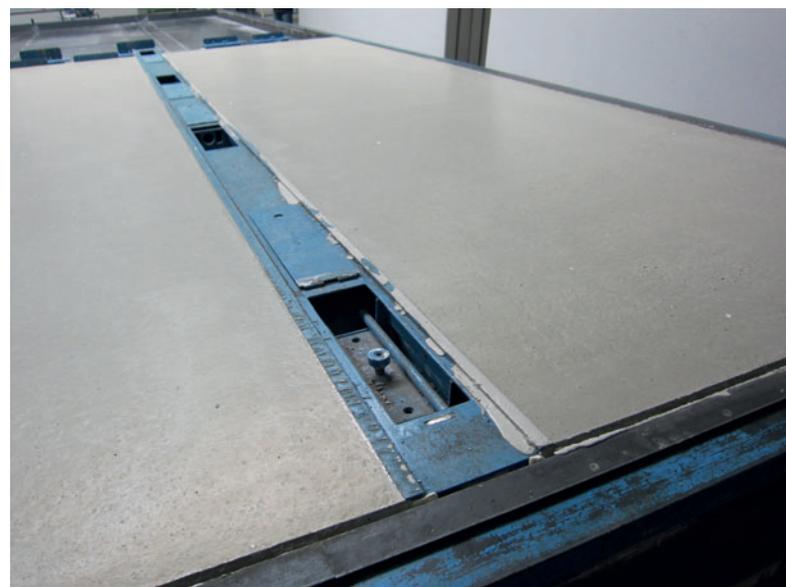
Side-forms, magnets and extensions

All tables are equipped with full steel side-forms on three sides: the 14m side at the bottom and both 4m sides. These side-forms are adjustable in height from 100mm up to 310mm (two tables) or 140mm up to 350mm (four tables). A 90° angle can easily be adjusted, and the height can rapidly be adapted. A rubber joint is incorporated between table and side-form. The bottom side-forms are divided into two individually adjustable 7m long parts. These 7m long side-forms have a detachable trapezoidal chamfer for tongue and groove connecting panels. All adjustable side-forms have a 10mm x 10mm top chamfer which is constructed as a 60mm wide machined detachable top-up part. All adjustable side-forms have also a 10mm x 10mm bottom chamfer, this is a 30mm wide machined part which is welded onto the table. The 4m long side-forms can be opened and closed with hydraulic rams in order to speed up the production process. The hydraulic rams keep the side-forms in place, so no extra fixation is required.

Construx also supplied removable side-forms of 100mm, 140mm, 200mm and 270mm high, all of which are 7m long. These side-forms are detachable and are held in place by means of 2,000kg box-magnets. The box-magnets are removable and interchangeable, and they are fully integrated in the side-forms, with a protection cover so no concrete can get into the forms. These 7m long top side-forms are double sided. Some of the forms have two flat sides, the others have one flat side and one side with a groove.

In order to use the table's full width, Construx supplied individual supports along the top length of the table. These supports can be used as an extra work surface if the side-forms need to sit at the edge of the table. This means that the 4m wide tables can be used to cast 4m wide elements.

Fixing short sides as well as door and window openings onto the table is done by means of the powerful 2,000kg Construx box magnets. These full steel magnets have rods on both sides, holding steel brackets in place, horizontally as well as vertically. Construx supplied straight brackets and corner brackets, with different heights: 90mm, 140mm, 200mm and 240mm. The brackets are screwed or nailed against a timber girder or directly against the plywood form.



Double side-forms with incorporated removable 2,000kg box-magnets



Steel bracket with side shutter held in place with 2,000kg box-magnets

Shaping the future of concrete

Having a large permanent stock of big size, 8mm and 10mm, OFL-S quality steel plates and having a large capacity to produce top quality hydraulic tilting tables, Construx complied with the short lead time and with Premadun's requirement to

obtain a complete package of hydraulic tilting tables and all relevant accessories. As being one of Europe's leading tilting table manufacturers, Construx supplied a flexible and versatile solution to manufacture Premadun's precast concrete wall panels. These Construx hydraulic tilting tables are above all good value for money. It is absolutely the most economical way of producing precast concrete wall elements. Construx is an engineering-driven manufacturing company relying on the commitment, creativity and experience of its employees. The company's aim is to establish a partnership, rather than to be a supplier, in providing turnkey solutions for precast and on-site formwork issues.

FURTHER INFORMATION



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