bauma 2007 – The latest technology for manufacturing building components

Date: 03-26-2007 07:03 PM CET
Category: **Industry, Real Estate & Construction**
Press release from: **Messe München GmbH**

The 28th bauma, which takes place from 23 to 29 April 2007 in Munich, is a showcase for all the latest technologies used in the production of a wide range of building components made from various raw materials. In this segment of manufacturing, too, the clear trend is towards automated processes. Cost-effective production in line with market needs can only achieved through a combination of modern engineering and electronic control and visualisation systems.

Until a few years ago machinery for making concrete products such as paving slabs or slope setts formed a separate, but central unit within a manufacturing operation. Now these units are combined with many other components to form integrated automated manufacturing systems, capable of doing jobs from concrete mixing through to palletising and packaging. Such systems require modular control systems which utilise the full spectrum of modern technology. Similar developments are also observed in the production of large-format precast concrete components and in the production of lime- and gypsum-bound components.

The 28th bauma will therefore not only be featuring entire production systems, but also the latest developments in control and visualisation systems.

Excellent cycle times in concrete block production

The concrete block industry is achieving very respectable growth worldwide. This is accompanied by a tough competitive situation and stagnating prices. Cost-effective production is now only possible using the latest machinery and minimum personnel.

The suppliers of machinery for producing concrete blocks and stair treads, and of finishing plant are taking advantage of this trend and offering a broad range of machinery for semi-automatic and fully automatic stationary production. High production speeds in combination with a modular machine system, which enables later updates, are a typical example of this. Cycle times in pallet production of under ten seconds are no longer a pipedream.

The ‘wet side’ of production has now also improved in terms of time and cost, thanks to fully automatic, driverless transport systems, vacuum suction for the moulds, an automated cleaning and drying station and a flexible dosing system. Dosing recipes managed by computer mean that production can be switched over within seconds for different filling quantities and cycle times. This makes it possible to mass produce a range of products and styles without any losses due to change-over times.

The preparation and transport of the concrete mix play a large part in reliable, rapid production of cast concrete components. Here the capacity of the mixer is critical, as well as fast transport, both of these processes now being largely automated. And finally the quality of the moulds is also important for the wide variety of components. With the help of CAD technology and corresponding software for automatic 3D milling, moulds can be produced with a high degree of precision as regards dimensions and shape.

Great pressure to rationalise the production of cast-concrete components

Not only for the smaller concrete components and concrete setts is the latest technology in demand. The pressure to rationalise production processes is also being felt in the area of large-format cast-concrete components. Modern formwork systems for manufacturing staircases, for example, are capable of producing staircases that fit all the standard step gradients, widths and thicknesses. The time taken to change a machine over to produce a staircase with a different rise and tread is now down to less than 30 minutes.

Noise and the need to enclose entire systems is one of the main themes in cast-concrete component manufacture. So, too, are

the extreme stresses placed upon the steel tables by vibration. New solutions and ideas for improvement are constantly being sought. For example, the manufacturers of large-format tipping and vibrating tables are striving for high torsional stability through integrated transverse vibration and other measures, in order to ensure a torsion-free tilting process. Also, because of the constantly changing production requirements, the homogeneous distribution of vibration energy for large formwork tables is also placing great demands on the manufacturers and their system suppliers, even with fully electronic control of the vibration process.

The 28th bauma in Munich will be featuring state-of-the-art technology for all the key components in this segment of manufacturing. Laser-projection systems for rotating and stationary systems, precast components made with the aid of 3D modelling and highly modern vibration units are just some examples.

Automated systems also available for the production of aerated concrete and sand-lime bricks

Their benefits in terms of thermal, fire and noise protection plus simple processing are making sand-lime bricks and aerated concrete a highly popular building material. Aerated concrete blocks with thermal conductivity as low as 0.08 W/mK are industry´s answer to regulatory requirements for reduced energy consumption. Also, sand-lime bricks of high dimensional precision and featuring an innovative push-fit system are helping cut building time drastically.

These are just some of the current examples of how nowadays cost-effective manufacturing is only possible using modern manufacturing methods and largely automated systems. All the stages integrated in the process of manufacturing sand-lime bricks – for example machines to mix, meter or cut the material – can now be ordered from the large system manufacturers as automated systems. There is a choice of options for the stage after the cutting of the block when it is still ‘green’. A special return system avoids rejects occurring during the autoclave stage of processing (steam curing). Depending on which system is in use, it´s even possible to dispense with the separating machine positioned upstream of briquetting.

Many of these machines and others will be on display – some in full working mode – at the 28th bauma in Munich.

Further information:
www.bauma.de

bauma

The world´s biggest international trade fair for machinery for the building and construction, building-materials and mining industries takes place at the New Munich Trade Fair Centre from 23 to 29 April 2007. This event, organised by Messe München GmbH, will take up over 540,000 m2 of indoor and outdoor exhibition space. The last bauma in 2004 attracted 2,801 exhibitors from 47 countries, all making full use of the fair as a platform for communication, product presentation and marketing. 50% of the exhibitors were from countries outside Germany. 416,000 trade visitors came to bauma in Munich in 2004, 29% of them from abroad. The number of exhibitors and the number of global brands among them is evidence of bauma´s central significance as an international forum for the sector. 93% of the exhibitors at bauma 2004 reported contacts with international trade visitors at their stand.

Messe München International (MMI)

Messe München International (MMI) is one of the world´s leading trade-fair organisations. It organises around 40 trade fairs for capital and consumer goods, and new technology. Over 30,000 exhibitors from more than 100 countries, and over two million visitors from more than 200 countries take part each year in the trade fairs in Munich. In addition, MMI organises trade fairs in Asia, Russia, the Middle East and in South America. With four subsidiaries in Europe and Asia and 66 foreign representatives covering 89 countries, MMI has a truly global network.

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