GERTEC
Maschinen- und Anlagenbau GmbH

History of GERTEC CLC technology

A model factory, the so-called "ETA Factory" is being established in 2015 on the campus of the Technical University TA Darmstadt in the framework of a unique interdisciplinary research project. Applying a comprehensive approach – comprising all divisions of a factory – this project will examine options and means for maximum reduction of energy consumption and CO2 emission of an industrial production plant.

The building shell planned for the ETA Factory research project of TU Darmstadt consists of reinforced concrete elements that will be lined with an insulating layer, up to 40 cm thick, from foamed concrete. This insulating layer shall be continuously applied to the wall and ceiling elements in a single concrete pouring action. The dimensions of the largest elements are approx. 20 x 3 m. The physical properties and consistency of the foamed concrete applied must be kept stable within tight tolerances to ensure the homogeneous structure of the insulating layer over the whole wall element. The reproducibility of the chosen recipe at all times is just as important.

GERTEC Company has developed a new, innovative mixing method for the production of the above insulating layers to mix foamed concrete and mineral foams; they also engineered the required mixing plant. This plant enables the production of mineral foam (foamed concrete) of the highest quality continuously and on demand, so to speak. This foam can then be installed directly from the plant. Due to the major differences in the components' (foam, slurry) density conventional mixing methods actually prevent homogeneous mixing. The GERTEC engineers have therefore made use especially of these density differences in an ingenious way, employing the mixing device that has been registered for patent approval.

The new mixing method, which is optimally tailored to the requirements, enables the production of extremely stable mineral foams and light foamed concrete in the density range of approx. 80 to 600 kg/m3. They do not exhibit any tendency of slumping even at filling levels far above one metre. Because it is a continuous process, the actual mixer is very small compared to the high throughput performance; therefore, both the plant and the cold-setting foamed concrete produced by it boast an unrivalled energy efficiency.

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