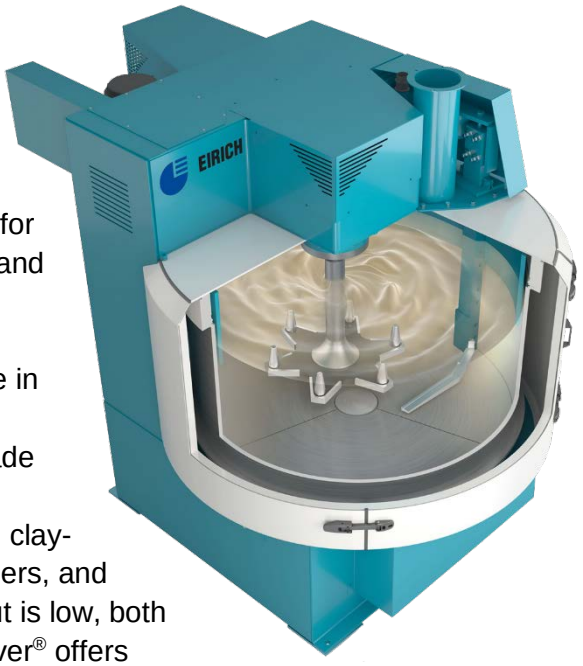
Press Release

Hardheim, March 2018

EIRICH at Ceramitec 2018: Focus on Cost-Saving Preparation of Slips

Energy costs are constantly rising. EIRICH has set itself the goal of offering preparation methods to the ceramic industry that will enable users to save energy and produce more cost effectively. So that they can, in turn, gain an advantage in the international market. With EIRICH technology, preparation times can be drastically reduced, and energy savings of up to 50% can be achieved.



The main focus of the EIRICH presentation at this year's Ceramitec is the cost-effective production of slips in the EIRICH dispersing mixer, the so-called MixSolver®. It will be of particular interest to manufacturers of sanitary ceramics. However, the MixSolver® also offers advantages for the preparation of spray slip, e.g. for manufacturers of wall and floor tiles and of technical ceramics.

For sanitary ceramics, the quality of the slip plays a key role in slip casting or pressure filtration. Single and multi-stage processes are normally used for the preparation of slips made from clay and hard materials. Single-stage processes are operated with ball mills, while in multi-staged processes the clay-based raw materials are initially dissolved in stirring containers, and the hard materials are then added. Because the power input is low, both processes involve long process times. The use of a MixSolver® offers significant advantages here.

Preparation of slips with the MixSolver® significantly reduces preparation times

Preparation in the MixSolver® takes place in the plastic phase; thanks to the significantly higher power input, the preparation time can be drastically reduced to times of less than 30 minutes. The resulting energy savings compared to systems with a stirrer or ball mill can be as much as 50%. Due to the long processing times involved in preparation with a stirrer or ball mill, several of these units need to be operated side by side in order to maintain sufficient supply for production. The faster EIRICH technology offers noticeable simplifications here, with fewer units required and the costs and time for servicing and maintenance reduced accordingly.

Casting slips prepared with the MixSolver® are directly processable

In addition, research carried out by Wester Wald Campus at Koblenz University has shown that compounds prepared in the MixSolver® are not affected by aging effects. This is the case during normal processing with stirring technology, where the rheology can change for a period of up to five days for sanitary pressure casting slip. By contrast, no further rheological changes occur after preparation in the MixSolver® because the clay minerals are completely delaminated. Customer trials have shown that sanitary slip prepared in a MixSolver® can be processed immediately after production. The time savings means increased productivity for the overall process. In addition, selective preparation of special compounds in addition to the standard compound is possible. This results in more flexible utilization of the production plants.

Maschinenfabrik Gustav Eirich GmbH & Co KG, Walldürner Str. 50, 74736 Hardheim

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Dry preparation with the EcoPrep® process saves up to 60% energy

The EcoPrep® method that has been successfully launched by EIRICH will be of particular interest to manufacturers of ceramic tiles, as it is used to produce press granules particularly cost-effectively as part of the build-up agglomeration process. Thanks to grain standardization, the amount of grain that is within the target range can reach almost 100%. The granulate, which is comparable to spray-formed grain in terms of flow properties (in contrast to compounds produced with wetting methods), is also suitable for the production of large-format tiles (e.g. 800 x 800 mm). The savings (up to 60% less energy, up to 80% less water and a reduction in additives of up to 100%) are significant.

Competent advice for all kinds of masses and consistencies

Professionals from all other areas of the ceramic industry will also receive excellent support from EIRICH – with competent advice for mixing, pelletizing, granulating, kneading, drying and fine grinding, as well as for the preparation of compounds for dry pressing, wet pressing, isostatic pressing, extruding, injection molding, slip casting and film casting.

Thanks to the unique operating principle of the EIRICH mixer and its versatility in terms of potential applications, it is capable of processing all consistencies encountered in the ceramic industry, from powdery to viscoplastic or even liquid. It is also often possible to combine multiple preparation steps in a single unit. Mixers in sizes ranging from laboratory to production scales are available at the EIRICH test center so that this can be tested. The process engineers from EIRICH can perform tests with customer materials here and at many other of the company's sites.

References in many areas of the ceramic industry

The advantages of this technology, which is available in different sizes from 1 liter up to 12,000 liters, are now being taken advantage of in many different segments of the ceramic industry – ranging from anode compounds (graphite compounds) to expanded clay, kiln furniture, dental ceramics, electro-porcelain, ferrite, refractory materials, granulates for additive manufacturing, carbides, catalysts, ceramic proppants, grinding balls, porcelain, sanitary ceramics, abrasives and abrasive tools, stoneware, coating pigments for paper manufacturing, technical ceramics and bricks. In some industries, EIRICH mixers are already the global standard – no other unit can match its ability to process hard materials like corundum or silicon carbide without substantial wear.

For demanding applications: EvacMix®, Ex-proof, hot-mixing & Co.

Another technology that is also interesting for the ceramic industry, is the EvacMix® "vacuum mixing technology", which enables mixtures containing water or solvents to be dried back in the mixer/kneader, even in applications where Ex-proof conditions are required. A number of machines are currently being used in powder metallurgy eliminating the need for a spray tower. Also of interest, are the modern mixer heating methods for warm or hot-mixing. At temperatures of up to 250°C, this is particularly beneficial to manufacturers of graphite and refractory products who work with resin solutions. In many cases, it is possible to work with little or no solvents (with resin melts), which opens up new potential product lines with lower porosity.

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Control solutions from EIRICH ensure quality, increase productivity and increase performance

The in-house production of control systems and customer-focused program development enable EIRICH to offer advanced machine and plant control technology with state-of-the-art monitoring systems for products and machine. For applications in the area of industry 4.0, teleservice and systems for quality and online condition monitoring are of particular interest, which are also used as a basis for the recognition of optimization potentials in the overall system.

Ceramitec 2018 – the largest international trade fair for machinery, equipment, systems, process technology and raw materials for the ceramic industry and for powder metallurgy – runs from April 10-13, 2018 in Munich. The booth of EIRICH is located in hall B6, stand 201/302.

For More Information, Contact:

North America: Chris Clark, e-mail: cclark@eirichusa.com
Europe: Alban Bunjaku, e-mail: alban.bunjaku@eirich.de

The EIRICH Group is a supplier of industrial mixing, granulating/pelletizing, drying and fine grinding machinery, systems and services. The Group has its main strategic base at the corporate headquarters site in Hardheim, Germany. EIRICH has core expertise in processes and techniques used for the preparation of free-flowing materials, slurry and sludge. The main applications for these processes are in the ceramics, refractory, foundry, construction materials, plaster, rechargeable battery, battery compound, fertilizer, glass and ore dressing industries. Close co-operation between our own test centers around the world and collaboration with the research and academic community enables the "hidden champion" to provide solutions for innovative, cost-efficient products and processes. The family-managed company was founded in 1863 and operates from twelve locations on five continents.