

Hardheim, June 2019

Burwitz Refractory Company, Vietnam, expands production - with mixing and plant technology from EIRICH

The Vietnamese economy has been growing strongly for years. The demand for products such as cement, glass or chemical fertilizers is constantly growing. The demand for energy, covered by oil and coal, is also rising. In many production processes, there are process stages that run at high temperatures. These aggregates require refractories, including castables. The Burwitz Refractory Company has now expanded production at its plant in Hai Duong City - with mixing and plant technology from EIRICH.

Burwitz, founded in Germany in 1949, has been producing refractory materials for customers in the cement, thermal power plant, refinery, glass, mining and chemical industries in Vietnam for 15 years. In addition to refractory materials, installation and maintenance are also offered. While the production of so-called shaped products (e.g. bricks) has been declining steadily in the industry for several decades, the demand for unshaped products, i.e. refractory mixes (and mortars), is increasing. Burwitz produces plastic mixes, RCC regular cement castables (conventional refractory concretes), LCC low cement castables, ULCC ultra cement castables, NCC no cement castables, fast-heating refractory concretes and gunning mixes, lightweight refractory concretes, mortars, etc.

Mixers for the refractory industry must be able to mix well on the one hand and cope with hard raw materials (such as corundum or silicon carbide) without excessive wear on the other hand. The beginnings of the industry lie in the "fireclay works". At the beginning of the 20th century, the molding mixes were prepared with kneaders and formed by extrusion; naturally, a high addition of plastic bonding clays was necessary. In addition, muller mixers were used; these could not produce mixes with a targeted grain structure from mineralogically different raw materials.

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In 1924, EIRICH invented the first mixer capable of exceeding the mixing quality of a kneader and a muller mixer. It was immediately adopted by the refractory industry. Comparative tests showed: better molding mixes, shorter preparation times and less energy consumption. What was new at the time was that these mixers - developed from the planetary mixer - were equipped with a rotating mixing pan that transported the material to be mixed to the mixing tools. The transport of the mix is thus decoupled from the actual mixing process. This means that the mixing tools can run faster without causing excessive friction and wear on the mixing pan.

The new mixer has very quickly replaced the kneader and muller preparation. Now it was possible to produce dimensionally accurate and high-temperature resistant refractory bricks with less clay, to mix unplastic molding mixes without grain size reduction, to use different mineralogical and grain size materials in one and the same mixture and thus to develop and produce high-performance materials in a targeted manner. Only for the single-material system "Silicate bricks" was the muller preparation still in use. EIRICH mixers have thus enabled the development of new (and better) types of bricks in the refractory industry; the refractory industry, for its part, has helped metallurgy to make further progress - and ultimately to reach today's standards.

A further development was the introduction of the mixer with agitator in 1960. Now loose molding mixes could be prepared, a volumetric mould filling became possible. With many further developments, EIRICH is still today the standard in the refractory industry worldwide. Some of the major manufacturers still produce on mixers, which were purchased in the 1970s and still perform at their best today. New acquisitions today are mostly made with mixers with an inclined mixing tank, invented in 1972; in sizes up to 3,000 litres only 1 mixing tool is required. Neutral investigations prove that the mixing quality of these mixers is not achieved by any other mixing system. The mixers make it possible to optimally prepare all possible types of mixes. In the refractory industry today - in addition to laboratory mixers with 1, 5, 10 and 40 litres - mixers in sizes between 75 and 3,000 litres are used; larger mixers have not been used up to now.

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It is of interest in many cases that the mixer can process all consistencies. Mixers from smaller manufacturers are often designed in such a way that they can process both brick molding mixes and ramming mixes as well as plastic mixes and dry mixes (such as castables) - all in one and the same machine.

A growing market for EIRICH are mixers and plants for unshaped products, such as castables. About 40 years ago, these castables consisted of a few raw materials, e.g. three aggregates plus 15 - 20 % alumina cement (which limited their use). At that time, single-shaft axial mixers / ploughshare mixers were often used. Today, low-cement or even cementless castables are standard, with up to 20 raw materials, with additives up to 50 ppm. Hundreds and more raw materials are common in a production plant. The requirements for mixing technology are much higher, ploughshare mixers are regularly replaced by EIRICH mixers.

EIRICH also offers great advantages for the mixing of castables for precast elements production. It distributes the water better and requires up to 15% less mixing water than ring trough and planetary mixers. Often, the bulk density already increases in the first digit after the decimal point, correspondingly the open porosity decreases and the strength increases.

EIRICH supplied the core components from Germany for the new Burwitz production plant with 50 silos. These included a mixer of the RV16 size (900 litres), two mobile scales, a Quicklift and the plant control system. The conveying technology and the plant equipment were supplied by EIRICH CHINA.

For Burwitz, the decision for EIRICH means high flexibility and high plant availability. The company is thus in a position to optimally supply growing markets.

Further information:

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The EIRICH Group, with Maschinenfabrik Gustav Eirich as its strategic center in Hardheim, is a supplier of industrial mixing, granulating/pelletizing, drying and fine grinding machinery, systems and services. 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.