

Spray-powder Flowability Produced with EIRICH Eco-Prep® Technology

Ralf LOEBE

Maschinenfabrik GUSTAV EIRICH GmbH&Co KG,
Walldürner Str. 50 , 74736 Hardheim/Germany
ralf.loebe@eirich.de

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In the last 50 years, ceramic body and press granules preparation for ceramic industries especially ceramic tile industry were globally dominated by wet preparation process. Ceramic bodies generally consist of clays and hard materials. All raw materials will be ground with water addition in ball mill as a slip which has approximately 35% humidity and less than 63 microns. It means that milling time and consequently energy consumption are depending on the lowest grinding property of raw materials. Afterwards a slip is screened and spray dried to spray granules with required pressing moisture at approximately 6% to 7%. The flowability and particle size distribution (PSD) of 0 to 800 microns give a wide range of pressed tile dimensions possibility. Since energy prices such as gas and electricity have been raising dramatically and new production process had been developed, many tile manufacturers are in a re-thinking position on the traditional wet preparation process. Dry preparation process has been an alternative process to wet preparation process in the market for 20 years. The available outdated dry preparation process in the market has the following process: dry grinding of soft and hard materials together, in most of the cases (sometimes also separate); screening; and so called pre-wetting. This process have negatively proven results as the unachievable flowability, the incompatible of particle size distribution (PSD) with 30% to 45% less than 100 microns, and the necessity of recipe changing. A number of manufacturers, who has this process, is globally operating with low success and is mostly producing only smaller tile sizes. MASCHINENFABRIK GUSTAV EIRICH GmbH & Co KG, a well-known mixer and granulator manufacturer from Germany, has extended its range of process technologies. It has incorporated several technological innovations in saving production costs and offering complete preparation technologies such as in ceramic industry, the **EIRICH Eco-Prep® Technology**. The technology is not only based on dry grinding of raw materials independently together or separate but also based on more than 100 years experience in mixing and granulating technology. Press granules from the **EIRICH Eco-Prep® Technology** have similar properties in flowability and particle size distribution (PSD) with no recipe changing necessary. Furthermore there is neither further dosing equipment nor aerator in front of the presses necessary. The **EIRICH Eco-Prep® Technology** can also be implemented to existing dry preparation plant, which has not reached the expectation. Achievable cost saving is approximately 30% to 40% per tonne of dry press granules. Meanwhile in South-East-Asia, MASCHINENFABRIK GUSTAV EIRICH GmbH & Co KG had delivered and commissioned the **EIRICH Eco-Prep® Technology**, which successfully is running at 800 tonnes of press granules per day. The proven **EIRICH Eco-Prep® Technology** for the dry preparation of press-powder with similar product behaviors as traditional spray-powder for tile industry is the solution to save production cost and is the process of the future.