



Using Numerical Simulation in the Optimization of the Finishing Phases In Ceramic Tiles Manufacturing

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The Grés Porcelain stoneware surely represents a remarkable material for building inside the large family of constructive ceramics. It is appreciated in consideration of its superior properties of resistance and functionality, especially when considered respect to a relatively low cost. Billions of square meters of Grés Porcelain are produced worldwide each year, primarily in form of tiles of every dimension, thinness, color, decoration, in the way that the ceramic tile industry represents a relevant economy. But the tile manufacturing is a complex process, made by different stages and productive plants to be deeply investigated and optimized. This paper describes the use of Finite Elements for modelling and optimizing the production of Grés Porcelain tiles with special attention to the ending phases of the process, just after the treatments in kiln and realized by tool machining. The case study, used to redesign a fundamental part of a finishing machine driven by a numerical approach, is also detailed.

