

# Improving the production efficiency of ceramic facing for fireplace stove

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(Proposer: Gruppo Piazzetta Srl; UNIPD reference: Prof. Gilberto Artioli)*

The project focuses on the actual production process of the ceramics components for stoves in the Piazzetta Group Spa factory, in the attempt to reduce the production defects and wastes. The whole process from the raw clay materials to final surface fining of the products will be evaluated in terms of sustainability, energy saving in the process, and the physical-chemical properties of the products. The reduction of the present failure/waste levels will be faced through a deep knowledge of the physico-chemical, mineralogical, and rheological properties of the materials as they are formulated/reformulated at the different steps of the production process. The slurry will be evaluated by appropriate fluid-dynamical modeling and tested for the absence of segregation during fluxing. The formed/cast parts will be optimized during the drying and firing steps, in terms of the time-temperature path and the shrinkage parameters. The last part will investigate the effect of the environmental parameters, such as seasonal temperature and humidity on the production process, and eventually suggest improvements in the operating chain.

