



SANITSER

Newsletter 01-14

Project LIFE+ SANITSER

Sanitaryware production: use of waste glass for saving energy and resources

Project objectives and expected results:

The project aims to revise the production process in the Vitreous Sanitary Ware (VSW) ceramic sector by introducing relevant amounts (up to 40-50%) of glass cullet waste from urban waste disposal in the ceramic blends formulations, to significantly reduce the environmental impact of ceramic industry. Main objectives are:

- to save natural resources' deposits and preserving landscape, eventually extending trials to substituting 100% of hard-component (feldspar and quartz) with granite and SLG;
- to obtain a reduction of at least 16-18% in energy consumption and of at least 16-18% in the CO₂ emissions, lowering by 80-110°C the ceramic bodies' firing temperature and shrinking soaking times;
- to reduce production costs.

Main actions

1. Definition of new formulations for slips bearing SLG and of production processes using the modified firing time-temperature cycles at lower temperature;
2. Glaze composition revision in the light of firing time-temperature cycles defined anew;
3. Final tests for process and final product, first on pilot plants than on industrial plants.

Coherence with EU environmental policy objectives:

- 1- Improved management of waste materials (recycling, minimization of waste for disposal);
- 2- Saving of raw materials;
- 3- Improved energy efficiency of ceramic production process;
- 4- Reduction in the Energy consumption for transportation of raw materials actually bought on external markets (mainly Turkey).





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Progress of the project (up-to-date 31/01/2014):

Sanitser project, realized with the contribution of the Life financial instrument of the European Community, started on July 1st, 2013 and will end on March 31st, 2017.

During these first seven months we worked at the following activities, some of which were completed:

- Preliminary study of slips replacing feldspar with different amounts of soda lime glass (SLG) to define the new reliable time-temperature-composition ranges to investigate. This first study has been made by the University of Milan, Earth Science Department;
- characterization of slips bearing SLG, pitcher and granite in different ratios, studying a slip- rheology adjustment strategy to control thixotropy and optimize castability, and to guarantee preservation of technological quality of the final ceramic bodies with respect to present standards for marketability;
- glaze composition revision, in the light of new firing time-temperature cycles defined and of the rheological properties of the new slips bearing SLG;
- creation of a website dedicated to the project (www.sanitser.eu) where all the information regarding the project can be found;
- creation of a notice board to be placed in all partners' locations and design of flyers;
- first presentation of the project SANITSER, "Eco-sustainable production of ceramics and saving resources", held on December 4, 2013 in the ceramic district of Civita Castellana, with over 50 participants, including the industry's leading manufacturers of ceramic sanitary ware;
- contacts with manufacturers of ceramic sanitary ware interested in collaborating in the trial;
- contacts and meetings with possible end users of the final product.

