



Project Information Sheet

Waste synergy in the production of INnovative CERamic tiles (WINCER)

Programme area:	Materials recycling and recycling processes
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Website:	www.wincer-project.eu
Benefits (max. 150 characters incl. space):	Innovative ceramic tiles containing at least 70 wt% of recycled materials; resource and energy efficient production process of porcelain stoneware
Keywords:	Urban and industrial waste recycling, ceramic tiles
Sector:	Ceramic
Type of solution	Product, process
Duration:	01/01/2015 – 31/12/2017
Budget:	€ 1.489.312 (EU contribution: 50%)
Contract number:	ECO/13/630426

Summary

The project aims to develop innovative ceramic tiles containing more than 70 wt% of recycled materials from urban and industrial waste. The specific objectives are related to:

- contribution to sustainable waste management by recovery of the amount of soda lime glass (SLG) cullet waste that today is not re-introduced in glassware (about 30% of the total glass waste);
- reduction of the use of natural resources thanks to: the use of SLG, coming from urban collection, and the reuse of green scrap tiles, generated during the industrial process;
- improvement of the environmental performances of the ceramic tiles sector by reducing CO₂ emissions, energy consumption and methane use.

The combination of these different waste with natural clays enables the production of innovative ceramic tiles with similar or improved mechanical properties respect to the traditional ones. The productive cycle is similar apart two main innovation aspects concerning the body mix preparation (more than 70wt% of recycled waste in substitution of natural raw materials with the possibility to define 100% waste-based innovative body mixes) and the firing cycle (the maximum sintering temperature is reduced).

Benefits

The main forecast Environmental benefits include:

- Reduction of Green house gas emissions
- Reduction of energy consumption in the milling process
- Saving of Natural resources
- Contribution to sustainable waste management in terms of the recovery of the amount of glass cullet waste
- Reuse of industrial waste (green scrap tiles).

Expected and/or achieved results

- Recycling of waste and saving of natural resources, reduction of energy consumption, reduction of GHG emissions.
- Innovative structural ceramics produced with more than 70 wt% of recycled materials in ceramic tiles and obtained with similar or improved mechanical properties respect to state of the art products.



- Contribution to the improvement of the European ceramic industry through the acquisition of the world leadership in waste-based ceramic materials, the widening of the ceramic products spectrum by including more sustainable ones in substitution to other materials, and the reduction of energy consumption of the milling and firing processes.

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