Waste synergy in the production of INnovative CERamic tiles

WINCER

The project aims to develop innovative ceramic tiles containing more than 70 wt% of recycled materials from urban and industrial wastes. 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 wastes 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 wastes 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
- 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).

Results

- Recycling of waste and saving of natural resources, reduction of energy consumption, reduction of GHG emissions.

- Achieved results go far beyond the initial target of 70%, reaching 85% of recycled material. This industrial product obtained the UNI Keymark.

- 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.
Partners and coordinator

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Budget

Overall budget: 1.489.312,00 € (EU contribution: 50,00 %)

Key documents

- Project Information Sheet [5]
  PDF 42.11 KB

In brief

Sector: Recycling
Duration: 01/01/2015 to 31/12/2017
Contract number: ECO/13/630426/WINCER
Website: http://www.wincer-project.eu/

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