**Project Information Sheet**

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

<table>
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<th>Programme area:</th>
<th>Materials recycling and recycling processes</th>
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| Partners:       | MARAZZI Group, Italy  
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| Website:        | www.wincer-project.eu |
| Benefits:       | Innovative ceramic tiles containing about 70 wt% of recycled materials; resource and energy efficient production process of porcelain stoneware |
| Keywords:       | Urban and industrial wastes 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 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 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**

Achieved results go far beyond the initial objective of 70%, reaching 85% of recycled materials (urban and industrial wastes). This product was produced at industrial level in several sizes (15x15 cm, 30x60 cm) both glazed and unglazed. The glazed series (30x60 cm) already obtained the UNI Keymark.
This is an important milestone enabling the European ceramic industry to acquire the world leadership in waste-based ceramic materials and widening the ceramic product spectrum by including more sustainable ones in substitution to other materials. Moreover improvements of the environmental performances of the ceramic tile sector will be achieved through:

- Recycling of waste and saving of natural resources
- Reduction of energy consumption
- Reduction of GHG emissions

The information sheet will be published in the Eco-Innovation website. The EASME reserves the right to edit the information sheet for content and length.