



FOUNDRYTILE



VALORIZATION OF IRON FOUNDRY SANDS AND DUST IN CERAMIC TILE PRODUCTION PROCESS

Project cofinanced by the LIFE program of the European Union:



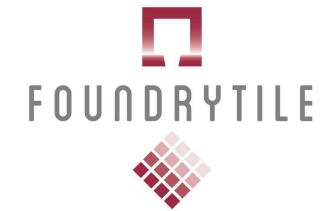
LIFE14 ENV/ES/000252

LIFE Environment and Resource Efficiency

Duration: 2015/09/03 – 2018/08/31



LIFE FOUNDRYTILE



PROJECT LOCATION: Spain-All regions

BUDGET INFO:

Total amount: 1,205,363 €

% EC Co-funding: 60 %



DURATION: Start: 03/09/15 - End: 31/08/18

PROJECT'S IMPLEMENTORS:

Coordinating Beneficiary: Fundació CTM Centre Tecnològic

Ass. Ben.: Asociación de Fundidores del País Vasco y Navarra, Asociación de Investigación de las Industrias Cerámicas, Asociación Española de Fabricantes de Azulejos y Pavimentos Cerámicos, EUROATOMIZADO, S.A.



THE PROBLEM

- Environmental problem: in current management, dusts and sands discarded in the foundry industry suppose a high consumption of raw materials. About 5.1×10^6 tones of sands and fine fraction were generated in Europe in 2013.
- Most of the cast products go to landfill, despite the existence of valorization alternatives.



OBJECTIVES & SCOPE:



To demonstrate the valorization of all iron foundry sands and dust in the ceramic tile production process.

INNOVATIVE CHARACTER:

- Utilization of green and chemically bonded foundry dust and sand in tile production replacing:
 - Natural raw materials
 - Clays (for red firing ceramic tiles)
 - Sands (for white firing ceramic tiles)

With a substitution degree of 5%, the tile production can absorb all the by-product generated in Spain and 75% at European level.



OBJECTIVES & SCOPE :



The new application will have three main benefits:

- Preservation of natural resources*
- Increase foundry waste valorization*
- Environmental footprint reduction*

TECHNICAL

- Generate a matrix of foundry byproducts applications in ceramic tile products
- Evaluate at pre and industrial scale the technical viability of the applications
- Environmental and economic viability assessment of applications and their correspondence with social impact
- Evaluation of foundry byproducts pre-treatment to increase their valorization
- Human health risk assessment based on industrial tests
- Characterization of foundry byproducts from different source points



OBJECTIVES & SCOPE:



The new application will have three main benefits:

- Preservation of natural resources*
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- Environmental footprint reduction*

DISSEMINATION

- Incorporate the project results in BREF documents for both foundry and ceramic sectors (SF and CER)
- To disseminate the obtained results and transfer the knowledge acquired
- To foster social awareness related to the environmental problem targeted



PROJECT STRUCTURE:



Actions	Description
A.1	Foundry and ceramic requirements characteristics compilation.
B.1	Selection and characterization of casting products.
B.2	Evaluation of pre-treatments for the conditioning of foundry byproducts.
B.3	Ceramic tiles with foundry products production tests at pre-industrial scale.
B.4	Trials on an industrial scale.
C	Monitoring of the impact of the project actions.
D	Public awareness and dissemination of results.
E	Project management and monitoring of the Project process.



EXPECTED RESULTS

- ✓ Industrial-scale demonstration of most promising applications using foundry dusts and sands.
- ✓ Improvement of byproducts characteristics as a result of different pre-treatments.
- ✓ Validation of reuse alternatives at pre-industrial scale.
- ✓ Foundry waste characterization data.
- ✓ Participation of ceramic companies and foundries along the project.
- ✓ Dissemination of the importance of byproducts reuse and promotion of its acceptance by society.
- ✓ Dissemination of project experience to different regions and countries in Europe.

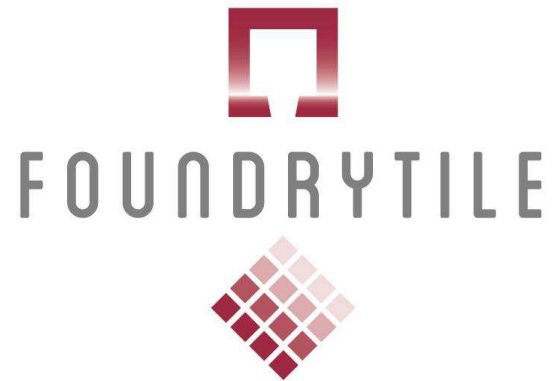


POLICY IMPLICATION



- Contribution to the implementation of Waste Framework Directive 2008/98/EC promoting waste reuse following the objectives of the Roadmap for a Resource-Efficient Europe
- In line with the Strategy for smart, sustainable and inclusive growth. COM(2010) 2020 final "Sustainable growth – promoting a more resource efficient, greener and more competitive economy"
- Impact reduction of raw materials extraction in quarries (Directive 2006/21/EC)
- Minimization of the disposal of foundry waste by landfill (Directive 1999/31/EC)
- Contribution to the objectives of the EU related to follow the roadmap for the reduction of greenhouse gases emissions (GHG)
- Contribution to the protection for ecosystems and conservation of biodiversity in line with the European Parliament resolution of 20th April 2012, EU Biodiversity Strategy to 2020.
- Inclusion of project outputs in the revision of **BREF documents** for foundry and ceramic sectors





www.foundrytile.eu

