

ReDuCe- Use of disposable mask residues in composites with different formulations



Partners: CERIS/IST

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Summary description: The COVID-19 pandemic has significantly changed several socio-economic aspects such as people's lifestyle, economy, work, and education. Around the world, public policies adopted the mandatory use of face masks. The value of imports of face masks has grown exponentially in the European Union from €800 million in the first half of 2019 to €14 billion in the first half of 2020. The ReDuCe project aims to reduce microplastics and plastic pollution by incorporating the plastic materials from the face masks in different binders (cement, plaster, lime). This project will address this societal challenge by investing in the circular economy. Several objectives will be set: i) decontamination of the face masks; ii) measurement of the incorporation ratio of decontaminated mask residues in composites of different binders; ii) performance, durability, and ecotoxicological risks of the most promising formulations and; iii) assessment of environmental and economic sustainability in the production of these construction solutions.

CERIS participation: this study is framed within the thematic lines of CERIS related to Product Development in Civil Engineering Industries and Response to Natural and Societal Changes.

Output: the project will deliver several potential sustainable constructive solutions, environmentally safe and with good performance (mechanical and fire reaction).

Illustrations:



Studying the particle size (on the left) and water absorption (on the right) of mask waste

Indicators: 1 paper in the conference