

LIFE21-ENV-IT-LIFE GREEN COMPOSITE is co-funded by the EU LIFE Programme under GA 101074703

Duration: **36 months** Start: **August 2022** End: **July 2025** 





PLADOS TELMA KITCHEN EXPERIENCE



GREEN COMPJSITE

LIFE GREEN COMPOSITE revolutionizes the production of sinks and worktops with an eco-sustainable approach, using recycled raw materials. Thanks to the industrial symbiosis between Delta and Gees Recycling, we create cutting-edge circular solutions. Our innovative process starts from recovered resources and uses advanced grinding and formulation technologies, transforming recovered materials into new eco-sustainable design products.



## INDEX

- PROJECT OBJECTIVES 4
  - PROJECT BENEFITS 5
- THE CIRCULAR VALUE CHAIN 6
- APPLICATIONS OF GREEN GRANULATE 8
- APPLICATIONS OF GREEN COATING AND PANELS 9
  - GREEN SINKS FROM THE SOURCE 10
  - HOW A RINNOVA SINK IS CREATED 12
  - PERFORMANCE DOES NOT CHANGE 13
    - RINNOVA COLOR RANGE 15

## **PROJECT OBJECTIVES**

Across the EU, 1.5 million kitchen sinks made of composite materials are manufactured each year, with increasing consumer appreciation due to their special properties; 17% of the total production is waste: approximately 3,654 tonnes. This mineral waste, heavily contaminated with polymers, is disposed of for approximately 98% in landfill as special industrial waste.



The main goal of the project is the **development**, **by Delta**, **of the new Green Sinks – RINNOVA line**, **made with over 90% recycled materials**, thanks to the replacement of virgin raw materials with secondary materials.

The project also includes the full **recovery (100%) of production waste generated by the molding of Delta sinks** in composite material, through a grinding process that allows obtaining the by-product "Green Granulate".



A further milestone concerns the **production**, **by GEES**, **of Green Panels**, **obtained using Delta's Green Granulate and other recovered materials for the production of worktops**, street furniture and other products intended for different applications.

Finally, Delta is expected to develop a **Green acrylic Coating from recovered sources**, formulated to protect and enhance porous surfaces such as green panels or other materials that require resistance, protection and a shiny finish.



## **BENEFITS OF THE PROJECT**

Sinks manufactured with recycled raw materials confirm a better environmental profile than those manufactured with virgin raw materials. **The reduction of the "Global Warming Potential"** (GWP-total) expressed in terms of CO<sub>2</sub> equivalent amounts to approximately:



Another favorable indicator concerns the "Abiotic Fossil Resource Depletion Potential" (ADPF). With green sinks there is a reduction of approximately:



-67 %

The use of recycled raw materials compared to virgin ones also contributes to the reduction of other indicators such as:

Acidification: -72% Land use: -20% Water use: -66% Ecotoxicity: -51%

ECOLOXICILY: -51% The comparison between the use of 1kg of virgin guartz and 1kg

of green granulate highlights an average reduction in the Global Warming Potential (GWP), expressed in CO<sub>2</sub> equivalent of:

-85 %





## THE CIRCULAR VALUE CHAIN





The industrial symbiosis between Delta and Gees Recycling has created a circular value chain, where materials are recycled through advanced transformation processes. This innovative project has given rise to four new products:

- **1** Green sinks, marketed as "RINNOVA Line" Delta;
- 2 Green Granulate by-product Delta;
- Green Coating for porous surfaces Delta;
- **Green Panels** 96% recycled Gees Recycling.



Thanks to mineral fillers and MMA, both recycled and coming from external sources, Delta has formulated new GREEN dispersions:

- Acrylic resin together with recovered mineral filler for the production of Green Sinks "Rinnova" (1)
- Acrylic resin for the production of Green Panels by Gees Recycling (4)
- r-PMMA in liquid form, marketed as "Green Coating" (3)

NEW GREEN DISPERSIONS



In the image above you can see the conveyor belt that introduces the waste into the grinding plant.

In the images on the side you can see the reactor for the production of the green dispersion and the storage tank.

## **APPLICATIONS OF GREEN GRANULATE**

Green Granulate is the result of waste milling and can have different colors. Through a mechanical separation process, three different granulometries are obtained, so as to expand the range of possible applications.







When combined with other materials, **the granulates can be used to produce eco-friendly blocks or bricks for sustainable construction**. These blocks and bricks benefit from the insulating properties of quartz and resin and offer good weather resistance, as well as thermal and acoustic insulation. Additionally, the presence of cured acrylic resin can make the blocks more resistant to humidity.



Paving for public areas: use for **decorative paving in parks, sidewalks or squares, due to its durability and non-slip properties.** The possibility of coloring the granulate makes it possible to create decorative pavements that match the aesthetics of the location. The texture of the granulate contributes to an anti-slip surface, improving safety for pedestrians, especially in wet conditions. The combination of quartz and resin makes the material resistant to weathering, wear, and corrosion.

## **APPLICATIONS OF GREEN COATING AND PANELS**

Protective Coatings: Green Coating can be used to **protect surfaces exposed to the elements**, such as roofs, terraces or street furniture, to protect them from the effects of time and daily wear. Not only does it offer **long-lasting protection against humidity, UV rays and scratches, but it can also be used to renew the appearance of existing structures**, restoring vitality to faded or damaged materials. The use of Green Coating contributes to sustainability by **reducing the need for frequent repairs and extending the useful life of treated surfaces**.

Green Panels: made by our partner GEES Recycling, these panels can be used for a variety of applications, including **kitchen and non-kitchen worktops, shower trays, outdoor tiles and street furniture**. The worktops, suitable for both indoor and outdoor use, combine durability and aesthetics, making them perfect for kitchens and entertainment spaces. The outdoor tiles offer weather resistance and a non-slip surface, ideal for terraces and walkways. Street furniture, such as tables or decorative structures, benefit from the panels' strength and versatility, helping to improve the functionality and appearance of public areas.

These examples are just the beginning of the potential possibilities offered by Green granulate, coating and panels. With further research and innovation, even more creative uses could emerge. The real benefit of this approach lies in giving **new life to waste**, **reducing the extraction of virgin materials and promoting more responsible management of resources**. This commitment protects the environment and paves the way for a sustainable, circular future.







# GREEN SINKS FROM THE SOURCE



X

## **GREEN SINKS FROM THE SOURCE**



#### Transforming waste into resources to be reintroduced into the production process

The circular economy is a production model that is based on the reuse and recycling of existing raw materials to generate new value, thus contributing to both reducing waste and extending the life cycle of the product. The RINNOVA sink follows the circular recycle-produce-use model starting from recovered raw materials equal to more than 90%. Being green at the origin means transforming something that is already available into a resource, giving value to external and internal production waste and not affecting non-renewable natural resources.

## HOW A "RINNOVA" SINK IS BORN



#### Renewed raw materials instead of virgin raw materials

Our goal was to maximize the use of organic (MMA+PMMA) and inorganic (mineral fillers) raw materials otherwise destined for landfill, so as not to resort to virgin or non-renewable raw materials. Through a process of regeneration of recovered raw materials, we obtained a green compound at the origin that guarantees the same chemical, physical, mechanical and aesthetic characteristics of the traditional compound of Plados Telma sinks. The quality of the final product is identical, the difference is made by the origin of the raw material, a difference capable of being added value.

## PERFORMANCE DOESN'T CHANGE



#### Green as a qualitative advantage

The great challenge of the sustainable model is to be able to produce goods that have an immediate green benefit without having to give up the **high standards of functional requirements**\*. In "rinnova" sinks, the sustainable approach is an integral part of their design, their performance and never ignores the quality of the product but is a qualitative advantage: being green at the origin. Renova sinks are made of more than 90% renewable components.



## "RINNOVA" COLOR RANGE





15





### PLADOS TELMA

Via Grazia Deledda, 3 - 62010 Montecassiano (MC) - Italy Tel. +39 0733 290592 - Fax +39 0733 298070 info@pladostelma.com - www.pladostelma.com





Via Monte Colombera n. 22 - 33081 Aviano (PN) - Italy Tel. +39 0434 654183 geesrecycling@gmail.com - www.geesrecycling.com



fiberglassrecycling



Life Green Composite Video



www.pladostelma.com/life-green-composite



LIFE21-ENV-IT-LIFE GREEN COMPOSITE is co-funded by the EU LIFE Programme under GA 101074703

