

Regional Operative Program 2014-2020**Target: Investments in favour of growth and employment (co-funded with FESR)****Priority Objective: Strengthening research, development and innovation**

Action I.1.b.1.2 – Aid to economic valorization of innovation by means of experimentation and adoption of innovative solutions in processes, products, and organizational setups, as well as through funding the industrialization of research results.

Call of Application “Tech Fast Lombardia”

Title of Project: 100% Recyclable Mussel Floats

Beneficiary: Floatex S.r.l.

Objective: development of 100% recyclable mussel floats without using internal inner filling.

Outcome pursued: realization of floaters without expanded polyurethane or polystyrol, able to be used up to 10 meters of operative depth.

Effects: reduction of environmental impacts and improvement of sustainability levels of floaters.

Floatex is one of the most important companies for floating marine products, both coastal and offshore, operating within national and international markets. Since 1976 Floatex has been one of the pioneers in manufacturing plastic products by using rotational molding, employing advanced technologies specifically aimed at installation in offshore facilities. The experience gained in rotational molding allows Floatex to produce premium-quality products for a variety of applications.

Floatex can produce different types of buoys in various shapes and sizes depending on their scope of work: if used exclusively at surface level, the floats are generally empty; while if used for submarine purposes, they are typically filled with expanded polyurethane or syntactic resin so to withstand the hydrostatic pressure.

The project has the purpose to develop new mussel floats that can combine technical performance, durability and environmental sustainability. The main innovation of the project consists in the production of deep-water floats without any internal filling, thus eliminating the use of expanded polyurethane so to deliver a completely-recyclable plastic solution in accordance with environmental sustainability aspects for the marine environment.

Additional goals within environmental sustainability best practices include the ongoing research of non-toxic materials that can comply with applicable regulations, including the REACH Regulation. Special attention is also given to the use of metal-free dyes, considering that Floatex products are meant to be used in the marine environment.

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Modern mussel farming extensively uses floating row or “long-line” systems mostly in open-sea applications. These plants are usually located in coastal areas with depths ranging from 10 to 30 meters and the perimeter is marked by buoys. The rows are submerged at a depth of about 3 to 5 meters from the water surface to reduce the movement caused by waves.

The installations are anchored to the seabed by implementing anchoring / mooring systems made of concrete, stone, or metal blocks, commonly named “sinkers”. Polypropylene or polyester ropes, – named beams – which length is variable depending on the depth, are linked to sinkers. Farming systems are developed and installed onto such ropes.

In this context, Floatex has developed the project based on rotational molding technology. This technique allows the creation of seamless hollow plastic items by putting the raw material into a mold that is heated and rotated. The material – when in contact with heat – changes its physical state and spreads evenly over the inner walls of the mold, resulting in a hollow object. At the end of the production cycle, there is a cooling phase and, if needed, additional processes like drilling, deburring, and finishing.

The initial goal of the project was to develop and produce new mussel floats that could be used at surface or submarine levels, by using fully recyclable materials and reducing the use of non-recyclable components. The output achieved is the creation of hollow floats, free from expanded polyurethane or polystyrene, suitable for use up to 10 meters of operative depth. The product meets the requirement to introduce more eco-friendly solutions in the mussel farming sector, while still maintaining proper technical and functional characteristics compatible with the marine environment.

For major details, please contact us!

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