



New, more resistant materials for port fenders with up to 50% recycled content

The DURPROMAT Project, funded by the Valencian Innovation Agency, is developing new materials to make port fenders that are more resistant to impact, UV radiation and the action of marine organisms.

These new materials will be fully recyclable and made with up to 50% recycled material. They may also be used to make signage products, engines, footbridges and fish farms.

Valencia (2 March 2021). Ship-to-berth fenders, currently manufactured with 100% virgin high-density polyethylene (HDPE), are subject to a constant onslaught of impacts, marine microorganisms and UV radiation, which trigger their deterioration and make replacement necessary.

To obtain more resistant and environmentally sustainable marine fenders, AIMPLAS, the Plastics Technology Centre, in conjunction with the Microbiology and Ecology Department of the Universitat de València, is participating in the DURPROMAT project, led by the industrial company DURPLASTICS. The project has received funding from the Valencian Innovation Agency (AVI). Its results will be implemented at industrial scale and may be applied to other maritime industry and boating products.

In particular, the antifouling properties of HDPE will be improved through the use of environmentally friendly additives that comply with European biocide regulations. UV light and heat are the primary causes of fenders' loss of properties. Therefore, to increase the new material's UV resistance and thermal degradation, work is being done to ensure that the material does not degrade by more than 30% and to improve its impact resistance by at least 20%. The new materials will also be 100% recyclable, so the project is totally in line with the circular economy model and the United Nations' Strategic Development Goals (SDGs), especially SDG 9 on Industry, Innovation and Infrastructure, SDG 12 on Responsible Consumption and Production, SDG 13 on Climate Action, and SDG 14 on Life Below Water.

The project results will be implemented at industrial scale and may be applied to the manufacture of other plastic products in contact with the marine environment, such as



buoys and buoyancy systems, markers, engines, infrastructure, navigation aids, footbridges and fish farms. The new material may also be used to replace metal materials used to manufacture products in contact with corrosive environments that can generate polluting substances as they deteriorate and rust.

About AIMPLAS

At AIMPLAS, we help companies apply circular economy criteria to their business models and turn the legislative changes that affect the plastics industry into opportunities to improve company efficiency, reduce environmental impact and increase profitability. AIMPLAS also does research in areas such as recycling, biodegradable materials and products, and the use of biomass and CO₂ with the aim of developing innovative solutions that help solve current environmental challenges.



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