

“Paint-it” project: eco-friendly anti-fouling marine paints.

From the LIFE PAINT-IT Project (LIFE 15 ENV/IT/000417), a novel manufacturing process based on a pre-industrial/prototype scale, capable of producing innovative eco-friendly and high-quality safe anti-fouling (AF) paints for naval applications, was implemented and now towards the final validation step. The high sustainability of the paints will ensure a complete reduction of biocides harmful for the aquatic environment and continuously released from the traditional AF paints especially in form of copper compounds. The preliminary scale-up phase involved the optimization of the formulations for the final application on two medium-sized hulls. In particular, the characterization on a laboratory scale of the anti-fouling capacity, the mechanical evaluation as well as adhesion to different hull substrates, the control of the rheological properties and aesthetic finishing mainly for spray/airless application technologies, have been previously completed by the coordinating partner, University of Rome Tor Vergata. In addition, a first evaluation of the ecotoxicity was carried out by the partner University of Rome Niccolò Cusano on the optimized paints with promising results. Then, three different optimized formulations were selected for the production, both in non-continuous and continuous mode, of full-scale 150 Kg batches at the partner company site (Cericol, Colorobbia Consulting - Vinci) where the pilot plant prototype is installed and operative.

Fig. 1 Continuous production of batches of formulation F gloss, available in short for the application on hull.



Fig. 2 Pictures of the application steps on industrial panels.



The novel coatings obtained from the industrial process have been validated respect to their chemical-physical and mechanical properties; while LCA assessment on real production data is under completion. Moreover, the final validation step of the anti-fouling activity in close-to-real conditions and

the mechanical/aesthetical properties and toxicity evaluation on extended real substrates are in progress and will continue during the next spring season. Finally, the selected paints will be ready in short for the application on two testing prototype vessels by the involved partner company (Azimut-Benetti - Sovigliana), in order to assess the AF activity and fuel consumption for a standard navigation period at sea during the incoming summer season of 2019.

Project details

- Project co-funded by the European Commission within the Life + Programme (2014-2020) LIFE-PAINT-IT ENV/IT/000417 (% EU Co-funding: 22.55%).
- BUDGET total amount: 5.712.506 EUR.