University of Rijeka,
Faculty of Maritime studies

PROJECT ACRONYM AND TITLE: Failure analysis of additively manufactured steel in marine environment

FUNDING PROGRAMME: University of Rijeka

PERSON RESPONSIBLE: Goran Vukelić

FINANCIAL DATA

Project total cost	Overall funding assigned to PFRI
6.530,44 EUR	6.530,44 EUR

SUMMARY

Traditional spare parts supply chain in the maritime and offshore industries implies that the needed spare part is shipped from a central distribution point to the ship's next port of call or offshore facility. This process can become inefficient in terms of time, costs, and transportation environmental impact in cases when it is hard to harmonize the delivery of spare parts with ship's route or offshore location. Additive manufacturing (AM) technology already proved useful in various industry sectors for spare parts logistics and is slowly making an enter into the maritime and offshore industry. However, to allow for greater acceptance, AM materials need to be tested in harsh environmental conditions that marine structures are intended to operate in. This includes corrosion testing of AM materials and comparison with traditionally manufactured materials.

This project is intended to test the influence of corrosive marine environment onto the mechanical properties of traditionally and additively manufactured stainless steel AISI 316L, that has a wide application in maritime and offshore industries. Specimens made of traditionally and additively manufactured steel are going to be placed in real marine environment for a period of 1, 3 and 6 months. After the exposure to corrosive environment, mechanical properties of material are going to be experimentally tested. Comparison will be made between traditionally and additively manufactured steel, along with a rate of degradation due to the time of exposure. Based on the results, initial suggestions of acceptability of AM 316L steel in the marine environment will be drawn and directions for future, more comprehensive research given.

Start date	End date
29.04.2024.	29.04.2025.

PARTNERSHIP

Br.	Partner organization	Country	Role
1.	Faculty of Maritime Studies Rijeka	Croatia	Lead partner
2.	Faculty of Maritime Studies Kotor	Montenegro	Partner
3.	Antwerp Maritime Academy	Belgium	Partner
4.	Shipyard 3. Maj Rijeka	Croatia	Partner

5.	Shipyard Viktor Lenac Rijeka	Croatia	Partner

WEBSITE: -

ADDITIONAL INFO:

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