

COMPARATIVE ANALYSIS OF SURFACE PREPARATION TECHNIQUES IN THE MARITIME INDUSTRY FOR CORROSION PROTECTION

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ABSTRACT

This study highlights the importance of abrasive blasting in the maritime industry for the durability and safety of marine structures. Abrasive blasting is employed to clean and prepare metal surfaces by removing rust, impurities, and old coatings, facilitating optimal adhesion of anti-corrosive coatings that protect against saline corrosion. Eco-friendly abrasives, such as garnet, represent a sustainable choice, reducing health risks for workers and preventing soil and water contamination. Additionally, classical abrasive blasting is compared with the use of rotary abrasive discs, which allow for more precise cleaning control while minimizing dust and noise.

The analytical methods employed to evaluate the efficiency of the surface preparation process include adhesion testing, roughness measurement, contact angle measurement, and optical microscopy. These techniques enable a detailed assessment of the characteristics of treated surfaces.

KEYWORDS: corrosion, maritime industry, adhesion, roughness, SEM, optical microscopy

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