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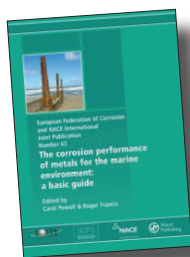
The corrosion performance of metals for the marine environment: a basic guide.

C. Powell & R. Francis

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Il libro "The corrosion performance of metals for the marine environment: a basic guide" nasce dalla collaborazione di tre prestigiose organizzazioni (Nace International, European Federation of Corrosion e The Institute of Materials, Minerals & Mining) ed è rivolto ad ingegneri che a diversi livelli sono coinvolti nella prevenzione e nel controllo della corrosione ed a tutti coloro che desiderino semplicemente aggiornare le proprie conoscenze in materia di corrosione dei metalli in ambiente marino. Questa guida, essenziale e di facile comprensione, è stata fortemente voluta dai membri del gruppo di lavoro WP9 (Marine Corrosion, EFC) e dalla commissione STG44 (Marine Corrosion, NACE International). L'edizione 2012 offre una semplice ma esaustiva panoramica delle problematiche d'interazione

dei materiali con l'ambiente, degli aspetti fondamentali dei processi di corrosione e dei metodi usati per la loro prevenzione. Acciai al carbonio, acciai inossidabili, leghe di rame, leghe di nichel, leghe di alluminio e leghe di titanio sono le principali sezioni in cui il manuale è suddiviso. Ogni sezione è dedicata alla descrizione delle applicazioni, delle composizioni chimiche, delle proprietà meccaniche e del comportamento alla corrosione delle diverse leghe metalliche prese in considerazione. La sezione conclusiva fornisce un'introduzione generale alla corrosione galvanica ed ha il compito di illustrare il differente comportamento in servizio delle principali classi di materiali metallici e le strategie più efficaci per la prevenzione ed il contenimento della corrosione galvanica nelle strutture metalliche esposte all'atmosfera marina.

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Scientists and engineers have been studying and recording marine corrosion, its effects and the solutions for over 60 years. Many of these experiences have been written down, but not always in accessible places. Marine corrosion failures tend to recur in cycles as one group of engineers ages and retires and a younger generation takes over. Clearly, not all the experiences of senior engineers have been passed on. This has become more acute in the last ten years or so with early retirements and reduced manning, leaving even less time to educate new engineers.

This book was envisioned and created as a way of encouraging

engineers new to the marine environment, and those just wanting to update their knowledge, to take advantage of the many years of accumulated experience with corrosion of metals in marine environments in a quick and concise manner. It is designed to encourage regular reference, avoiding complicated technicalities and has been instigated and supported by many of the members of WP9 (Marine Corrosion) of the EFC (European Federation of Corrosion) and STG44 (Marine Corrosion) of NACE International. Steels, stainless steels, as well as alloys of copper, nickel, aluminium and titanium are covered within each section providing a wealth of information. Applications, commonly used alloy compositions, mechanical properties and the types of corrosion that the alloy groups are susceptible to are all described. It is intended that, armed with this knowledge, optimum service performance and corrosion resistance can be achieved from each alloy system. Few marine systems or structures are made of one type of alloy and so the concluding section provides an explanation of galvanic corrosion in seawater and how each alloy group behaves when coupled to others. It also discusses common solutions to avoid galvanic corrosion.

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