

Title (en)

A method of durably and lastingly protect a surface in contact with water from biological fouling

Title (de)

Verfahren zum Dauerschutz von im Kontakt mit Wasser stehenden Oberflächen gegen biologische Fäule

Title (fr)

Méthode pour protéger durablement de l'encrassement biologique une structure plongée dans l'eau

Publication

EP 1084947 A1 20010321 (EN)

Application

EP 00440142 A 20000516

Priority

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- EP 99440252 A 19990917

Abstract (en)

An environmental friendly, long-lasting, practical, effective and economic method of rendering a surface antifouling properties is achieved by attaching a very thin copper-containing layer, sheet or foil directly to said surface so as to form an electrically conductive layer. These copper-containing sheets are, according to the invention, protected from oxidation by intermittently applying a cathodic protection. First, copper has been believed to prevent biological growth as a result of the leaching of copper-ions. All previous methods, based on copper, have therefore been designed to release copper-ions, which pollutes the water and causes harm to the biological life. It was thus highly surprising that, by the application of intermittent cathodic protection to the copper-containing sheets, a method which essentially and totally prevents all release of copper to the aquatic environment, the antifouling properties were still maintained. As no corrosion occurs very thin layers can be used adding further advantages to the method such as ease of application, weight and cost. Secondly, it was found, surprisingly and contrary to common belief, that such very thin layers in the form of copper-containing sheets, because of their low weight, flexibility and feeble thickness, could be made to follow any shape so closely, that many commercially available water-resistant adhesives are sufficient to exclude water from penetrating in-between the surface and the copper containing sheet so that said sheets are basically held in place by the hydraulic pressure exerted on the sheet, once the structure is submerged. The new method avoids all the disadvantages of the more common use of toxic paints, as the surface will have a lower degree of roughness, be smear-free, offers long-term protection, eliminates the environmental hazards and further protects the surface from other effects of its contact with water.

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Citation (applicant)

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