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Polskie Stowarzyszenie Korozyjne

Annual Conference of the Polish Corrosion Society
MODERN ANTICORROSIVE TECHNOLOGIES
MOLO, 25-27 February 2008

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QUALITY AND QUANTITY ASSESSMENT HIDDEN CORROSION OF RIVETED LAP'S CONNECTIONS IN ASPECT OF EXTENDING LIFE SERVICE'S AIRCRAFT USED IN POLISH ARMY

Keywords: pillowing, service life, aeroplane, aircraft,

Abstract

The effect of pillowing is caused by corrosion expansion in riveted multilayer lap joints of duralumin sheets. Corrosion products are of bigger volume than a parent substance and they can not get out of the joint. Thus, an increase in product volume causes joint swelling. From the outside, this deformation is seen as a sheet corrugation. Corrosion has a negative influence on the riveted joint, which is evidenced by reduction of skin sheet gauge and the occurrence of additional load between rivets and the sheet, which is caused by corrosion products pressure. The DAIS System (D SIGHT Aircraft Inspection System for Corrosion Inspection) enables the pillowing size to be optically measured because it provides information about the pillowing size by the indirect measurement of the deformation amplitude.

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PRACTICE OF IKOROL APPLICATION

Keywords: corrosion, surface preparation, protective coatings

Abstract

The selection of results of IKOROL application on corroded steel or zinc surface are presented. The possibility of coatings applying on not quite clean surface covered with the thin layer of IKOROL was stated. The inhibitor can be applied as the alcoholic solution by means of typical painting technique. The layer of IKOROL provides with the high adhesion of typical paint coatings to both corroded steel or zinc surface with loose rust removed and to the old epoxies coatings cleaned with a steel wire brush. The very good field performance of coatings were observed after three years since executed. IKOROL was used for protection of corroded crevices of steel constructions and for preparation of hand cleaned steel and galvanized steel surface for painting.

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ANTICORROSIVE PROTECTION IN INDUSTRIAL ENVIRONMENTS

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Keywords: corrosion, polyurethane, anticorrosive protection, coats, industrial infrastructure, containers, steel,concrete hydroizolation, constructions, airless spraying

Abstract

Spraying anticorrosive coats made by Savepol Poliuretany are used in case when very high resistance to corrosion in various industrial environments is needed. This product is a very interesting solution of many problems connected with indystrial area protection and its application allowed to achieve number of benefits. Anticorrosive coats applied on the external surfaces of various steel and concrete underground containers (including LPG containers) and as an internal and external protection of pipelines (including drinking water pipelines). Application speed and a short stabilizing time of coats allows to keep a minimum time of carrying out indispensable repairs or breakdown repairs. A wide range of used materials enables application of coats with various technical parameters.

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PLASMIC TECHNIC IN THE PROCESSING OF SURFACE OF MATERIALS IN THE FIGHT WITH CORROSION

Keywords: corrosion, chemical vapour deposition, layer

Abstract

Demand on new materials in many domains of human activity constantly increases and includes all kinds of materials known today. Their properties are increasingly modified by surface treatment techniques. Thanks to that, it is possible to choose the appropriate chemical composition, structure and physico-chemical surface condition of many materials. The purpose of these operations is to assure desirable properties of materials and their practical functions, e.g. biological traits. The applied method of production influences the layer's structure, surface layer morphology, adhesion, internal stresses in the layers, i.e. their performance.

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ALLERGIC ACTIVITY OF METALS

Keywords: heavy metals, essential elements, allergy, contact dermatitis, nickel, chromium

Abstract

The role of selected heavy metals as essential elements for humans life was described. It was pointed out, that the biochemical activity of metals depends significantly on their ionic forms. The same metals induce adverse health responses when present in excessive concentrations or in “unneeded” ionic forms. The allergy risk under conditions of skin contact with heavy metals compounds used at corrosion control works was presented. The most frequent allergies to metals: nickel, chromium and cobalt were described. Occupational and non-occupational exposures, that can result in sensitisations to these metals were indicated. Finally, allergic actions of organic compounds used in corrosion control works were mentioned.

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THE PRACTICE OF ACOUSTIC BAFFLES BUILDING IN POLAND SELECTION OF CORROSION PROTECTION PROBLEMS

Keywords: corrosion, acoustic baffles building, law principles

Abstract

The lecture presents law principles for acoustic baffles realization in Poland and problems connected with the lack of regulations of baffles corrosion protection. The acoustic baffles currently in production have a number of faulty design constructional solutions, which are the reason for corrosion damages, limitation of baffles durability and high cost of exploitation. Basing on BACC S.A. experience the new material solutions are suggested. There is also the need of requirements of acoustic baffles corrosion protection pointed out.

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APPLICATION OF COMMERCIAL INDUSTRIES MEMBRANES TO ANTICORROSION PROTECTION CONCRETE AND STEEL

Keywords: anticorrosion protection, moisture protection, elastomeric membranes, fabric reinforced membranes, modified polyurethanes, scrim coatings, air-assisted airless spray.

Summary

This paper discusses elastomeric coatings CIM and their application to anticorrosion protection of concrete, asphalt and steel. These are 2-component, modified polyurethane coatings applied as a liquid. They are characterized by very good mechanical properties. In addition, they have high resistance to most known and popular chemical factors. They have UV radiation resistance and some types of these coatings have specified fire resistance. They have wide range of application to moisture and anticorrosion protection of concrete, asphalt, steel and other materials.

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CERTIFICATED CATHODIC PROTECTION PERSONNEL - REQUIRED COMPETENCE ACCORDING TO PN-EN 15257

Keywords: cathodic protection, personnel certification

Abstract

At the end of the year 2006 the new European standard specifying levels of competence and principles of certification cathodic protection personnel was established. This way in the one hand cathodic protection technology was distinguished from other anticorrosion techniques, for which, this kind of European standardization requirements do not exist, and in the other hand the technical circle has shown how big responsibility lies in hands of this faculty engineers. Results of a cathodic protection are not usually seen with a bare eye and that is why the duty of measuring and judging the rate of damage caused by corrosion is handed to specialists whose qualifications should be certified. In this paper some elements of the norm and notes about introducing it in Poland are discussed. Difficulties connected with Polish law are also pointed out and ready-to-use solutions proposed.

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CORROSION PROTECTION WITH POWDER COATINGS

Keywords: corrosion, powder coatings, EN-ISO 12944

Abstract:
Short history of powder coatings. Powder coatings in corrosion protection - tested according to ISO 12944 – corrosion painting systems due to powder systems. Presentation of powder system test results. Benefits of using powder coatings in corrosion protection.

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NOISE BARRIERS – RELATIVITY BETWEEN INSTALLATION ENVIRONMENT& DURABILITY

Keywords: noise barriers, durability, corrosion, coatings, PVDF, anodic oxide, aluminum, risks

Abstract: Durability of noise barriers is determined by row materials and potential risk over the place of application. Investors should be obliged to make corrections according to mistakes made during designing and installation. Analyse of all risk factors concerning application of noise barriers could help in taking decision during process of planning and installation.