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THE GUARANTEE CONTRACT – THE MEDIAN OF PROPOSALS. CIVIL LAW AND THE PROPOSALS OF GUARANTEE CONTRACTS OF ANTICORROSION PAINT SUPPLIERS

Keywords: contract, anticorrosion protection, guarantee, responsibility, law

Abstract

The basic legal aspects and the structure of guarantee contracts was presented. Most frequent issues associated with such contracts were described.

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APPRAISED DRY FILM THICKNESS (ADFT) – A NEW CONCEPT FOR THE ASSESSMENT OF COATING THICKNESS ON A STRUCTURE

Keywords: corrosion, film thickness, protective coating, structure

Abstract

The paper describes a new method for DFT assessment on the structure, which can substitute algorithms described in the standard ISO 19840 and SSPC-PA2. In contrary to the two formally mentioned methods, this attempt focused on calculating the value of Appraised Dry Film Thickness is statistically well established and provides additional opportunities for durability prediction of corrosion protection and estimate the real value of work recognized as unsuccessful. Several examples of the implementation of the ADFT methodology has been presented.

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SAFETY DURING ANTICORROSION WORK IN THE STEEL MANUFACTURE

Keywords: safety, cleaning, metalization, painting

Abstract

Cleaning and coating involves a number of hazardous processes which forces modernization of steel manufacture in this area. Upgrades involve supporting facilities with the modern equipement for construction cleaning and coating, which together with a proper maintenance of security rules and enviromental protection assure competetive quality of the anticorrosion work.

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POWER SURGE – MAIN SOURCE OF FAULT IN ANTICORROSION SYSTEM

Keywords: corrosion, monitoring, fault management

Abstract

With the development of electronics traditional DC power sources, based on transformer and rectifiers, are increasingly being replaced by devices based on thyristor controlled rectifiers and switching mode adjustable power supplies. The natural order of technological development of these devices was to provide them with their own measurement and telemetry systems. These changes made it possible to significantly reduce the operating costs incurred by the Pipeline Operator while increasing the effectiveness of the cathodic protection system. Cathodic protection systems as one of the elements of corrosion protection are systems whose effectiveness depends on their continuity. Based on operational experience statistical analysis of events was presented together with possible actions that restrict their development.

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COMMISSIONING OF BRIDGES AFTER COMPLETION OF WORK AND DURING THE WARRANTY PERIOD

Keywords: commissioning, quality assurance plan, as-built documentation, warranty

Abstract

This paper presents the range of actions carried out during the commissioning of bridges (after completion of the construction works), during inspections performed within warranty period and commissioning after the warranty period. The paper describes the rights of Investor and the liabilities of Contractor arising from the performance guaranty and the procedure in case of defects found during the commissioning or within the warranty period. Typical damages caused by improperly performed works are also shown.

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INFLUENCE RAIL SYSTEM CONDUCTANCE DC ELECTRIC TRACTION ON THE UNDERGROUND METAL STRUCTURES

Keywords: rail system conductance DC electric traction, tramway system DC, underground metal structures, stray current, corrosion

Abstract

The DC electric tration Has none of the Power supply and back. The conductance catenary traction power supply system owner takes care of traction for safety reasons and electric shock people because of losses in the system. Unfortunately, the network conductance back is not as important for the owner of the traction system. The study pointed out in the DC system to increase power supply you to reduce leakage currents in the operation of the same stock. For this reason, the standard EN 50163 at the turn of the twentieth and twenty-first century, is removed from the DC traction system rated voltage of 600 V.

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SPECIFIC PROTECTION OF PIPELINE APPLIED WITH HIGHT TIGHTNESS COATING AGAINST STRAY CURRENTS D.C.

Keywords: pipeline, coating, cathodic protection, casing, stray current

Abstract

Stray d.c. current influence on pipe-to-soil potential in pipelines with high quality insulating coatings are specific. When measuring "on" potentials (Eon) along the pipeline, it can be concluded that the influence of stray currents is spread over the large area. However, usually they are not accompanied by the current flow between the pipeline and the soil, because of the lack of coating defects. Measured values and the pattern of its changes depend, among others, on the distance between the reference electrode and coating defect. Interference assessment is difficult and using classic correlation technique may lead to faulty conclusions that there is a risk of corrosion, when in fact there is no such risk. From the other hand, with those pipelines, new opportunities have emerged in the area of corrosion protection, including interaction characteristics modulation.

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ANTICORROSION PROTECTION GUARANTEES IN INDUSTRIAL APPLICATIONS. FORMAL AND LEGAL ASPECTS, SPECIFICS OF GUARANTEE CONTRACTS, INSPECTIONS

Keywords: corrosion protection, guarantees.

Abstract
A basic legal aspects, location and general view of guarantee contracts in anticorrosion protection has been presented.

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HEALTH AND LIFE HAZARDS IN CORROSION PROTECTION WORKS (LEGISLATION, ATTEMPT TO IDENTIFY HAZARDS AND GROSS VIOLATIONS OF SAFETY RULES)

Keywords: health and safety, environmental protection, corrosion protection works, corrosion, dust, noise, health and life hazards.

Abstract

The first part of the paper is a review of changes made to the legislation on health and safety and environmental protection that took place from Polish entry into the European Union. The second part is a list of the most significant hazards to the life and health of people at work related to protection against corrosion and shows some examples of blatant disregard for the risks. The third section contains the most important changes in the law and its implications for employers.

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THE VARIETY OF HOT DIP GALVANIZED COATINGS AND ITS CONSEQUENCES

Keywords: hot dip galvanized coatings, coatings morfology, surface activity

Abstract

The variety of hot dip galvanized coatings (morphology, composition, surface activity) coming from the type of the steel, bath composition, technology parameters are shown. Their influence on the coatings properties are described.

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CORROSION IN URBAN AGGLOMERATIONS - ATMOSPHERIC CORROSION OF URBAN INFRASTRUCTURE FACILITIES

Keywords: urban infrastructure, structural materials, paint coated carbon steel, reinforced concrete, atmospheric corrosion, corrosiveness of atmosphere, trends

Abstract

Structural materials, prevailing in urban infrastructure facilities, were pointed out. Fundamentals of the atmospheric corrosion of these materials were outlined. Changes in intensities of essential corrosion factors for the urban atmosphere in Poland in last two decades were shown and compared with the state of atmosphere in Europe. General trends in corrosion rate of structural materials under discussion were assessed.

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MONITORING OF ATMOSPHERIC CORROSION IN POLAND

Keywords: atmospheric corrosion, steel, zinc, corrosion monitoring, local emission points, transport lines

Abstract

A summary of the activities carried undertaken by the Institute of Precision Mechanics for monitoring of atmospheric corrosion is shortly described.The examples of results of the assessment of corrosion rate for selected structural materials applied to prediction and imaging of atmospheric corrosion at selected areas of the country are discussed. Modeling of spreading of atmospheric pollutants enables the assessment of annual loss of corrosion and corrosion class atmosphere not only on large areas such as municipalities and counties but also around the emission sources such as power plants or streets and roads.

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PROTECTION AGAINST CORROSION OF CONCRETE STRUCTURES IN THE LIGHT OF REQUIREMENTS OF THE STANDARD PN- EN 1504-2 AND ITB DOCUMENTS

Keywords: concrete structure, aggressive environment, surface protection

Abstract

The paper relates the protection of concrete structures against destructive impacts occurring in the conditions of use. The impacts of different aggressive chemicals on concrete and RC structures were presented. The requirements for products and systems to be used for surface protection of concrete and RC structures, specified in the standard PN-EN 1504-2, as well as in the documents developed by the Building Research Institute, were discussed.

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GUARANTEE FOR CORROSION PROTECTION IN THE EYES OF CONSCIOUS CONTRACTOR

Keywords: corrosion protection, responsibility, warranty, awareness

Abstract

In the article the concept of a warranty for anticorrosion protection has been discussed, appearing at each realisation stage from the offer to completion. The subject has been formulated in many questions with the aim of realisation of warranty liability resulting from the complexity of the anticorrosion protection process. The highest emphasis has been placed on liability of the anticorrosion works contractor. The aspect has been discussed of liability of building process participants, including contractors and paint suppliers..

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CORROSION AND ANTICORROSION PROTECTION OF MUNICIPAL UNDERGROUND INFRASTRUCTURE – REVIEW OF PROBLEMS

Keywords: underground infrastructure of towns, pipelines, earthing, cathodic protection, interferences

Abstract

Usually we learn about the existence of an underground infrastructure in towns, ensuring welfare to their citizens, when due to some reason it abruptly stops functioning. Obviously, corrosion phenomena in the ground are one of the reasons, while all types of conduits are the aim of their attack: cables in metal armouring and steel pipelines. Those of special importance include gas and heat pipelines supplying energy to homes, as living conditions of inhabitants depend on them. With years of continuous development this infrastructure, invisible from the ground surface, forms underground a very complex and dense entanglement of different types of conduits, which corrosively interact mutually and with neighbouring building objects. Stray currents flowing out of tram and rail tractions and flowing through this infrastructure are a particular threat. In the article the most important present day problems have been described connected with corrosion and anticorrosion protection techniques of underground infrastructure in towns.

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THE CORRELATION METHOD FOR INVESTIGATING STRAY CURRENTS – THE STILL NON-STANDARD TECHNIQUE

Keywords: stray currents, tests, interferences, correlation, standardisation

Abstract

The so called correlation technique is being applied in Poland from the eighties of the last century. It is connected with anticorrosion protection technology of metal structures in municipal areas. It is based on simultaneously investigating two mutually interacting signals representing the cause and effect of a corrosion hazard to underground structures. Representation of this dependency in the form of a correlation spectrum has been found to be an extremely convenient tool for rapid and unequivocal interpretation of results during assessment of hazards, as well as the effectiveness of remedial measures. Primarily it found application for analysis of stray current interaction, mainly in municipal agglomerations. Unfortunately, in spite of a wide and already long application period of this technique – it has not been standardised in any way. In the article correlation technique principles and application rules have been reminded, being the result of many years experience, qualifying the method for standardisation.

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THE REPAIR OF HOT-DIP GALVANIZED ZINC COATINGS ILLUSTRATED WITH AN EXAMPLE OF GANTRIES

Keywords: gantries, corrosion, PN-EN ISO 1461 norm, cathodic protection, repair

Abstract In the visual presentation the author presented a short description of hot-dip galvanising, itsfeatures, advantages as well as disadvantages caused by a technological process and external factors. He reviewed the repair methods of damaged coatings in accordance with the recommendation of PN-EN ISO 1461 norm. He also reviewed the properties of compounds designed for an effective repair of damaged galvanized coatings and mentioned their types. He presented the results of such a repair on the basis of a particular example.

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CATHODIC PROTECTION OF UNDERGROUND TANKS AT FUEL STATIONS – STATISTICAL DATA OF INSTALLATION SERVICING

Keywords: underground tanks, fuel stations, cathodic protection, servicing

Abstract

Effective cathodic protection of underground steel tank surfaces at fuel stations depends not only on the corrosion hazard from the ground (amongst others soil resistivity, presence of sulphate reducing bacteria or action of stray currents), but also primarily on proper construction of tanks and connected technological installations. Several types of errors have been described, most frequently made during assembly, which later affect effectiveness of anticorrosion protection of tanks. Results have been presented of 10-year service measurements of cathodic protection installations of LPG tanks at 8 fuel stations, at which inefficient operation had been stated of cathodic protection in the first years of their service. Modernisation performed as the result of tests in most cases caused restoration of required cathodic protection parameters.

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PROTECTION OF THE NATURAL GAS GRID ON THE CORROSION DUE TO STRAY CURRENTS

Keywords: corrosion, natural gas pipeline, stray currents

Abstract

The article presents the fundamental issues relating to the effects of stray currents, which are a threat to the proper functioning of the network of underground pipelines. Emphasis has been placed on the sources of stray currents on the route and the effects of their presence. An evaluation of the effects of pipeline corrosion caused by stray currents and the conditions that should be taken into account to minimize corrosion caused by stray currents are determined. The demand to take massive action for in-depth diagnosis of the nature of stray currents, limiting the size of them and rigorous enforcement of the legal obligation to separate electrical connections for gas installations for indoor installation are presented. the basic equations describing the potential and current distributions in the underground pipeline are established.

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MATERIAL AND STRUCTURAL PROTECTION AS THE MOST EFFECTIVE WAY TO ENSURE THE DURABILITY OF CONCRETE STRUCTURES

Keywords: concrete, corrosion, durability, material and structural protection of concrete

Abstract

Durability of concrete is of fundamental importance for the safety of the structure and for the maintenance expenditures of building works. The paper presents the basic requirements for the material and structural protection. The examples of measures to increase the corrosion protection of concrete at the stage of designing and pouring of concrete mix are given.

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WHAT MODERN RESEARCH METHODS MAY TELL ABOUT ANTICORROSIVE MATERIALS

Keywords: corrosion, organic coatings, test methods, coating structure, protective properties

Abstract

Many research methods enable prediction of coatings durability in service conditions based on knowledge of its structure. These methods are useful not only in scientific works but also in expert opinions, for example to find causes of coating damages, corrosion etc. The use of following methods for testing of coatings are discussed: scanning electron microscopy (SEM) and energy dispersive spectroscopy (EDS), atomic force microscopy (AFM), optical microscopy, Fourier transformation infrared analysis (FTIR), electrochemical impedance spectroscopy (EIS) and scanning vibrating electrode technique (SVET).