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| Research Article

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Analysis of Corrosion of Pressure-Worked Metal Parts and Methods of Its Prevention

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Annotation
This in the article metals corrosion, metal corrosion types of metals corrosion prevent to take and service the deadline extension process seeing released.

Keywords: Corrosion, corrosion corrosion environment, chemical corrosion, electrochemical corrosion, silicification, chrome plating.

Last half century during on our planet population number 1.6 times increased if, the main working release 2.5 times the size increased. Production to release organization to do, to go to put and done increase for and devices, equipment, communications and modern cars necessary will be. Of these all of them metal, alloy and without compositions imagination to do difficult. They black and colored metal alloys, natural and artificial durable from materials and from compositions is prepared. Time passing with and corrosion because of they wears out, decays and unsuitable to the point This is coming. not only economic damage, but also global environmental to disasters take is coming.

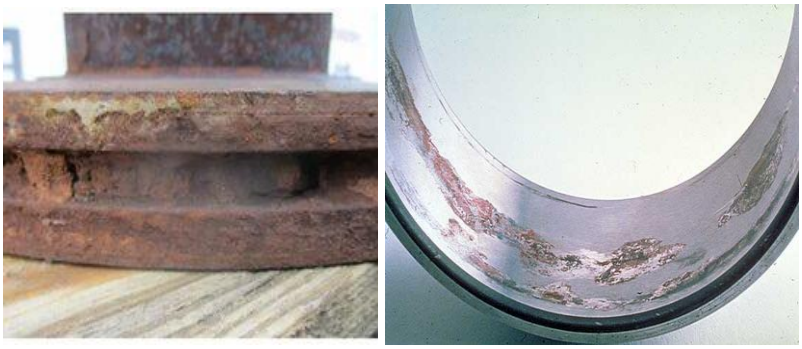

Figure 1. Corroded metals.

Metal booms, equipment, structures and of devices from corrosion our planet according to visible damage example unseen numbers organization does. For example only the United States In the States corrosion because of visible damage 300 billion per year dollar organization does this and country national 6% of income organization does.

In the Russian Federation corrosion every year because of metal fund general 12% of its mass is lost, which and annual working removable This means 30% of the metal. These losses prevent to take for of course metal to corrosion to a minimum reduce need .

you know, many metals also his/her from alloys to be prepared details thermal and other to work to be given despite, external environments (air, water, acid, alkali, salt solutions) to corrosion given is being eaten (Figure 1).

Corrosion processes following symptoms according to classification possible:

metals external environment with to be affected mechanism according to;

corrosion environment types and of the process delay conditions according to;

corrosion decay to the character according to;

corrosion environment with together to metal impact provider other additional impact types according to;

Corrosion process to go mechanism according to in nature of metals **chemical** and **electrochemical** corrosion there is.

1. Chemical corrosion . Metals dielectric environments (air , oil , gasoline) and others) in chemical to react entry because of decay chemical corrosion Corrosion speed of metals and of the environment time, composition, temperature, pressure related For example, flaming in the ovens of metals plasticity increase for the purpose when heated in it air oxygen on the metal surface It forms iron oxide (Fe_2O_3) to do chemical to corrosion example be takes.

2. Electrochemical corrosion. Metals electricity till transferable corrosion in the environment (e.g., in electrolytes) electrochemical corrosion This is the same. corrosion in practice many occurs.

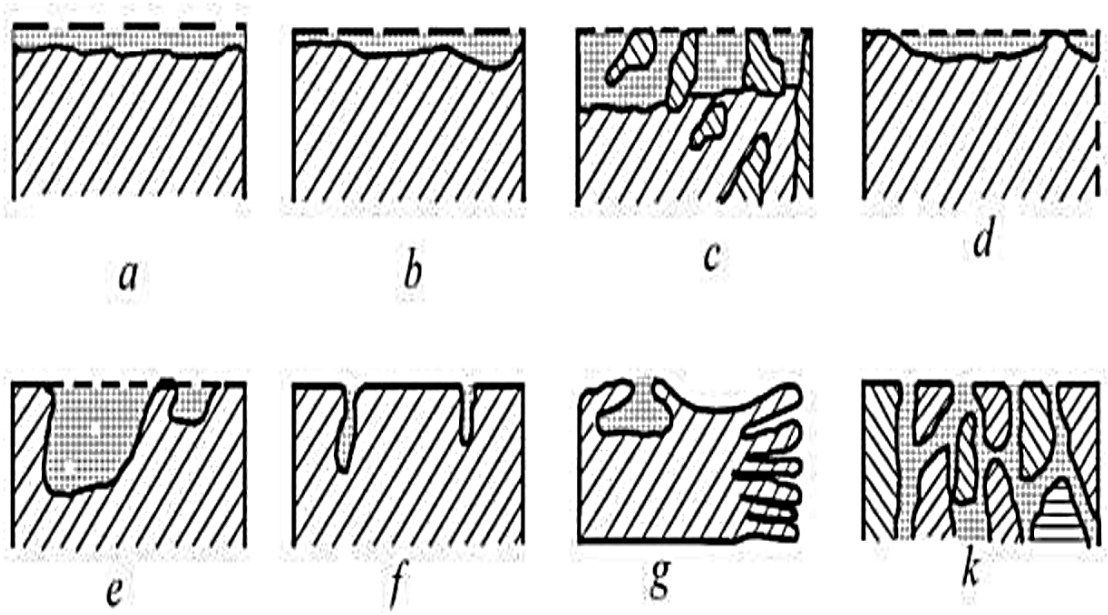

Figure 2. Metals and alloys on the surface face giving corrosion appearances. a- whole flat corrosion; b- whole uneven corrosion;

c- elected - structural corrosion; d- spotted corrosion; e- wound corrosion; f-pitting corrosion; g- surface under corrosion; k- intercrystalline corrosion.

Metals corrosion prevent to take events diverse to be to them their secrets corrosion-resistant with metals (Zn,Cr, Al,Ni) saturation, aggressive environment activity reduction and others enters.

a) Surface surfaces corrosion-resistant metals with cover This for before of the item surface surfaces mechanic or chemical in methods rust, oil and from others is cleaned. Then and into a corrosion-resistant metal (Zn, Sb, Pb) bath dropped there known time is stored. For example tinplate, wire, pipes zinc to the bathroom if it is rusty, copper items tin to the bathroom tinned. The process simplicity, work of the fruit height and thorough coating harvest to do because of this method in practice wide is used.

b) Item surface galvanic in a way corrosion-resistant metals with cover This for to the bathroom corrosion-resistant metal salt in the water solution (electrolyte) is poured into it, object (cathode) and A corrosion-resistant metal plate (anode) is inserted. The cathode vine source negative to the pole, anode and positive to the pole connected. When the current passes anode plate in electrolyte melt, its ions cathode to the surface cry goes. Covering thickness vine to the power of, its to go on time It depends. record to grow It is necessary that if the item own with metal from its potential coated-anodized and on the contrary, his from the potential big with potential metal coated-cathode method It is called.

d) Items surface corrosion-resistant metals curtain or himself/herself with cover. In this method item to the surface protection curtain high tempered under the circumstances corrosion-resistant elements of atoms due to diffusion (alloying, silicide, chromium plating) covered. Below this of methods some types with Let's meet : Chemical in a way cover . In this method steel items $NaNO_3$ salt at a temperature of 140-150^{O}C to the solution lowered, 40-50 minutes is stored. In this separated O_2 item Fe_3O_4 on the surface protection curtain harvest does. Necessary if so, then so $Ca(_{NO3})_2$ and MnO_2 to a solution of 100^{O}C item lowering one how many hour if preserved, iron and calcium oxidized protection curtains harvest will be. Qoshqavatli corrosion-resistant metal coating harvest To do this. In this way metal lists to the surface corrosion-resistant metal sheet is placed and joined together is heated and rolled. As a result bimetallic coating harvest will be.[3].

d) Environment activity reduction. This for to the environment known in quantity so -called inhibitor special substances This method is used, for example, in steam boilers. and other water with provided in systems wide For example, internal combustion of the engines cooling to the system pourable to the water known in quantity The addition of chromic acid ($K2Cr2O7_{)}$ protects the metal from corrosion much is stored.

e) Electrochemical method. This method electrolytes with directly in connection to be the details from corrosion in storage wide is used. In this to corrosion given item on the face closer to the place so -called protector plate These plates are installed. potential protection from the potential of the metal being produced small maybe Such under the circumstances item in electrolyte or in the water processing with him in giving protector between galvanic vine harvest will be. In this protector - anode, detail - cathode task does. Known from time after anode, that is protector to corrosion be given goes. In this detail to corrosion without giving For example, ships steel screws from corrosion as a protector in storage zinc from the plates use possible.

Conclusion.

Metals from corrosion protection in doing electrolyte from the method use through difficult under the circumstances worker land under structures (various goals for used pipe conductors and cables, foundations, drilling equipment), marine in the water used structures (of ships) hulls, shore metal parts of structures, marine driller platforms), chemistry industry equipment and reservoirs internal surfaces from corrosion protection possible. From this outside this in a way of details

surface to the part damage not delivered without from corrosion protection to do possible. Electrolyte in the way cathode protection coated protection with together application and other to methods It is 25-30 % more effective than

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