CORROSION OF METALS

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Abstract. This article describes the process of metal corrosion damage, types of corrosion and rust damage, methods for protecting metal from rust.

Keywords: metal corrosion, corrosion, chemical corrosion, electrochemical corrosion.

Corrosive metals are destroyed under the influence of the external environment. Depending on the mechanism of flow, chemical and electrochemical corrosion are distinguished. Metals constantly interact with the external environment, and the chemical processes that occur during the reaction can be called a struggle for survival, that is, work to reduce metal losses.

Due to the aggressive nature of the environment, atmospheric, underwater and underground corrosion can be distinguished. The types of metal destruction processes are very diverse: uniform, uneven, intermittent, crystalline and selective corrosion.

Chemical corrosion is the process of destruction of metals when interacting with the environment, which is not accompanied by the formation of currents. This type of gas This happens when gases react with metals at high temperatures. At the same time, the formation of an oxide film on iron can be determined, but this film is loose and easily torn, which does not protect the metal from damage.

Electrochemical corrosion differs from chemical corrosion by the interaction of metals with electrolyte solutions. In this case, the liquid or gas is the electrolyte. Electrochemical corrosion is difficult to predict because it takes into account many factors that change during operation. In this

case, the process of electrochemical corrosion proceeds much faster than the process of chemical corrosion. In some cases, a dense oxide film forms on the metal surface, which protects the metal from damage.

There are many ways to protect metal from corrosion. The most efficient way is to make corrosive metal. The production process of these metals is labor intensive and associated with increased economic costs.

Another means of protection is braking. Damping is a method of reducing the wear rate when compounds are introduced into aggressive environments, which significantly slow down the corrosion process. The absorption of inhibitors on the surface of protected products is one of the inhibitory mechanisms. There are metallic and non-metallic protective coatings that separate metals from aggressive environments.

Non-metallic coating is covered with varnishes, paints, various silicate enamels, polymeric materials. Silicate enamel paint is widely used in the chemical industry. Acid-resistant enamel is used to coat vacuum devices, tanks and reactors. The cost of protecting metal from corrosion is justified and gives a good economic effect, given the low cost of replacing inaccessible flame retardants.

Therefore, metal corrosion is a natural process of metal destruction under the influence of the external environment, and the use of various anti-corrosion methods should be avoided.

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