

Abstract

Master dissertation Bondar A. on " High temperature and electrochemical corrosion of steel 80 with multilayer coatings of the Cr-Ti-Al system " - K: "Igor Sikorsky Kyiv Politechnic Institute", 2017, p 84, Fig. 20, Tables 11, literature - 53.

One of the most important science purposes is creating brand new materials, which obtain high values of endurance, firmness, wear resistance, corrosion resistance, heat resistance. These materials should be used in aggressive environments along with high mechanical pressure.

Way to solve this problem is to develop multicomponent thermodiffusial coatings with better both physical and chemical properties.

Goal of the work: increasing operational properties of steel 80 by applying multicomponent coatings Cr-Ti-Al on it's surface

Object of study: thermodiffusion Cr-Ti-Al -based coatings applied on steel(80).

Subject of study: composition, structure, microdensity, heat-resistance, corrosion resistance and electrochemical behavior of steel 80 and diffusive coatings in aqueous neutral media.

Research methodology that we use in this research:

- 1) micro-X-ray diffraction analysis;
- 2) microstructural analysis;
- 3) durometric microdensity research;
- 4) gravimetric analysis of both heat and corrosion resistance;
- 5) polarization curves;

Steel 80 is used for the manufacture of round and flat springs of various sizes, springs of car engine valves, springs of shock absorbers, springs, key holders, clutch discs, eccentrics, spindles, adjusting linings and other parts working under friction and under the action of static and vibration loads.