

1. **V.E. Kechin, A.V. Kireev.** Features of cast protector's structure and properties formation in conditions of industrial production.

The article analyzes the application of methods and means to fight electrochemical corrosion of metals. The role of cast protectors in the protection of metals from corrosion is shown. A classification of metallurgical and casting factors affecting the quality of protector materials is offered and recommendations on how to eliminate defects in protectors are given. It is shown that for alloys based on magnesium, zinc and aluminum, stable electrochemical characteristics are achieved by forming a homogeneous fine-grained structure with a uniform distribution of structural components. Recommendations on the conditions for obtaining quality cast protectors in industrial production conditions are offered.

Key words: protectors, electrochemical corrosion, metallurgical and casting factors.

2. **V.A. Hartfelder, I.E. Illarionov, O.V. Kitova, L.S. Sekletina, I.A. Strel'nikov.** FMEA-technology of casting defects detection and correction in machinery construction.

Practice of implementation of certain international IRIS standard regulations for railway equipment manufacturers and usage of FMEA technology for preventive casting defects detection are described. Examples of casting quality assurance and practically-proven changes of cast control technology are provided.

Key words: quality control, analysis, cast production, certification, defect identification and correction, technology, railway transport, international IRIS standard.

3. **A.P. Firstov.** The internal stresses occurring in cast coatings at high temperatures.

The Internal stresses are the criterion for the quality of casting coatings and decrease their functional properties.

Key words: liquid glass, internal stresses, temperature.

4. **R.N. Zenkin, A.I. Walter.** Determination of technological methods of producing material from high-strength cast iron with spherical graphite form, which work in thermocyclic loading.

In this article are represented the results of research producing material from high-strength cast iron with spherical graphite form, which works in thermocyclic loading. It is shown that as the result of changing of the chemical composition with certain proportions in conjunction with special processing methods allow to vary the microstructure of the cast iron, it mainly has ferritic base.

Key words: high-strength cast iron, annealing, internal stresses, ferrite, sand-clay.

5. **E.E. Dmitrieva, E.A. Shelkovi, A.S. Yakovleva.** Control and measuring equipment for foundry.

The list of control and measuring instruments for determining manganese, silicon and carbon content in cast iron, for measuring the temperature of melts of cast alloys, for determining the compliance of alloys with technical specifications or other documents without destroying them, is provided.

Key words: Chemical composition of alloys, temperature, analysis, thermography.

6. **I.M. Shatokhin, M.H. Ziatdinov, I.R. Manashev, V.A. Bigeev, N.A. Feoktistov. Alloying of Hadfield steel by nitrogen for the purpose of increasing the service life of high-loaded parts of mining and crushing equipment.**

The results of the study of nitrogen-alloyed steels application for the production of castings «Excavator's bucket tooth» are presented. A technological process for the production of nitrogen-alloyed steel has been developed. It is shown that the use of 110G13HFAL nitrogen-alloyed steel made it possible to increase the durability of the teeth of excavator's bucket working in ore mining and processing industry.

Key words: nitrogen-alloyed steel, alloying, wear resistance.

7. **XIII International Foundry Congress and International Exhibition «Lityo-2017».**