

1. **E.I. Marukovich, M.A. Sadokha.** Trends in the development of foundry production.

Abstract. An analysis of the state of foundry production in the world is presented, as well as an analysis of the state of foundry production in the Republic of Belarus. The dynamics of changes in production capacities, the degree of loading and the volume of production of castings for various types of alloys is shown. It is established that the structure of cast products produced both in the world and in the Republic of Belarus is in constant dynamics and there is a constant change in the ratio of production volumes from various alloys. The development of the foundry production of the Republic of Belarus as a whole is similar to the world foundry production, however, there is a certain time lag and certain differences in the ratio for different types of casting.

Keywords: foundry, castings, gray cast iron, highstrength cast iron, steel, aluminum alloy, foundry capacity, foundry loading.

2. **Interview of the editor-in-chief of the magazine «Foundry of Russia» Dibrova I.A. with the General Director of NPP Vulkan-TM LLC Zolotukhin Vladimir Ivanovich.**

3. **M.A. Sadokha, A.V. Krivtsov.** Features and practical experience in obtaining complex profile castings from aluminum alloys.

Abstract. Variants of preparation of production of castings from aluminum alloys in conditions of single and small-scale production are considered. It is established that in order to reduce the time and cost of obtaining castings, it is most expedient to carry out end-to-end design and manufacture of technological equipment using additive technologies and casting in sand-resin molds obtained using the «no-bake» technology.

Keywords: aluminum alloy, casting, technological equipment, production preparation.

4. **A.V. Sulitsin, S.V. Brusnitsyn, I.A. Gruzdeva, V.V. Morgunov.** Development of contact wire manufacturing technology for high-speed railway lines.

Abstract. The article presents the results of industrial experiments on the development of technology for the production of contact wire for high-speed railways from alloys of the Cu—Mg system. The structure of the cast workpiece was studied by scanning electron microscopy, element-by-element mapping of the workpiece surface area was performed. The hypothesis about the formation of magnesium oxide deposits on the working surface of the crystallizer graphite bushing as a result of magnesium condensation has been confirmed. Changes have been made to the design of the water-cooled crystallizer for the supply of inert gas. A technological mode of continuous casting has been developed, which makes it possible to obtain high-quality cast billets. A contact wire with a nominal cross section of 100 mm² was made. The mechanical and electrical properties of the contact wire were tested, the results of which indicate full compliance with the requirements of the state standard. A certificate of conformity for the contact wire was obtained based on the results of certification tests.

Keywords: continuous casting, cast workpiece, contact wire, mechanical properties, electrical resistivity.

5. S.S. Tkachenko, A.V. Yantovsky, M.A.Ioffe. Objective necessity of production of mechatronic modular machines.

Annotation. The directions of thrift of basic and auxiliary materials, reduction of machine tool manufacturing time due to a revolutionary approach to the principles of design and creation of basic parts from unified modular cast blanks are proposed.

Keywords: machine tool construction, basic machine parts, unified casting, modular parts, cost of resources, thrift, complexity of basic castings in machine tool construction.

6. All-Russian competition of final qualifying works (diploma projects and graduation papers) in the field of foundry production in 2023