

1. **Poznushev S., Dghafarov N., Bogushevich S., Belov N., Koltygin V., Bagenov V.** Analysis of mastering the series manufacturing of large sealed aluminum castings.

In this article the stages of mastering the series manufacturing of large sealed aluminum castings were analyzed. Different managerial and technical questions were settled during this project. Development of the technology using modern methods of modeling, optimization of the casting's weight from 600 kg to 320 kg was described. Details of manufacturing foundry molds and core boxes, which dimensions are 1650*1200*700 mm, were examined. We have found solutions of precise assemblage of the casting mold consisting of 14 cores with the weight 3.5 tons. Basic principles of getting sealed aluminium castings with specified mechanical properties and good outward appearance were stated. Authors: Sergey Poznishev — JSC Litmashdetal, General director Nurmagomed Dzhafarov — JSC Litmashdetal, Chief of engineering and design department, project manager Sergey Bogushevich — Ingetech Ltd, Director Nikolay Belov — National university of science and technology «MISiS», Deputy director of engineering center «Foundry technologies and materials» Andrey Koltygin — National university of science and technology «MISiS», Docent of «Technologies of casting process» department Vyatcheslav Bazhenov — National university of science and technology «MISiS», senior lecturer of «Technologies of casting process» department.

Key words: aluminum foundry, sealed castings, castings of considerable weight and large dimensions, foundry patterns and box, modeling of founding technology, quality assurance of aluminum castings.

2. **Franco Zanardi, Fabio Zanardi.** Foundry and Mechanical Plant plant "ZANARDI".

The results of heavy duty cast iron production by means of thermal treatment of ductile iron are provided in this article. The nomenclature and mechanical properties of castings, produced by this technology, are given.

Key words: annealed ductile iron, heavy duty cast iron, wear resistance, mechanical properties.

3. **Nikitin K., Nikitin V. Gusev A.** Obtaining castings of the alloy system Al-Mg casting immersion and vacuum suction.

The design is developed and manufactured manipulator, that allows to receive the ingots from aluminum alloy with casting by vacuum suction and immersion. Parameters in the casting of billets (vacuum suction) and flat bars (casting immersion) system alloy Al-Mg were defined. Studied the structure and properties of ingots of wrought alloys AMg4, 5, AMg5 and AMg6.

Key words: manipulator, casting by vacuum suction, casting by immersion, aluminum deformable alloys, alloys of system Al-Mg, structure, properties.

4. **Brusnitsyn S., Mysik R., Sulitsin A., Ozhgikhin I.** Influence of continuous cast bar quality on cracks formation in the copper rod.

In this paper the effect of the main sources of gas saturation of the copper melt at Contirod technological method for copper rod manufacturing on probability of continuous cast bar gas defects formation was studied. Metallographic analysis of continuous cast bar samples was carried out. Set the average pore size of the gas volume fraction and porosity. The average gas pores size and gas porosity volume fraction were determined. Updating of technological regimes of continuous casting will reduce the chance of copper rod cracking during the standard torsion testing.

Key words: copper, Contirod method, continuous casting, gas defects, rod, cracks.

5. **Pankratov S., Semenov K., Batyshev K.** The influence of light alloying elements on casting qualities of copper.

The influence of light additives of iron, nickel, silicon and tin on casting qualities of copper is studied in this article. The nature of shrink cavities and pores allocation in low-alloyed copper-based alloys is shown.

Key words: copper, alloying, fluidity, shrinkage.

6. **Soshkin V., Kumarin M.** Modern, effective materials and products for high temperature insulation based on mullite fibers and inorganic binder.

The article contains the original technology used by “Fibrous refractories“ with the production of high-temperature thermal insulation materials and products based on mullite fibers and an inorganic binder. The unique material “wet” felt is shown: its properties, advantages, and examples of effective use. There is the actuality of applying formed parts for solving a wide range of problems in metallurgy. The advantages of using exothermal and isothermal sleeves on steel casting are defined.

Key words: fibrous refractories, wet felt, shaped refractories, insulating and exothermal inserts, furnace lining, lining in the exhaust pipes of compressor stations, exothermal and isothermal sleeves.