

1. BRICS foundry association constitution
2. V BRICS Foundry Forum
3. Chinese Foundry Industry
4. M.V. Kostina, S.O. Muradyan. New high-strength austenitic casting steel.

The information about structural-phase state after thermal treatment, casting, physical and mechanical, corrosion properties of casting austenitic Cr—Ni—Mn—Mo—0,5%N steel is provided in this article. Due to alloying by nitrogen, this steel significantly exceeds casting austenitic steels type 18Cr—10Ni, used in Russian Federation, in strength, ductility and viscosity, wear resistance and corrosion resistance.

Key words: austenitic steel, strength, viscosity, corrosion resistance, wear resistance.

5. R.K. Mysik, S.V. Brusnitsyn, A.V. Sulitsin, M.O. Ivkin. Influence of intermetallics on hardness of complex alloyed brass.

The results of study of phase composition, structure and properties of multi-component complex alloyed wear-resistant brass are presented. Material contains aluminium, manganese, silicon, nickel and chromium besides copper and zinc. A review on influence of these components on formation of intermetallics with different chemical composition and morphology is made. On the basis of analysis it is revealed that wear resistance of brass is highly dependent on the ratio of α - and β -phases and volume fraction of intermetallic particles. Chemical X-ray fluorescence, scanning electron microscopy (SEM) and electron-probe microanalysis (EPMA) are used. On the basis of experiments it is established that alloys without chromium contain rod-shaped intermetallics based on Mn-Si compound with a ratio of length to cross sectional dimension 2...4; these intermetallics create the effect of anisotropy in alloy. Presence of chromium in alloy leads to formation of equiaxial intermetallics with a chromium silicide core and manganese silicide coat; in this case the alloy is isotropic. It is established by metallographic study that a density of distribution of intermetallic compounds 50...130 thousand particles per 1 mm³ is required to archive a hardness of brass 291...298 HB. Cast ingots are made by semi-casting method and then pressed to tube bars; finished products are made by stamping so, production technology can improve mechanical characteristics of alloy.

Key words: complex alloyed brass, cast bar, intermetallics, hardness, structure, density of distribution.

6. V.R. Baraz, I.A. Gruzdeva, S.S. Gerasimov, A.O. Sedelnikova. The influence of alloying additives on the properties of alloy system Cu—Ni—Zn.

Using the method of planning an experiment the Sn and Al doping and the casting mold temperature influence on the strength properties and the casting characteristics of nickel silver Cu—15Ni—20Zn has been studied. Aluminum doping (0,4%) has an influence on the casting mold fillability positively and makes better the surface condition distinctly. Tin doping conduces to the microhardness increase as a result of a solid solution hardening and hasn't an influence on the casting mold fillability. The mold temperature in the time of the casting has an impact on the microhardness insignificantly. The temperature decrease from 550°C to 450°C conduces to the microhardness increase up to 6...7%.

Key words: nickel silver, doping, casting mold fillability, mold temperature, the method of planning an experiment, regression equation

7. **A.A. Shatulskiy, V.A. Izotov.** Gating systems for production of cast iron castings.

Research results of influence of various technological and design parameters of rain gating systems on quality of cast iron castings are given. New knowledge about melt flow from holes of rain gating systems is received. Criterion equation, describing melt flow process, is suggested. The connection between the conditions of melt flow and formation of gas holes and porosity in the casting is proved.

Key words: rain gating system, casting defects, mold flow.

8. **Y.F. Voronin.** Simple solutions of elimination of various marriage of castings.

In article summary on the main defects of castings which can be liquidated at plants for a short time is considered. For the explanation of information we will review real examples, since gas sinks and fishing nonmetallic inclusions. The oxidized gas sink is investigated, the reasons of its emergence and a way of elimination are defined. The similar analysis is carried out with svishchevidny light gas sinks on castings «A cover of cylinders» for cars, hot fracture on castings «Distributor», shrinkable sinks in thermal knot on casting «A cover of cylinders». Removal of slag inclusions in gating system with the centrifugal slag catcher is considered. Similar information on these and other defects will be carried out

Key words: defects of castings, kinds of defects, visual and logical approach, recognition of images, the analysis, short recommendations, emergence of possible defects.

9. **A.Tikhonov, V. Butrim.** Stain-resistant aluminum alloy AL311 (AlMg9ip) for casting.

The aluminum alloy AL311 (AlMg9ip) for stress castings has the high resistance the intercrystalline corrosion and corrosion on stress. The alloy has mechanics properties $\sigma_B = 325\text{—}370$ МПа, $\delta_5 = 19\text{—}31\%$ for casting metal mould.

Key words: aluminum alloy AL311 (AlMg9ip), stress castings, stainresistant.

10. **N.A. Kidalov, A.S. Knyazeva, I.A. Shamrey.** Study of polymer-colloid complexas binder for molding and core mixtures.

The paper studied the possibility of using the polymer-colloid complex as a binder in the compositions of core mixtures. It is shown that polymer-colloid complex with a content of 0.2—0.8% mol of the carboxyl groups in the copolymer provides a higher properties of mixtures.

Key words: polymer-colloid complex, core mixture, binder.

11. **P.K. Shurkin, N.A. Belov.** Improving the properties of casting made of Nikalin ATS6 N0,5Z by hot Isostatic pressing method.

This article describes the basic possibility of enhancing the properties of castings of nickalyn ATS6N0,5ZH produced using dirty stock by hot isostatic pressing operation.

Key words: high-strength aluminium alloy, eutectic alloys, hot isostatic pressing, nickalyn

12. **E.P. Shalunov.** Nanostructured materials based on powder copper.

The data on the developed volume nanostructural materials based on powder copper possessing the high strength and wear resistance at high temperatures are provided. The test results allow to consider

these materials efficient alternative to the standard materials which are used in the high-forced diesel engines.

Key words: volumetric nanostructured materials, powder metallurgy, high-forced diesel engines, wear resistance.

13. E.P. Shalunov, V.V. Bedunkevich. Aluminium material from the of granules produced by rapid crystallization.

Material from the of granules produced by rapid crystallization which were subjected to a reactionary mechanical alloying with carbon is received and examined. The tensile strength at 350°C the material was not less than 170 MPa, which can be attributed to the category of heat-resistant aluminum materials.

Key words: aluminium, granules, rapid crystallization, reactionary mechanical alloying, attritor, strength.