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**FEATURES OF CAST-IRON PARTS WITH WEAR-RESISTANT  
AND SHATTERPROOF PARTS FROM THE SAME MELTDOWN**

In this article the results of researches concerning new technological methods of production of cast iron parts (castings) with differentiated properties in their local parts from the base melt melted in one melting aggregate are given.

It is noted that using cast iron castings with differentiated properties is a promising area of various industries for the design of new machines, mechanisms and other special equipment with improved performance characteristics.

It is stressed that cast iron parts with differentiated properties, especially with the combination of parts made of wear-resistant white and shatterproof high-strength cast irons, are practically not used in industry.

The most widespread foundry methods of production of cast iron with differentiated properties have been analyzed and their main drawbacks have been revealed, which promoted the development of new foundry methods and conduction of corresponding researches.

According to the new technological methods the differentiation of cast iron structure and properties in different parts of castings is achieved due to the in-shno-form processing of the base melt flow, which is melted in one melting unit, in separate reaction chambers of the casting system of the casting mold of carbido-utvoryuvalnym and spheroidalnym additives. This makes it possible to manufacture castings with a combination of the structure and properties of wear-resistant white cast iron and high-strength high-strength cast iron with spheroidal graphite, designed for use in shock-free as well as shock-abrasive wearing.

Mathematical and physical modeling and full-scale experiments were carried out, which confirmed the possibility of realization of the proposed technological methods and made it possible to establish optimal conditions and modes of formation of differentiated structures and properties in castings.

The advantages of the proposed technological methods of differentiating the structure and properties of metal castings, as well as the prospects of their use in various industries for a wide range of cast products are highlighted.

**Keywords:** method, cast iron parts, white wear-resistant cast iron, high-strength spheroidal graphite cast iron, mechanical partition, horizontal and vertical slabs.

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