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IMPROVING THE TECHNOLOGY OF OBTAINING GRAY SINK ALLOY BRANDED СЧ – 32-52, СЧ – 28-48 USING SECONDARY BLACK METAL FRAGMENTS

*Axunjonov Anvarjon Sobirovich
*Bektemirov Abdujalol Do‘smuxammad o‘g‘li
**Dovulov Shuxrat Bozarovich,
*Erkinjonov Abdulxamid Baxtiyorjon o‘g‘li
*Andijan machine-building institute
**Tashkent state technical university
ahunjonov.anvarjon@gmail.com, abdujalol.1994@mail.ru,
abdulhamiderkinjonov@gmail.com

Abstract
This article discusses the improved technology of obtaining gray sink alloys branded СЧ – 32-52, СЧ – 28-48, which are the most widely used among sedimentary alloys, using secondary black metal fragments.

Keywords: Secondary black metals, sink alloys, gray brush, graphite, lideburid, СЧ – 32-52, СЧ – 28-48.

Introduction

Cast iron contain a lot of additives to the composition of steel Si, Mn, P, S (silicon, marganes, phosphorus, sulfur) [1]. While the properties of the sink depend on the amount of these additives, the state and shape of the carbon dioxide contained in the alloy determines the basis of the cast iron structure and properties, and accordingly it is divided into sedimentary species:
- If carbon dioxide is mainly in the form of a chemical compound, such alloys are called white cast iron.
- If carbon dioxide is in a pure graphite state in the alloy, depending on the shape of the graphite, the alloy is called gray, hammering, and cast iron with high consistency [2,3].

Method:

Carbon monoxide is a form of carbon dioxide, carbide (Fe3C), graphite (C), and solid solution Fe(C). Cast iron can have perlith, ferrit, and perrit-ferrit structures based on metal. Therefore, if the mechanical properties of cast iron on the one hand depend on the shape of graphite, on the other hand, they will depend on the basis of iron [4].
The gray cast iron and highly skilled sink structure will look the same as in Figure 1. The formation of the sedition structure depends primarily on the composition and the rate of cooling. The silicon element greatly influences the formation of graphite. Therefore, the structure is controlled by changes in the amount of cream in the cast iron and the rate of cooling. (1.1 - graphic)

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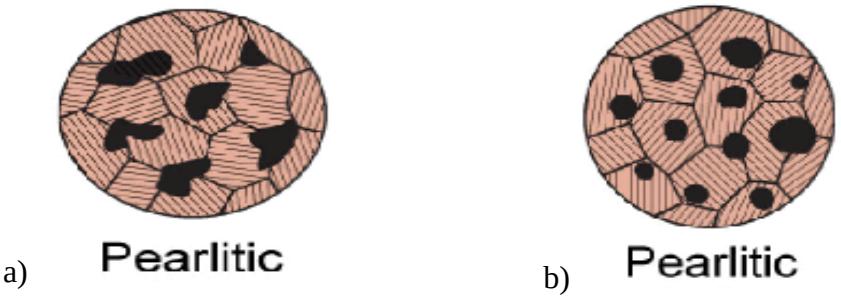
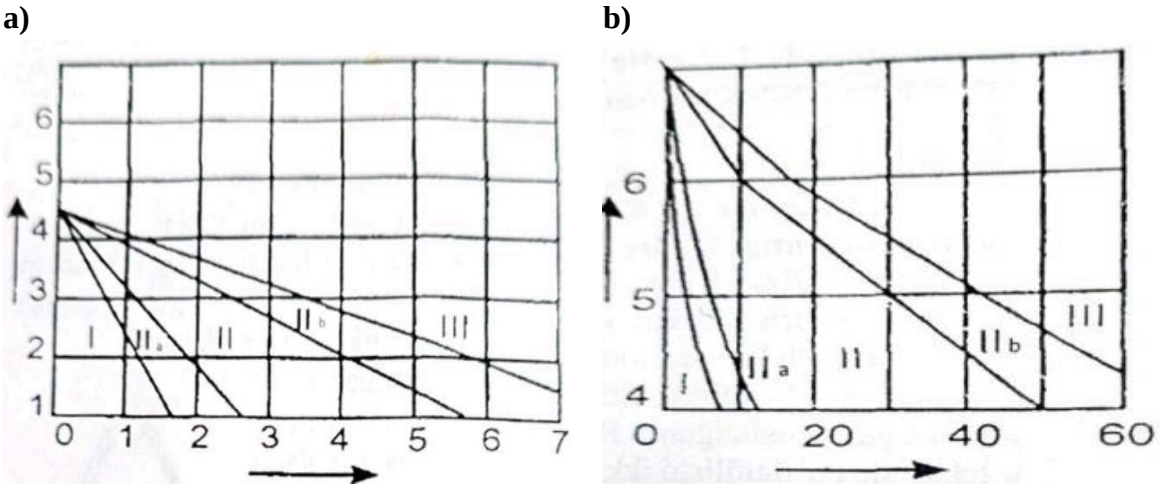


Figure 1: The structure of a high-strength cast iron alloy,
a) Gray cast iron with perlite + graphite structure
b) Highly durable cast iron with perlite + graphite structure

In precision alloys, marganes (0.5-1.4%) do not affect the mixing process of graphite, but it reduces the damage of sulfur. Phosphorus does not affect the mixing process of graphite, but it produces an euthetic mixture that improves the liquid acidity of the sink, increasing the likelihood of classes (fractures). Causes an increase in the morgue in the heat [5].

1.1 - graphic



1.1- graphic: (a) Graph of carbon (C) dependence on Silicone (Si). (b) Depending on the thickness of the cast in the formation of carbon dioxide and silicon

In precision alloys, marganes (0.5-1.4%) do not affect the mixing process of graphite, but it reduces the damage of sulfur [6]. Phosphorus does not affect the mixing process of graphite, but it produces an euthetic mixture that improves the liquid acidity of the sink, increasing the likelihood of classes (fractures). Causes an increase in the morgue in the heat. This is why more marganes are added to the sink in order to reduce the effects of sulfur, ferromarganes (FeMn). At the same time, the amount of marganes is about 75%.

High-strength gray cast irons СЧ 28-48, СЧ 32-52 are high-strength cast irons. Accordingly, the structure can be based on pearlite (P+G), ferrite (F+G) and pearlite and ferrite (P+F+G). It is observed that the mechanical properties of cast iron depend on the type of metal base and the shape of graphite. The properties of the metal base are close to those of steel. Therefore,

graphite is collected mainly on the surfaces of separation. The less graphite the brush, the smaller the size, the higher its properties. From this we can say that this structure was also found to have occurred in the СЧ 32-52 sink we are proposing for production.

Results:

In obtaining such a branded cast iron, we offer quality snags by sending FeSi 75%, FeMn 75% and silicon carbide (SiC) into the lytical pathway into the mold as a modifier. The recommended СЧ 32-52 gray brush content was presented in Table 1.1.

Table 1.1

Mark	Elements %						
	C	Si	Mn	P	S	Cr	Ni
Сч32-52	2,7-3,0	1,1-1,5	0,8-1,2	0,2	0,12	0,3	0,5

Table 1.1 Recommended СЧ 32-52 Gray Cast iron Compound

Mechanical properties: 229-280 HB. A cats iron with such properties is of very high quality and high strength.

It is resistant to external influence forces. Therefore, you can prepare mechanical details with a thickness of between 20mm and 60mm and larger. The demand for such details is increasing day by day in our republic, especially now, with the development of the construction industry, it is possible to prepare components used for equipment and spare parts used in Uzbek energy enterprises.

In the production of cast iron of this brand, mainly secondary black metal scraps, 80% of steel waste, and 20% of cast iron waste produced during production were used. Currently, secondary steel products are produced at the enterprises of the auto industry, they are mainly pressed (briquetted) in sheet form.

Conclusion:

This proposed technology has been developed to melt metal using induction electric furnaces and obtain cast iron of high quality СЧ 28-48, СЧ 36-52 with very strong properties. Cast iron of such brands was not cast in our republic. By pressing the secondary steel waste products into briquettes, adding modifiers, ferroalloys (FeSi, FeMn), silicon carbide (SiC), graphite powder, bringing the amount of chemical elements in cast iron to the required norm, high-quality, high-strength cast iron is produced. products are offered.

The properties of this cast iron are equal to the properties of СЧ 40-50, СЧ 45-55 cast iron working under high pressure, and it is considered a replacement product. Because graphite looks like a plate.

If high-strength cast iron is obtained by processing secondary metal scraps through the proposed technology, the cost of the product, that is, details, will be significantly reduced.

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