Q.A.Rejabboev[1], G'.A.Doliyev[2] ,
A.B.Abdulhayev[3],A.A.Nodirov[3]
[1] Namangan davlat universiteti erkin tadqiqotchisi
[2]Namangan davlat universiteti t.f.d.,professori
[3] Namangan davlat pedagogika instituti t.f.n.dotsenti

RANGLI METALLARNI CHO'ZISH UCHUN ISHATILADIGAN SUYUQ SURKOV KOMPAZIT OLISH TEXNOLOGIYASINI YARATISH.

Anatatsiya: *Ushbu maqolada hozirda qurilish va texnika sanoatida juda ko'p ishlatilayotgan mis va alyuminiyning diametri 0.2 sm holatida cho'zish uchun ishlatiladigan suyuq surkov kompazit olish uchun o'tkazilgan tajriba sonlari keltirilgan. Ushbu sinov tajribalar kalsiy va natriy ionlarining oleat, palmitat, stearat va linolin organik murakkab tuzlarining 40-70% li kislota va ishqoriy eritmalari asosida olingan. Tajribalar rangli metallarni cho'zish sanoat korxonalarida o'tkazilgan.*
Kalit so'zlar: *mis, alyuminiy, kalsiy oleat, kalsiy palmitat, kalsiy stearate, kalsiy linolin, natriy oleat, natriy palmitat, natriy* **stearate**, *natriy linolin va organik murakkab tuzlar.*

К.А.Реджаббоев[1], Г.А.Долиев[2],
А.Б.Абдулхаев[3],А.А.Нодиров[3]
[1]Внештатный научный сотрудник
Наманганского государственного университета.
[2]Наманганский государственный университет,д.т.н. проф.
[3]Наманганский государственный педагогический институт к.т.н. доц,

РАЗРАБОТКА ЖИДКОСТНО-УДАРНОЙ КОМПОЗИЦИОННОЙ ТЕХНОЛОГИИ ДЛЯ РАСТЯЖКИ ЦВЕТНЫХ МЕТАЛЛОВ.

Аннотация: *В данной статье представлены результаты экспериментов, проведенных по получению жидкого инжекционного композита для вытяжки меди и алюминия диаметром 0,2 см, который в настоящее время широко применяется в строительной и машиностроительной отрасли. Эти опыты проводились на основе 40-70% кислых и щелочных растворов олеатных, пальмитатных, стеаратных и линолевых органических комплексных солей ионов кальция и натрия. Эксперименты проводились на промышленных предприятиях по вытяжке цветных металлов.*
Ключевые слова: *медь, алюминий, олеат кальция, пальмитат кальция, стеарат кальция, линолин кальция, олеат натрия, пальмитат натрия, стеарат натрия, линолин натрия и органические комплексные соли.*

Q.A.Rejabboev[1], G'.A.Doliyev[2] ,
A.B.Abdulhayev[3], A.A.Nodirov[3]
[1]Freelance researcher at Namangan State University.
[2]Doctor of Science, Professor at Namangan State University.
[3]Candidate of technical sciences of Namangan State University

DEVELOPMENT OF LIQUID IMPACT COMPOSITE TECHNOLOGY USED FOR STRETCHING NON-FRONOUS METALS.

Abstract: *This article presents the results of experiments conducted to obtain a liquid injection composite used for stretching copper and aluminum with a diameter of 0.2 cm, which is currently widely used in the construction and engineering industry. These experiments were conducted on the basis of 40- 70% acid and alkaline solutions of oleate, palmitate, stearate and linoleic organic complex salts of calcium and sodium ions. Experiments were carried out in non-ferrous metal stretching industrial enterprises.*

Key words: *copper, aluminum, calcium oleate, calcium palmitate, calcium stearate, calcium linolin, sodium oleate, sodium palmitate, sodium stearate, sodium linolin and organic complex salts.*

Objective*. Preparation of liquid used for drawing non-ferrous metals based on high molecular fatty acids.*

Methods. *In the research laboratory, the fluid required for wet drawing copper wire and its corresponding standards have been determined. The process of liquid preparation in different proportions was controlled in the temperature range from 60 0C to 80 0C. Special reactor. All substances were measured with high precision on an electronic analytical balance.*

Results. *Liquid components: These experiments were conducted on the basis of 40-70% acid and alkaline solutions of oleate, palmitate, stearate and linoleic organic complex salts of calcium and sodium ions. Determined by the best option conducting 10 tests on local raw materials in the laboratory. The results of the experiment are presented in the table.*

Introduction

The technology of obtaining a liquid casting component used in loose stretching of copper wire[1,2]. High molecular fatty acids are used in wet stretching of non-ferrous metals. In order to increase the productivity of the wire drawing process, the drawing speed should be increased as quickly as possible without causing wire breaks or deterioration of the quality of the final drawn wire. In the multi-stage stretching process, the diameter of the wire is gradually reduced from the initial diameter to the final diameter using a series of dies[3,4]. The wire drawing process can be classified according to the final diameter of the wire: large wire - 1.5-8.0 mm, medium wire - 0.35- 1.5 mm and fine wire - 0.01 - 0.50 mm. In addition, the multi-step stretching process can be divided into two types according to the stretching state: dry stretching and wet stretching. Typically, copper wire is produced by a multi-step wet drawing process. In this process, the reduction ratio from the initial wire to the final wire is more than 90%, and the final stretching speed is very fast[5,6].

Research methodology

In particular, the final drawing speed for fine copper wire is more than 1000m/min. Therefore, if the wires break during the process, the drawing process stops. This leads to a significant decrease in productivity.

Table 1

Liquid content used in wet drawing based on high molecular fatty acids,%

The composition of the test liquid casting composite,%	**The composition of the test liquid casting composite,%**									
	1	2	3	4	5	6	7	8	9	10
Calcium oleate	11	10	12	11	**11**	17	10	11	20	10
Calcium palmitate	7	8	7	8	**7**	8	9	7	8	7
Calcium stearate	8	6	8	7	**9**	8	7	8	8	12
Calcium linoleic	6	8	7	8	**9**	8	11	10	8	9
Sodium oleate	8	9	8	9	**10**	8	9	10	8	10
Sodium palmitate	9	8	9	10	**9**	8	9	9	8	12
Sodium stearate	7	8	10	8	**8**	8	9	10	8	11
Sodium linoleic	8	9	8	9	**9**	8	10	10	8	10
acid and base solution	36	34	32	30	**28**	27	26	25	24	19

The coating composition of the the test liquid number 5, calcium oleate (11%), calcium palmitate (7%), calcium stearate (9%), calcium linoleic (9%), sodium oleate (10%), sodium palmitate (9%), sodium stearate (8%), sodium linoleic (9%) and acid and base solution (28%).

Each component of liquid cast composite has its own function (Fig. 1). Water-soluble fatty acids form a film on the surface of the wire. Many experiments were conducted in industrial enterprises. Accordingly, in Experiments 2 and 5, the liquid spray compound was more effective in forming a film than the other experiments. Temperature standards are an important factor in improving the quality of wires during the drying process. Therefore, the drying process was carried out at different temperature ranges.

40-70% acid and alkaline solutions of palmitate organic complex salts of calcium and sodium ions were slowly heated in a water bath. In this process, it is important to ensure that the temperature does not exceed 70ºC.

Discussion of obtained results: Palmitate organic complex salts of calcium and sodium ions are fully dissolved. Then the rest of the additives were added little by little

to the thick mass and mixed intensively. The added components are mixed with full oily liquid and form a homogeneous homogeneous system for 55-60 minutes.
The most important indicator of liquid plastering composite is its adhesion to the surface. To check this, a copper wire with a cleaned surface is inserted into the oily product, the coating composite. Then the oily product adheres to the surface of the copper wire forming a thin layer.

Results. A number of parameters should be taken into account when optimizing a liquid injection component. In addition to the most important parameters that directly affect the physico-chemical properties of the work result - it depends on the type of metal, wire diameter and pulling speed.
Often, the person responsible for determining the need for copper wires calculates the consumption of copper wires per 1 p/m of the seam. This method allows you to control the individual consumption of copper wires. It is known that the weight of the copper wire is affected by the diameter, length, type of coating and other factors.

A good knowledge of the properties of the above products allows to increase the required efficiency of the copper wire and reduce its consumption. Electrodes are also divided into thin coated electrodes and thick coated electrodes. Thin coated copper makes the wire more stable. The thin coating makes the wire more stable. Copper wires form a weld, which is a strong "bridge" between the elements to be joined. copper and aluminum wires are used both in housing construction and in mass production industrial facilities, therefore, all the requirements that allow reducing the amount of oxygen and nitrogen in the molten metal are met when creating a liquid welding component for copper wires[3,4] n addition, it is necessary to pay attention to the characteristics of copper wires with different coating thicknesses. For example, processing of non-ferrous metals is carried out in three ways. The advantage of the wet method over the thermal method leads to an increase in the cost of the product when working with metals at high temperatures in the thermal method, because in order to heat the metals during thermal processing, the heat must be increased to the melting temperature of the metal.

Another method of processing metals is the dry method. The advantage of the wet method over the dry method is that when processed by the wet method, a thin film is formed on the metal surface, and it is much easier to clean the stretched metal surface from the film.

It is recommended to use thick coated copper wires instead of thin walled copper wires and makes it more convenient. This is because the thick coating of the liquid coating component contains oxidizing and slag-forming substances.

The presence of a large amount of slag allows the copper wire to be protected from the environment, so this liquid casting is an excellent choice for drawing component critical structures. By using liquid casting components, critical metal structures can be drawn without compromising quality. The liquid coating used in the drawing of non-ferrous metals must provide high mechanical properties of the component and high performance when joining the parts by drawing.

Establishing the production of import-substituting products based on local raw materials, filling our markets with the necessary products, ensuring the full operation of

production facilities, saving funds and their rational use, economic growth and is the most important source and factor of structural changes in the economy.

Currently, the main raw materials for liquid coating composites are imported from other countries - oleate, palmitate, stearate and linolin organic complex salts of calcium and sodiumions. This leads to an increase in the real cost of the product. In addition, it negatively affects the proper functioning of the production enterprise.

The conclusion. Processing of non-ferrous metals is carried out in three ways. The advantage of the wet method over the thermal method is that the thermal method leads to an increase in the cost of the product when working with metals at temperature, because in thermal storage, in order to heat the metals, the heat must be maintained until the metal melts. will be restored.

Conculation: Another method of metal processing is the dry method. The advantage of the wet method over the dry method is that when it is distributed by the wet method, a thin film is formed on the metal surface, and it is much easier to clean the stretched metal surface from the film.

Bibliography:

1. VI Конференции «Металлургия цветных и редких металлов» 5–7 сентября 2012 Красноярск, Россия. с 1044.
2. Xiaodan Zhanga, Andrew Godfreya,⁎, Niels Hansenb, Xiaoxu Huangb, Wei Liua, Qing Liuc “Evolution of cementite morphology in pearlitic copper wire during wet wire drawing” 2012. p-p 78-81.
3. Zelin M. Microstructure evolution in pearlitic coppers during wire drawing. Acta Mater 2002. p-p 55-58.
4. Ochiai M, Nishida S, Ohba H, Kawata H. Application of hypereutectoid steel for development of high strength copper wire. Tetsu-to-Hagane 2003. p-p 145-149.5.
5.https://www.researchgate.net/publication/ 338509781_Effect_of_Process_Parameters_in_ Copper-Wire_Drawing.
6. https://www.wiremac.com/sale-20455003-15-kw-wet-wire-drawing-machine-for-finecopper-wire.html