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IMPROVING THE ABRASION RESISTANCE OF MINING EXCAVATOR BLADES

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As a result of scientific and technical progress, the economy and machine-building industry are developing rapidly. The development of the economy and industry requires serious research on the search for high-strength, easy-to-use, inexpensive, thorough materials and increase the durability of the joint. The science that studies the composition, structure, and properties of alloys, as well as the relationships between the structure and properties of a bond and the methods of refining, is called material science. Metal is the most widely used material in our daily lives.

Metal is the most widely used material in our daily lives. Metals have been known to mankind since ancient times and have played a significant role in the development of the material culture of human society. In fact, there is no sector of the economy that does not use metals. There are conflicting issues in the choice of materials for machine parts and in the technological process of their processing. For example, in the creation of machinery that can ensure safe operation for a long time, additional details must be cheap, compact, elegant, thorough, as well as made of high quality materials.

It goes without saying that the processing of materials can lead to a sharp increase in cost. Solving such complex engineering problems requires in-depth knowledge and great responsibility on the part of materialists. In addition, it must be prepared. It is obvious that the processing of materials can lead to a sharp increase in cost.In ancient times, people used materials such as stone and bone as tools. These materials were recycled and used in uer processing and hunting weapons. Gradually, the use of materials such as wood, leather and clay was mastered - the metallurgical industry emerged in the Bronze Age. It was discovered that it was possible to control the properties of the bond by changing the composition of the metals, and this began to be used in practice.

In order to accelerate the economic development of the independent Republic of Uzbekistan in all respects, it is important to develop mainly heavy industry, as well as sectors that will contribute to the further development of the entire economy. One such sector is the mining industry.

Although the Republic of Uzbekistan is currently one of the most developed countries in the mining industry, it has huge and valuable mineral resources that are not yet involved in industrial production. There are not many countries on the world map that have the resources available on the territory of Uzbekistan, and most of these resources have not yet been used. Our highest goal, both now and in the future, is to enrich the life of our people materially and spiritually, to improve their lives. In order to implement this task, it is necessary to increase the pace of production, the economy on a scientific

and technical basis, the use of new technologies, the restoration of old equipment, saving products, improving production management. It is still important to pay more attention to the economy, to use products and equipment more efficiently, to transfer them to zero-waste technology. At present, coal cutting, demolition, loading and transportation processes are fully mechanized. Depending on the work performed by mining machines, they are mainly divided into the following types: mining, soldering, drilling and loading.

Changes in the technical condition and performance of vehicles during operation 1. During operation, deterioration of the technical condition of the vehicle and its failure can be caused by loading of parts, wear, heat, changes in chemical and physical properties. The main reason for the change in the technical condition of the car and its components is the wear of parts due to friction. Friction is a mechanical resistance caused by the movement of the surface of interlocking parts against each other. This is understood as the process of compressing one part against another. Friction can be divided into two types:

1.Vibrating friction - occurs as a result of sliding and vibration of one object on the surface of another.

2.Sliding friction - occurs when a body slides relative to another.

In order to understand the process of corrosion of mechanisms, it is necessary to divide the corrosion into different types, based on the existing laws. For cross-linked pairs, the existing classification teaches the following types of wear: mechanical, molecular mechanical, rust-mechanical, fatigue wear. Mechanical wear is divided into three types: abrasive, plastic deformed, brittle wear. Abrasive abrasion is caused by the friction of sharp-edged and abrasive particles between two surfaces. 'ladi. Fragile wear is caused by friction and plastic deformation of the metal shell on the surface of the interconnected parts, resulting in the crushing of the brittle core at the bottom end. Fragile wear is caused by friction and plastic deformation of the metal shell on the surface of the interconnected parts, resulting in the crushing of the brittle core at the bottom end. Molecular mechanical wear is caused by the surfaces of friction parts sticking together.

The sharp edges of the metal collide with each other as a result of uneven machining of the friction surface of the interconnected parts. As a result of this collision, the particles on the surface split apart, which is called corrosion. Fragile wear is caused by friction and plastic deformation of the metal shell on the surface of the interconnected parts, resulting in the crushing of the brittle core at the bottom end. Molecular mechanical wear is caused by the surfaces of friction parts sticking together.The sharp edges of the metal collide with each other as a result of uneven machining of the friction surface of the interconnected parts. As a result of this collision, the particles on the surface split apart, which is called corrosion.

Improving the structure of cars reduces wear of parts, increases reliability and longevity. The quality of the material, its mechanical and thermal processing, leads to a reduction in wear, prolongation of the life and service life of the car. The use of alloy steels and the use of quality materials in the manufacture of parts increase the resistance

to corrosion, as well as the resistance to dynamic stress and change the fatigue limit.

Echnical characteristics of 6015B bucket

The alloy has only recently been used for its intended purpose. This is partly due to technological difficulties. Alloy alloys were simply burned using traditional steelmaking technology. It is noteworthy that the steels that man first encountered were natural alloy steels. Even before the beginning of the Iron Age, meteoric iron with a nickel content of up to 8.5% was used. Natural alloy steels made from ores rich in alloying elements were also highly valued. The hardness and toughness of Japanese swords are enhanced because they contain molybdenum in their iron content. Etallization is a technological process of forming one or more thin layers of metal on the surface of a product. The thickness of this coating varies from a few parts of a micrometer to 40-50 microns (sometimes up to a few millimeters). There are galvanic, diffusion, vacuum, chemical, gas-thermal, ion-plasma, gas-phase and detonation methods of metallization. In the galvanic method, the metal is electrolytically coated. In this way, almost all metals (zinc, cadmium, nickel, chromium, tin, iron, silver, gold) can be coated on the surface of any conductive material. For example, when the excavator bucket is coated with manganese on the workpiece, its corrosion resistance increases.

Addition of manganese to the internal chemical composition of the metal in excess of 10% increases its corrosion resistance.

Manganese coatings are reddish gray in color and have a melting point of 1260 degrees. High quality semi-gloss manganese coatings are up to 15mm thick, which are coated with manganese in special flooding, especially in manual welding with electrodes.

Manganese phosphate coating

Metal coatings offer black manganese phosphate coatings and dark gray manganese phosphate coatings (type M) used for corrosion protection, fire retardant and lubrication. Among the many phosphate coatings available, manganese phosphate coatings were the most difficult, but this increases the corrosion and corrosion resistance of the metals. Compared to zinc phosphate coatings, manganese phosphate coatings have a longer lifespan. These coatings are applied only by immersion. Guides for manganese phosphate include the manufacture of excavator buckets, bearings, gaskets, fasteners, and other common industrial products. Manganese phosphate coating is especially useful in projects that require displacement of parts such as engines and transmission systems. Alloying metals operating under operating conditions with manganese gives a high efficiency of coating.

References:

1.This article uses data from the National Encyclopedia of Uzbekistan (2000-2005).

2.Mirboboyev V. A., Vasilyev G. P., Technology of metals, T., 1971; Turakhonov AS, Metal technology, T., 1974.

3.O'zME. The first volume. Tashkent, 2000

4.https: //vaqt.ucoz.com/

5.https: //www.metcoat.com/phosphate-coatings.htm