

FABRICATION OF BIMETALLIC ELECTRICAL CONTACTS FOR THE ANODE GROUNDERS BY THE METHOD OF EXPLOSION WELDING

Description

The pipe-line transport systems (of gas pipe-line and oil pipe-line) are mainly in direct contact with the earth. And the earth is ideal environment for corrosion. For anti-corrosion protection cathode stations are used. The main unit of cathode station is anode grounder. It is a graphitized carbon pipe to which by a steel nut is fixed a copper or aluminum electric conductor. The second end of this conductor is connected again by a steel nut to a protected object. Since such a contact is mechanic the contact surface is open for the aggressive environment, they suffer from intensive corrosion and obey to a frequent change that increases the cost of material, demands an additional working hand and other costs for repair work and together with this spoils the protection quality.

The group of scientists from the G.Tsulukidze Mining Institute proposed to change mechanic contacts by bimetallic ones and developed technology for fabrication of Bimetallic Electrical Contacts by the Method of Explosion Welding.

Innovative aspect and Main Advantages

The uniqueness of the approach is in exclusion of such mechanic contacts and in their change with one solid part that will be manufactured by the welding of different kind materials linked together.

The offered production as well as the technology of its fabrication differs radically from the existing.

The proposed technology is energy-saving (enables to save 80 % of the electric power), environmentally friendly, cost effective and competitive. The reliability of new technology was tested during joint research activities by group of scientists from G.Tsulukidze Mining Institute and Georgian Gas Corporation.

The bimetallic electrocontacts obtained by Explosion Welding are 2-4 times low in cost price, than obtained by other technologies (plasma, detonative or heating technology). Our electrocontacts are of ideal electroconductivity, a transitive zone and physico-mechanical properties of this zone.

Areas of Application

The bimetallic articles are used for protection from corrosion of such pipeline transport systems and such underground communications of urban purpose, also by electrical contacts in connecting places of the railway transport track economy electrical contacts and of high voltage transfer lines.

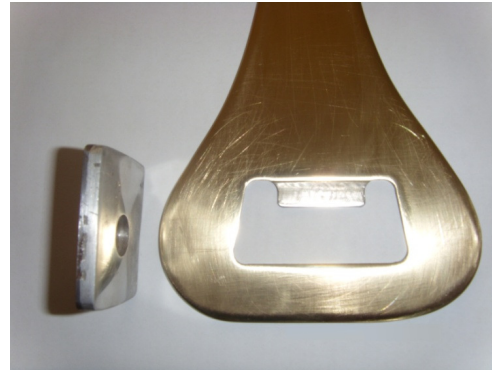


Fig.1. Bimetallic samples

Stage of Development

The production in form of bimetallic contacts is ready for distribution and sale in world market. Patent is in an execution stage.

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