## Bagrova V. A. TECHNOLOGY PERFECTION SURFACING STAMPS SPARINGLY ALLOYED WEARPROOF STEELS OF SYSTEM CR-MN-TI-SI

The researches directed on decrease power- and resource costs at regenerative surfacing the processing tool and simultaneous increase of its reliability and durability, became especially actual recently.

For increase of wear resistance of the metal working in the conditions of intensive wear process, in structure deposited layers it is desirable to have presence of carbides (WC, TiC, NbC, VC, MoC). Formation carbide phases (TiC) in deposited metal in probably various ways - endogenous (МеС) and exogenous (Ме+С) [48, 54, 90].

Application exogenous promotes a way increase in internal warmth both a welding bath, and metal in the course of crystallisation. Pauperisation crystallising melt carbon owing to carbide formation changes temperatures martensitic transformations and, possibly, propensity weld metal to formation crystallization cracks. Considerable influence on wear resistance renders distribution carbide phases in metal.

Process of allocation of carbides taking into account diffusion consists of following stages:

1) diffusion of atoms of the carbon which is in grains in supersaturated a condition on borders of grains;

2) Formation and growth of carbides on borders of grains as a result of reaction of interaction of carbon with the titan;

3) Chrome diffusion to atoms of carbon, untied in carbides of the titan.

In investigated steels with the maintenance of carbon of 2-2,5 %, the titan - 3,5-6,2 %, dissolved in metal melt, carbon forms carbides with chrome and the titan, having lower molar free energy in comparison with iron and manganese carbides.

Distribution of carbides in weld metal for various variants mechanised surfacing is investigated. As a result X-ray diffraction the analysis in investigated alloys following phases have been revealed: TiC and (Fe, Cr)23C6.

The analysis of distribution of carbides Glagolev's method [61] has shown that at surfacing by a powder wire with giving of the disconnected additive more uniform distribution of carbides in comparison with surfacing under a ceramic gumboil is fixed. Surfacing with a powder wire with carbides of the titan in шихте without the disconnected additive also provides uniform distribution of carbides on seam section, but for reception of the set chemical compound of metal drawing in comparison with surfacing with the disconnected additive is required 3 … 4-layer.

The interrelation between formation of phase structure and way of introduction of a strengthening phase is established. It is shown that at surfacing powder wires with the disconnected additive and exogenous input of carbides TiC uniform distribution of this phase on volume deposited metal is provided.