

ABSTRACT

Work capacity: p. – 91, Fig. – 20, Table. – 11, References – 44.

This work presents an analysis of the current state of development of methods for the alloy system WC-W₂C (5%Mo). The influence of the structure and properties of the alloy.

Purpose of work is research the influence of different methods for the structure and mechanical properties of the alloy system WC-W₂C (5%Mo).

Methods receiving :

- a) melting in the furnace resistance;
- b) electron beam melting;
- c) spark plasma sintering;
- d) centrifugal spraying.

It is established that with increasing cooling rate varies as the phase composition and content of phase components - reduced by 15% the proportion of carbide molybdenum Mo₂C and a 10% share of tungsten carbide and increasing to 25% the proportion semicarbide tungsten W₂C, and with the greatest cooling rate of 10⁵ grad/ sec phase molybdenum carbide and tungsten carbide disappear, forming a complex tungsten-molybdenum carbide (Mo,W)₂C, due to lack of carbon in the crystallization zone at a given cooling rate.

The method of X-ray analysis evaluated the stress-strain state phase component alloy systems WC-W₂C (5% Mo). Found that tungsten matrix phase semicarbide W₂C is in a compressed state and phase inclusions, that phase of molybdenum carbide and tungsten carbide Mo₂C WC - to spread.

Keywords: TUNGSTEN CARBIDE, RELIT, CENTRIFUGAL SPRAYING, ELECTRON BEAM MELTING, SPARK PLASMA SINTERING, MELTING IN THE FURNACE RESISTANCE