

ABSTRACT

Working capacity: pages – 96, pictures – 32, tables - 10, references to published data - 45.

In the research work described obtaining solders based chemical compound Cu_3P mode sealing rolling.

The aim is to determine the effect of rolling and soldering properties for copper-phosphorous solders.

Research methods:

- 1) metallographic analysis (Meiji Tecno MT-8500);
- 2) computer analysis determining wettability (SeoimageLab v 1.0);
- 3) physical method of determination (Electronic microhardness);
- 4) study soldering using an electric current of high power (current-902);
- 5) method for determining the chemical composition (electron microscope analyzer).

The object of study is the relationship between the characteristics of metallographic structures and modes microhardness soldering (VK3 and 12X18H10T) and brazed seam structure.

We used low energy methods of making solders. The change of the microstructure after brazing determined microhardness, defined wettability. Established that the molten solder is less than microhardness rolled. The electron structure shown washer influence on the formation of pores in the solder. Established as the chemical composition of the solder and samples VK3 and 12X18H10T.

Solder wettability VK3 is $17,4^\circ - 26,4$, for 12X18H10T $-48,4^\circ - 49,7$.

Keywords: copper phosphide powder, rolling, copper-phosphorus solder, soldering, wettability, microhardness.