

The method belongs to the field of powder metallurgy and can be used to produce soft magnetic composites of any shape and size based on powders of nanocrystalline alloys, in particular an alloy of the FeCuNbSiB type. The claimed method is carried out by annealing an amorphous alloy strip with the composition $\text{Fe}_{73}\text{Cu}_1\text{Nb}_3\text{Si}_{16}\text{B}_7$, followed by separation, during the separation process, a fraction of the alloy powder with a particle size of 70-160 μm , followed by annealing of the selected alloy powder fraction in a nitrogen atmosphere at a temperature of 540-560 °C for 1 hour, and vibrating compaction of the green bodies for 0.08-0.17 hours, at room temperature and atmospheric pressure, formed from a homogeneous composite mixture containing $\text{Fe}_{73}\text{Cu}_1\text{Nb}_3\text{Si}_{16}\text{B}_7$ alloy powder, an inorganic binder, and a solvent; placing the processed green bodies in a drying oven evacuated to a pressure of $2 \cdot 10^{-2}$ Pa, followed by holding for 0.05-0.08 hours; increasing the pressure in the drying oven to atmospheric pressure, followed by holding the treated blanks in it for 48 hours, wherein Portland cement is used as the inorganic binder in an amount of 10-30 mass. %, and water is used as the solvent. This method reduces demagnetization losses and increases the compressive strength of the soft magnetic composite.