An important parameter that affects the protection from wear and tear is the geometric structure of the abrasive causing the destruction. The equivalent diameter of the particles of the primary influence on protection from wear and tear must be greater than the width of the particle of the crushed abrasive. Here also belongs the requirement for the distribution of the particles inside the matrix was more uniform and dense. The use of solid materials gives this possibility only in the certain circumstances, therefore, it is necessary to use pseudoalloys. Pseudoalloys can be obtained by means of thermomechanical processing of the conventional layers deposited by means of spraying. The particles of the solid material charged with kinetic energy are applied to the heated layers, and they penetrate into inside. Under the influence of the heat energy inside the layers suitable for this, the additional reaction between the substrate and the layer takes place, thus improving the adhesion of the layers. The appropriate regulations were developed, and the reproducible stratification appeared caused by spraying, that is pseudoalloys. A positive consequence of the inclusion of the particles of a solid ceramic material into the spayed layer is the emergence of the current when compressed. The result of the research of the parameters are the optimal performance indexes, optimization criterion served as an indicator of the intensity of the wear. Manufactured pseudoalloys underwent checking in terms of spray wear. The study of spray wear was carried out at the temperatures up to 750 °C and speed load amounted to 37.5 m/s. The silica sand fractions +150-212 μm was used as an abrasive. As the covering material the alloys based on aluminum were used. In the places of transition to the substrate the multiphase alloys of the system Fe-Al are formed. It is advisable to use layers with a high iron content to prevent the loose and destruction.

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