

## INCREASING OF MACHINE DETAILS' WEAR RESISTANCE BY MEANS OF REGULAR MICRORELIEF APPLICATION

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The subject of the article is the formation of regular microrelief on different working surfaces.

The article is concerned to the following problems:

- a) to find out the possibilities of achieving the best wear resistance of friction surfaces;
- b) to find out the possibilities of increasing the wear resistance of friction surfaces by means of regular microrelief application.

It tells about the theory of parameters of microgeometry calculation and their technological support.

The problem of extending the useful life of machines and equipments is one of the most important tasks. By now more than 20 milliard tons of iron have been smelted. The whole world metal fund used in constructions, machines and equipments is 6 milliard tons. Thus 14 milliard tons of worn-out parts and machines are "lost" as a result of corrosion and wear in the process of exploitation. The average time of using steel articles is from several hours to 15 years.

At present we know the following methods of increasing wear resistance and extending the useful life of machines: sound design; choice of materials; increasing the wear resistance by thermal and chemicothermal treatment; hardfacing; plastic deformation; special methods.

Vibration rolling refers to special methods. The features of this process are following: independent regulation of roughness width and height as opposed to abrasive and edge cutting machining; independent regulation of the direction of grooves or ridges of the new microrelief; formation of microrelief radius of peaks and valleys much more than with all known methods of treatment.

The state standard specification 24773-81 (Surfaces with regular microshape. Classification, parameters and characteristics) resulted from a large body of Schneider's research.

The vibration rolling is used to diametrical surface treatment. If plain surface treated with tool makes oscillation movement and billet makes translation movement. Quantity values of vibration rolling process vary with the relative movement speed of billet and tool.

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