

TECHNOLOGY OF DETONATION APPLICATION OF NANOSTRUCTURED COATINGS



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OBJECTIVES

This technology is designed for increasing tools lifespan, heavily loaded parts of components and mechanisms under the influence of abrasive media, high pressures and temperatures. This technology can be used to protect industrial equipment working in contact with molten rubber, plastics, glue, etc.

LEGAL PROTECTION

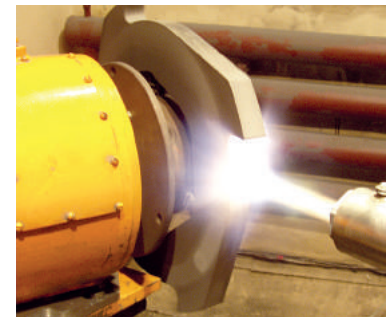
Patent of the Russian Federation for invention N° 2542206 - Method of detonation coatings application

AREAS OF USE

Mechanical Engineering, Radio Electronics, Electrical Engineering, Military Industry

IMPLEMENTATION

The technology was used at JSC “Volgaburmash” for hardening cutters of three-roller and diamond drill bits.



The coating is applied by the detonation gun. During the process the gas stream warms up and partially melts the elements of the powder put into the barrel and throws them at high speed onto the surface of the workpiece installed in front of the gun barrel. When the elements collide with the surface a micro-welding occurs, and the powder is firmly attached to the workpiece at the molecular level. The required thickness of the coating is achieved by a series of successive shots. For machining large surfaces the part is moved in front of the barrel with the help of a manipulator according to the program.



PECULIARITIES

This technology is supposed to be a breakthrough as the method for coating from a high-density powder material onto a metal workpiece.



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CORE COMPETENCIES

#NANOSTRUCTURAL COATINGS, #DETONATION GUN