



# Techno-Economic Justification of Reparatory Hard Facing of Various Working Parts of Mechanical Systems

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## ABSTRACT

Research in the field of hard-facing of various parts mechanical systems' are being done for technical and techno-economic reasons. The reasons for introducing the new reparation technologies by hard-facing are numerous: three quarters of all the mechanical parts of engineering could be regenerated or manufactured by hard facing; the working life of the repaired part reaches or even exceeds the working life of a new part, while the working life of the hard faced manufactured part surpasses several times the working life of the new part manufactured by some other technology. Large number of damaged and, frequently even broken parts, cause terminations of the working process. Thus, due to difficulties in procurement of new, mainly imported parts, the alternative solution must be applied.

It is shown that the a proper choice of the hard-facing technology is related to the complex procedure of checking the quality of the hard faced layer, what indicates that the reparatory operations could be performed only in specialized regeneration workshops, which are furnished with adequate equipment and corresponding expert and skilled staff. The estimated net benefit for the analyzed parts is exceptionally high, regardless of the fact that the additional external and internal effects have not been quantified.

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## 1. INTRODUCTION

The reasons for the introduction of technology production and repair hard facing are numerous: research indicates that three-quarters of all mechanical parts can be regenerated and production hard faced, service life of repaired part reaches or exceeds the service life of the new part, service life of new in production hard faced part exceeds several

times the new part which was not hard faced, low cost repairs, reduced period of termination due to purchasing a new part, which increase productivity, low financing costs and cost of storage [1-4]. A large number of damaged, and often broken, parts cause termination of the process, and the difficulties in the procurement of new, mostly imported parts, must use an alternative such as hard facing-regeneration. In addition, the maintenance of the technical









