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Influence of cutting parameters on the surface quality of machined metal “Applied materials: St70-2 and Cf45”

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Abstract : The quality of the machined parts is generally determined by the errors of shape and degree of finishing of the surface of the items during their machining [1]. The state surface of a machined workpiece plays an important role in the wear resistance, ductility, and fatigue of the piece. This surface state therefore cannot be neglected in the design phase of the work [2]. A machined surface is the result of the geometric and kinematic reproduction of the shape and the trajectory of the tip of the tool on the machined material [5]. In practice, several factors such as the nature of the material being machined, the cutting conditions, the geometry of the tool, the vibration of the machine tool during machining, the influence on chip formation and thus the roughness of the surface produced [7]. This complex system requires explaining the influence of each machining parameter on the state surface of the finished product in order to master the machining process and to meet the requirement of dimensional accuracy of the parts produced. Our work is to investigate variation of the roughness of the machined feature cutting parameters selected when cutting metal parts

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