ABSTRACT

Surface roughness is a configuration irregularity of surface work piece as result of machinery process. Level of value surface roughness influenced by various factor for example: type of machinery process, cutting parameter, and usage of real correct coolant dilution of type goodness and also comparison of composition between dilution coolant of itself with water. This matter require to be paid attention to surface roughness and yielded product quality as according to desire.

To know influence of cutting parameter and comparison of coolant dilution composition of surface roughness, hence done by research by using work piece become steel ST 60 have diameter to 32 mm at end mill process with vertical milling machine. Machinery process conducted by combining cutting speed \( V_c = 7.54 \text{m/min, 11.304 m/min, 21.478 m/min} \), feeding speed \( V_f = 96 \text{ mm/min, 125 mm/min, 190 mm/min} \), and comparison of coolant dilution composition with water \( 1:10, 1:20, 1:30 \). Afterwards, surface roughness of work piece measured by using surftest twice to every measurement result and surface analysed with variant analysis and graph.

From result of conducted analysis and research, to be known that surface roughness downhill with the increasing of cutting speed, and also decreasing of feeding speed. While the lowest value of surface roughness have had by using cutting speed equal to 21.478 m/min, feeding speed equal to 96 mm/min, and coolant dilution composition with water equal to 1:20.