Medium density fibreboard (MDF) is an engineered wood product which is preferred to solid wood and other wood based composites in many applications due to certain comparative advantages especially in furniture manufacturing. Face milling is the machining operation frequently used in engraving parts of MDF and in furniture manufacture. This study focused on machining parameters which are related to the surface roughness of the pocket milled MDF routed by a CNC machine. The effects of the spindle speed, feed rate, stepover and depth of cut were investigated on the surface roughness of the MDF panels. Surface parameters used to evaluate surface quality in this study are roughness average (Ra), mean peak-to-valley height (Rz) and Root-mean-square (Rq). The results demonstrated that the surface roughness decreases with increasing spindle speed and increases with increasing stepover, feed rate and depth of cut. The milling tests showed the important role spindle speed plays on the evolution of the surface roughness as a function of material removal rate (MRR). The effect of factors on surface roughness has been illustrated.

KEYWORDS: Groove milling, medium density fibreboard, surface roughness, wood machining.