INTRODUCTION

Components made of wood plastic composites are used in exterior application, where in comparison with nature wood composite do not require further maintenance (predetermine to long-term usage for its physical and mechanical properties). Nowadays demand on wood plastic composites is with increasing character. For this reason, a better understanding of this composite material in regards to machining and texture of surface is necessary. The paper deals with a comparison of the surface roughness of Wood Plastic Composite with traditional wood (oak) after turning. Presented paper is focused on observation changes of average maximum height Rz with change of speed of feeds f and speed of rotations n1.

MEASURING SET UP

Qualitative evaluation of surface roughness (Rz – maximal height of the profile) was realized by standard STN ISO 4287. Measurement was realized with MITUTOYO SJ-400 (measuring length l=4 mm). Roughness was measured in three independent areas with repeatability 15%. Statistical confirmation of extreme deviation was evaluated by Grubbs test with accuracy 0.05. Subsequently was calculated arithmetical averages in individual areas and evaluated summary arithmetical average (using in graphs).

CONCLUSIONS

Quality of surface after machining is theoretically directly dependent on combination of tool tip radius and feed rate. Real values of characteristic Rz are significantly higher than predicted (despite the fact that, for all three comparing courses is increasing tendency). WPC samples were cut in two quadrants before experimental measuring what cause differences in values of surface roughness parameter Rz and also variant material properties in various areas, which is resulting of inhomogeneity of the material. Confirmation of statement is demonstrated by mechanical test – tensile and three point bend test. Values of tensile strains are different of less than 10 MPa. Considering that experimental samples were cut from center of the extruded profile in direction of extruding can be state that differences on the edges of the profile would be differences in mechanical properties significantly differ. Wood plastic composite materials are machinable with cutting tools intended for wood materials with maintaining similar geometry.