

Physical properties of nanocomposites produced by using speloite nanofibers

Emre Birinci^{1,*}, Türker Güleç², Nadir Ayrılmış³, Alperen Kaymakçı⁴

¹ Kastamonu University, Department of Forestry, Araç R.V. Vocational School, Kastamonu, Turkey

² Artvin Çoruh University, Forest Industrial Engineering, Faculty of Forestry, Artvin, Turkey

³ İstanbul University, Forest Industrial Engineering, Faculty of Forestry, İstanbul, Turkey

⁴ Kastamonu University, Forest Industrial Engineering, Faculty of Forestry, Kastamonu, Turkey

* Corresponding author: ebirinci@kastamonu.edu.tr

Abstract: Effect of speloite nanofibers on physical properties of wood polymer nanocomposites was investigated. To meet this objective, pine wood flour, polypropylene with and without coupling agent (maleic anhydride grafted polypropylene), and speloite nanofibers (0, 1, 3, 5wt%) were compounded in a twin screw co-rotating extruder. Water absorption and thickness swelling properties of the nanocomposites were investigated. Water absorption and thickness swelling rates of the wood polymer nanocomposites improved with increasing content of the speloite nanofiber (from 1 to 5 wt%) and maleic anhydride grafted polypropylene (3 wt%).

Keywords: Speloite nanofiber, Nanocomposites, Physical properties