

Astract

This work was carried out to evaluate the strength of screw joints of wood plastic composites made by extrusion-flat press method. Moreover, the withdrawal strength of screw and lateral strength were influenced by the content of mineral fillers while the main goal was to achieve a strong connection in the wood plastic composite in a variety of applications. Polypropylene as matrix, wood flour (Russian wood) as a cellulosic filler, calcium carbonate, mica and talc as mineral filler and maleic anhydride bonded with polypropylene (MAPP) as a coupling agent were used to fabricate the composites. The content of mineral fillers at three levels (0, 10 and 20) was selected based on the total weight of the sample. Two-wood plastic members were fastening with one common fastener in this industry (self-tapping screw, screws and wood screws). After that the withdrawal perpendicular strength of screw and the lateral shear force of the joints were evaluated by three types of screws. Data analysis was done using SPSS software. Generally, in this study, the joints made of composite containing 10% talc and self-tapping screw had the highest withdrawal strength of screw and lateral resistance. It was also found that the lateral resistance of the joints decreased as a result of an increase in the amount of mineral filler. Additionally, in the use of screw type, it is proven that the self-tapping screw makes more tight fittings than other screws.

Keywords: Wood plastic composites, Mineral filler, Screw, Two members joint



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Assessment of the joint resistant in extrusion–flat pressed
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