

MECHANICAL PERFORMANCE OF BASALT BASED MINERAL FIBRE REINFORCED PLYWOOD

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Plywood as considered to be one of the oldest wood-based composite material, has been used for interior products and for structural construction along with its presence in the markets of transportation and sports equipment etc. [1]. The demand for wood and wood-based products has risen, Particle boards account for about 40% of the wood-based products, followed sharply by plywood and fibreboards [2]. Literature studies indicate that lay up scheme is major factor that determines the mechanical properties of the products [3]. In the recent years, basalt/mineral fibres have gained major interest due to its economic and performance efficiency compared to traditional fibres. The research progress on basalt fibres started in the 1980s, a few recent years has seen a wide range of research studies conducted the characteristic properties as a reinforcement material. One approach to increase the effective use of wood and wood composites is reinforcement. This research aims at understanding the effect of fibre layup with different TEX values and spaced apart, along with multiple fibre layers between the veneer plies. The preliminary results fig.1 indicates an increase in the shear test sample according to EN 314-1 with fibres spaced at 5mm from each other also the samples indicate good adhesion with the glue (Phenol Formldehyde). The initial shears results also indicate that fibres with 1200 TEX value spaced at 5mm apart perform better than the fibres that are spaced at 15mm.

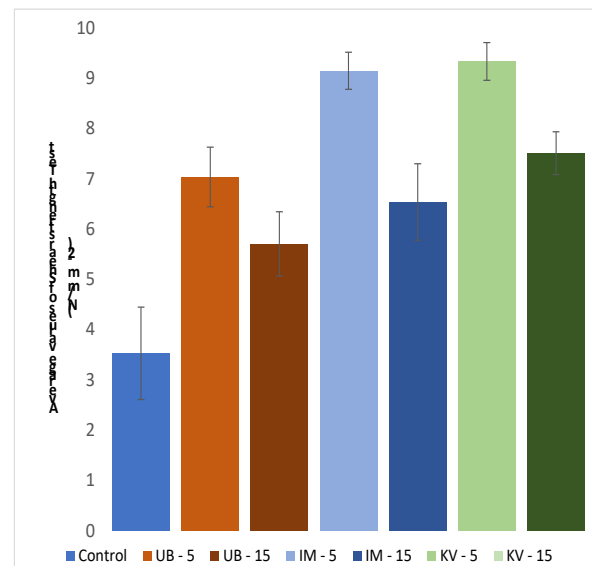


Fig.1 Results of shear strength test

References

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