USE OF SAWDUST AS A CEILING-BOARD MATERIAL

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Abstract: Waste sawdust is abundantly available, and their mode of disposal causes a great menace to the environment. The use of ceiling boards made of sawdust can be beneficial as it eliminates the health hazard that asbestos sheets present. Sawdust of Teak tree (Tectona) and a commercially available latex binder were used as the raw materials. The ceiling board panels were made with four mixes, with a constant weight percentage of binder and sawdust, with a specific particle size in each mix. The used average particle size ranges are 10-12 cm, 7-10 cm, 5-7 cm and 3-5 cm for the four mixes. The variable of this research is the particle size range of the sawdust. Properties such as density, water absorption, thermal conductivity, compressive strength and sound insulation of the test panels were determined. The density of the sample panels is between 0.207 and 0.234 g/cm3. The samples have thermal conductivity and percent sound insulation in between 0.1768-0.1612 W/mK and 12.81-20.51%, respectively. The compressive strength of the panels is in between 0.2488 and 0.2622 N/mm2, and no samples were fractured. However, the maximum water absorption of the panels is 51.38%. Except for water absorption, the sample panels showed a good potential as ceiling boards. As per the outcomes, the preferred sawdust particle size range is 10-12 cm.

Keywords: Ceiling Sheets, Environmentally Friendly, Particle Size Range, Physical Properties.