THERMAL, SOUND AND RADIATION PROPERTIES OF INSULATION MATERIALS MADE WITH SAWDUST, WHEAT, SUNFLOWER, ASHES OF CORN STALKS AND EGG WHITE

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ABSTRACT

Rapid decrease in energy sources led to extensive research on alternative energy generation methods all over the world, including Turkey. In this context, insulation plays an important role in energy saving. Energy loss can be minimized with thermal insulation technology. Insulation materials produced with proper methods can be more durable, healthier and more economical. Because heat and sound insulation is crucial for the dwellings, demand for insulation products will grow largely. The aim of this research is to produce a material, which is resistant to radiation, with organic ashes, perlite, egg whites, egg whites, and plaster and epoxy as binders acquired by burning tons of sawdust, wheat stalks, sunflower stalks and corn stalks contained in wood warehouses of our country. In this sense, sawdust, organic ashes in varying proportions, perlite, egg, egg white and epoxy or plaster shell as binders were used producing insulation material. Obtained mix was placed into 4×16×16 cm molds. Ultrasonic sound velocity, thermal insulation coefficient and radiation absorption coefficients of the specimens were found. It was confirmed that specimens having more sawdust, egg shell and corn ash are better against radiation. Moreover, their Ultrasonic sound velocity and thermal insulation coefficient were obtained lower.

Keywords: Sawdust, corn ash, egg white and shell, heat, sound and radiation insulation.