

**ENGINEERING PROPERTIES OF COMPOSITES CONTAINING
POLYURETHANE, WHEAT STALK AND CORN STALK ASH, PEANUT SHELL
ASH, FLY ASH, SAWDUST, PERLITE, BARITE AND GYPSUM**

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ABSTRACT

In this study, engineering properties of composites containing polyurethane, wheat stalk and corn stalk ash, peanut shell ash, fly ash, sawdust, perlite, barite and gypsum are investigated. Radiation absorption, unit weights, ultrasonic pulse velocities, thermal insulation coefficients of the specimens produced in standard 16x16x4 cm molds were found. All tests were found to be in accordance with standards. Also, it was found out that specimen no. 3 has the lowest thermal insulation coefficient. It was found out that specimens containing more sawdust have higher unit weight. Specimens with high thermal insulation coefficient and unit weight were found to have low capacity of ultrasonic sound absorption. This case was explained with spaceless structure of materials. It was found that specimen no.3 with the lowest ultrasonic pulse velocity has the lowest thermal insulation coefficient. Unit weight for the same specimen was found to be under average. It was found that specimens containing peanut shell ash have higher radiation absorption rates. This study showed that wheat stalks, corn stalks and peanut shells can be recycled for economy by burning process in appropriate environment. Also, this composite can protect people from negative effects of radiation when used in medical buildings and X-ray rooms.

Keywords: Polyurethane, Wheat Stalk Ash, Corn Stalk Ash, Fly Ash, Peanut Shell Ash.