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Thermal performance enhancement of eco-friendly bricks incorporating agro-wastes

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ABSTRACT

Thermal conductivity of bricks is an important parameter as it directly influences the heat losses from buildings and thus increases the energy consumption. The main focus of this study was to develop thermally efficient burnt clay bricks incorporating agricultural wastes on industrial scale. For this purpose, agricultural wastes (sugarcane bagasse ash (SBA) and rice husk ash (RHA)) were acquired from a sugar industry and a brick kiln. Burnt clay bricks were manufactured in an industrial kiln by incorporating SBA and RHA in various dosages (i.e. 5%, 10% and 15%) by clay weight. Physico-mechanical and thermal properties of brick specimens incorporating agricultural wastes were studied. It was observed that lighter weight bricks can be produced using agricultural wastes, which are helpful in reducing both the cost and overall weight of the structure. Addition of agricultural wastes in burnt clay bricks resulted into reduced compressive

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