

عنوان مقاله:

The Effects of Raw Rice Husk and Rice Husk Ash on the Strength and Durability of Adobe Bricks

محل انتشار:

ژورنال مهندسی عمران، دوره 4، شماره 4 (سال: 1397)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Adobe houses are an important form of housing among many low income communities in developing countries. Unfortunately one drawback of adobe bricks is that their strength and durability against water are poor, which can lead to material deterioration and structural collapse. To improve the properties of adobe, the soil used to build bricks is sometimes stabilized with either natural or artificial additives. Rice husk is a natural additive commonly used in both raw and ash form as a stabilizer for several masonry materials due to its pozzolanic property. This study investigates and compares the influence of Raw Rice Husk (RRH) and heap burned Rice Husk Ash (RHA) as stabilizers on the compressive strength, stability, water absorption and volumetric shrinkage of adobe specimens. Whether the stabilizer was RRH or RHA, these materials were used in the proportion of 2% of dry weight of soil. Results showed significantly improved performance for the specimens containing RRH, but none for the RHA. This suggests that the excessive burning temperature in heap reduced the cementation properties of RHA. Based on these results, the study concludes that the application of raw rice husk as a stabilizer is more effective than heap burned rice husk ash for the construction of local adobe houses in areas affected by flood and rain.

کلمات کلیدی:

Adobe Brick; Soil Stabilization; RRH; RHA

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