**SUITABILITY OF BURNT BRICKS AS COARSE AGGREGATES IN CONCRETE**

**ABSTRACT**

The research was conducted to study the suitability of crushed over burnt bricks as alternative coarse aggregates for concrete production. Tests were carried out to determine the physical properties of the crushed over burnt bricks aggregates. Values of 22.8%, 28.2% and 4.4% were obtained for aggregate crushing value, aggregate impact value and aggregate water absorption respectively. The concrete mixes were prepared using crushed over burnt bricks as coarse aggregates at water – cement ratios of 0.40, 0.50, 0.55 and 0.60. Cubes of concrete were prepared and tested to study the compressive strength. The results were compared with concrete made with river wash gravel as coarse aggregates which at present is the only coarse aggregate in Makurdi, Nigeria and its environs. The results indicate that crushed over burnt bricks – sand concrete is medium light weight concrete having a density between 2000-2200 kg/m3 and compressive strength of up to 29.5 N/mm2 compared to grave l – sand concrete having density between 2300-2400 kg/m3 and compressive strength of up to 30.8 N/mm2. It can be concluded that by reducing the water-cement ratio from 0.60 to 0.40 the compressive strength of crushed over burnt bricks – sand concrete and gravel – sand concrete increase by more than 30%. Use of broken over burnt bricks as coarse aggregate for structural concrete is recommended when natural aggregate is not easily available, high strength of concrete is not required and the bearing capacity of the soil is low.