

HIGH CARBON PULVERIZED FUEL ASH AS A FUEL ADDITIVE IN CLAY BRICKS

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KEYWORDS: High carbon flyash; flyash as a solid fuel additive in clay bricks; variability in high carbon content flyash; use of carbonaceous wastes in clay brick manufacture.

ABSTRACT

The clay brick industry is now facing an unprecedented rise in fuel costs. In response, wide-ranging actions to maximize energy-efficiency are being implemented. One approach already familiar to the industry is currently receiving renewed consideration. This involves adding carbonaceous wastes to the bricks prior to their firing. Its subsequent combustion releases supplementary heat into the kiln, thereby improving fuel efficiency. A number of carbonaceous wastes are established in this role and flyash has always been regarded as an obvious choice. Nevertheless, its wide-scale adoption has not materialized. This is mainly because the most important criteria for success is the need for a consistent carbon content, which flyash can seldom meet

However, a source of high-carbon flyash potentially meeting this prerequisite has recently been investigated at a RWE Npower power station in the UK. It arises from the processing of run-of-station flyash to meet BS EN 450 requirements for use in concrete. To achieve this, a processing-plant employing electrostatic separation technology has been installed. This removes the unwanted high-carbon fraction, which is then stockpiled. The assessment of its potential use as a fuel additive in brickmaking is presented in this paper.

The report commences with a description of the sampling and analysis of the stockpile to establish carbon values and consistency. The making, firing and testing of laboratory briquettes incorporating this material is then described and the results compared with another carbonaceous waste currently used by a collaborating brick manufacturer. Interim findings confirm that the use of this type of flyash offers attractive benefits in brick manufacturing.

Submitted for consideration in the 2009 World of Coal Ash Conference, May 4-7, 2009.