

# **PROPERTIES OF CONCRETE PRODUCED FROM MULTI-COMPONENT BLENDED CEMENTS**

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## **ABSTRACT**

This paper presents a study on the behavior of concrete produced from multi-component blended cements. These blends were prepared by blending 20 percent to 60 percent Type I cement with the combination of Class C fly ash and clean coal ash. Two percent to four percent sodium sulfate anhydrite was added to the blends as a chemical activator. Tests were conducted on the prepared concrete for strength development, freezing and thawing resistance, resistance to chloride ion penetration, sulfate resistance, and alkali silica reaction. Test results show that concrete produced from blended cements had equivalent or higher strength than the control mixture at all test ages. Blended cements were effective in controlling expansions due to sulfate attack or alkali silica reaction. They also reduced the deterioration of concrete due to freezing and thawing action and greatly increased the resistance to chloride ion penetration into the concrete.