

The Behavior of Coal Combustion Products in Structural Fills - A Case History

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ABSTRACT

Construction of a building pad to support any structure requires proper preparation of the site and a complete determination of the behavior of the on-site materials. Equally important is a thorough characterization of the engineering properties of the material to be used for the fill. When Coal Combustion Products (CCPs) are used in the fill, this characterization should include the identification of the strength, compressibility and the potential for swell. In 1997, a CCP was imported to the site of a shopping center where a number of commercial buildings, roadways and parking lots were to be constructed.

Stabilized spray dryer ash was placed in lifts to depths ranging from two to six feet. Several of the buildings began to exhibit signs of distress during construction or shortly after completion. One structure was closed within a few months of opening. It was then removed and rebuilt on the same site. Construction of other buildings was halted until ground modifications were made. The causes of the observed structural distress and the role played by the coal combustion products are the subject of this paper.