

Constant Rate of Strain Consolidation of Resedimented Class F Fly Ash

**Wei Tu¹, Behrad Zand¹, William E. Wolfe¹, Tarunjit S. Butalia¹,
Mohammad A. Ajlouni²**

¹Department of Civil and Environmental Engineering and Geodetic Science, The Ohio State University, 470 Hitchcock Hall, 2070 Neil Avenue, Columbus, Ohio 43210;

²American Electric Power, One Riverside Plaza 22nd floor, Columbus, OH 43215.

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Abstract: Although the utilization of fly ash has increased over the years, about 70 percent of the fly ash produced each year is continued to be disposed of in ash ponds. Many disposal facilities have been or will soon be filled to their design capacity. As a result, there is an increasing interest to reclaim the existing fly ash pond area as the foundation of new disposal facilities, parking lots or even buildings. In order to determine the settlement of impounded fly ash under design load, constant rate of strain (CRS) consolidation tests were performed on medium-scale resedimented Class F fly ash samples in a modified 5.5 inch diameter triaxial chamber. Compression index (C_c), recompression index (C_r) and the consolidation coefficient (C_v) were evaluated for each CRS test. Two small-scale specimens were trimmed from two CRS samples and reloaded to the maximum consolidation pressure in a standard oedometer to evaluate the coefficient of secondary compression. The values of compression index (C_c) and recompression index (C_r) were found to be consistent and reproducible. The compressibility behavior of the fly ash tested was found to be similar to that of inorganic sandy silt and poorly graded sand. The value of secondary compression coefficient was found to be small.

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