

## **Sustainable materials used as stone column filler: A short review**

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### **ABSTRACT**

Stone columns (also known as granular piles) are one of the methods for soft soil stabilization and typically used to increase bearing capacity and stability of slope.; Apart from decreasing the compressibility of loose and fine graded soils, it also accelerates the consolidation effect by improving the drainage path for pore water pressure dissipation and reduces the liquefaction potential of soils during earthquake event. Stone columns are probably the most "natural" ground treatment method or foundation system in existence to date. The benefit of stone columns is owing to the partial replacement of compressible soil by more competent materials such as stone aggregate, sand and other granular materials. These substitutes also act as reinforcement material, hence increasing overall strength and stiffness of the soft soil. Nowadays, a number of research has been conducted on the behaviour and performance of stone columns with various materials utilized as column filler replacing the normal aggregate. This paper will review extensively on previously conducted research on some of the materials used as stone column backfill materials, its suitability and the effectiveness as a substitute for regular aggregates in soft soil improvement works.

### **KEYWORDS:**

Aggregates; Consolidation; Fillers; Slope stability; Soil liquefaction; Soil mechanics; Soils