Foundations on Geotextile Encased Granular Columns: Overview, Experience, Perspectives

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The Geotextile Encased Columns (GEC) foundation system for embankments and dikes on soft soils was introduced some 20 years ago and is now considered State-of-the-art in Germany and step by step worldwide. The GECs consist of compacted granular fill similar e.g. to common gravel columns with one decisive difference: they are confined in a high-strength woven geotextile “cylinder” (encasement) controlling their behavior. Consequently, they work properly even in extremely soft soils and a wide range of fills incl. of sand can be used. Huge technological and design experience is available; verified design methods exist. The paper focuses due to brevity only on some basics and important aspects of design, installation, optimization and recent research.

![Diagram of GEC system and single cell design method](image)

**Figure 1.** General scheme of the GEC system (left) and “single cell” design method (right).

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**References**

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