# Article information:

Mechanical behavior of fiber-reinforced, chemically stabilized dredged sludge | SpringerLink
<https://link.springer.com/article/10.1007/s10064-019-01580-5>

# Article summary:

1. Dredging and excavation of foundations for riverine and marine structures produce large amounts of dredged materials, which have high natural water content, low strength, high compressibility, and low water permeability.

2. Treatment of dredged sludge by chemical stabilization and physical reinforcement can improve its use as a construction material.

3. Fiber reinforcement has been proven to significantly increase the compressive strength and fracture toughness of soil, but limited literature exists on studies of the mechanical characteristics of fiber-reinforced sludge.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable in terms of its content and sources. It provides an overview of the current state of knowledge regarding the mechanical behavior of fiber-reinforced, chemically stabilized dredged sludge, citing relevant research studies to support its claims. The article does not appear to be biased or one-sided in its reporting; it presents both sides equally by discussing both chemical stabilization and physical reinforcement as methods for improving the properties of dredged sludge. Furthermore, it acknowledges potential risks associated with using stabilized sludge in construction (i.e., high stiffness and brittleness).

However, there are some points that could be further explored in order to make the article more comprehensive. For example, while the article mentions that treatment by chemical stabilization involves adding inorganic materials such as lime or cement to improve physical and mechanical properties, it does not provide any details on how these materials should be used or what their effects are on the properties of dredged sludge. Additionally, while the article discusses laboratory tests that have been performed to characterize the mechanical behavior of fiber-reinforced soils, it does not provide any information on how these tests can be applied to fiber-reinforced sludge specifically. Finally, while the article mentions that discrete fibers can be more randomly distributed in dredged sludge than in soil during mixing due to higher water content, it does not discuss how this affects the mechanical properties of fiber-reinforced sludge compared to those of fiber-reinforced soil.

In conclusion, this article is generally reliable but could benefit from further exploration into certain topics related to treating dredged sludge with chemical stabilization and physical reinforcement for use in construction projects.

# Topics for further research:

* Chemical stabilization of dredged sludge
* Physical reinforcement of dredged sludge
* Effects of inorganic materials on dredged sludge
* Laboratory tests for fiber-reinforced sludge
* Random distribution of fibers in dredged sludge
* Mechanical properties of fiber-reinforced sludge

# Report location:

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