

Review of: "A Study on Alternative Low-Emission Sustainable Soil Stabilization Techniques in General and Combat Military Operations"

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Potential competing interests: No potential competing interests to declare.

1. How does Microbially Induced Calcite Precipitation (MICP) contribute to soil stabilization, and what are its environmental benefits compared to conventional stabilization methods?
3. What are some key advantages of using biopolymers for soil stabilization, and how do they compare to traditional stabilizers like cement in terms of performance and environmental impact?
5. How do MICP, biopolymers, and geopolymers contribute to reducing the carbon footprint in military infrastructure compared to conventional materials like concrete?
7. What challenges are associated with the widespread adoption of MICP, biopolymers, and geopolymers in military operations, and how are researchers addressing these challenges?
8. How do MICP, biopolymers, and geopolymers contribute to rapid deployment and infrastructure resilience in various environmental conditions in military operations?
9. The text discusses the comparative properties of soil stabilization techniques. Explain how the compressive strength, environmental impact, cost-effectiveness, and application speed differ among MICP, biopolymers, geopolymers, and cement.
10. What are some specific environmental benefits of using biopolymers for soil stabilization, and how do these benefits align with military sustainability goals?
11. How have MICP, biopolymers, and geopolymers been successfully used in real-world military infrastructure projects?
12. How do MICP, biopolymers, and geopolymers address challenges such as erosion control, rapid infrastructure deployment, and long-term durability in military operations?
13. What are the potential drawbacks or limitations of using biopolymers for soil stabilization, and how might these be mitigated in practical applications?
14. Considering the comparative properties outlined in Table 2, which soil stabilization technique would you recommend for a military operation in a remote, environmentally sensitive area with limited logistical support, and why?

15. In section 2.3, the discussion about geopolymer was not found to be satisfactory; the mechanism about geopolymerization is missing; below are a few articles for understanding this concept

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