

Review of: "Effective use of Waste Materials: A Case Study of Utilization of Fly Ash in Flexible Pavement Structures"

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Potential competing interests: No potential competing interests to declare.

Introduction:

The introduction provides a clear overview of the significance of fly ash in civil engineering, particularly in the context of thermal power generation waste. It effectively highlights the environmental concerns and financial implications associated with the disposal of fly ash.

Properties of Fly Ash:

The section adequately covers the essential properties of fly ash, including its composition and size distribution.

- Suggestion 1:-However, it would be beneficial to briefly discuss the environmental impact of fly ash, such as its potential for leaching heavy metals into the environment.
- Classes of Fly Ash:The classification of fly ash into Class 'C' and Class 'F' is well explained, along with their respective applications in soil stabilization and concrete
- Suggestion 2- Including a brief discussion on the implications of these classes in terms of environmental regulations or sustainability initiatives could enhance this section.
- Applications of Fly Ash:
 - The discussion on the use of fly ash in concrete and pavement structures is comprehensive and well-supported with relevant literature. It effectively highlights the need for extending research efforts to pavement structures and outlines the specific challenges and opportunities in this area.
 - Suggestion 3- The overview of the use of fly ash sector-wise could enhance the section.
- Use of Fly Ash in Asphalt Concrete:
 - The section provides a detailed review of studies investigating the use of fly ash in asphalt concrete, covering various aspects such as mechanical properties, pavement performance, and long-term durability.

- Suggestion 4- Including a brief summary or comparison table summarizing the key findings of the reviewed studies could aid in synthesizing the information for readers.
- #Use of Fly Ash in Soil Stabilization:
- The discussion on the use of fly ash in soil stabilization is comprehensive and highlights its advantages over traditional stabilizers such as lime and cement.
- Suggestion 5: Including examples or case studies demonstrating successful applications of fly ash in soil stabilization projects could provide practical insights for readers.
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- Suggestion 6: The given article could improve the literature review section.
- <https://doi.org/10.1007/s40996-023-01154-2>
- <https://doi.org/10.1007/s41062-022-00891-z>
- <https://doi.org/10.1016/j.conbuildmat.2023.133641>
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