

# 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.

Dear Chief Editor

Evaluation notes on the article entitled "Effective use of Waste Materials: A Case Study of Utilization of Fly Ash in Flexible Pavement Structures".

1. The authors mentioned that the properties of fly ash depend on coal composition, combustion conditions, emissions control, by-product storage, handling, and climate without any details and references.

**The effect of fly ash on the mentioned properties is not documented or referenced.**

2. The authors focus on the classification of fly ash as per the American Society for Testing and Materials (ASTM C618).

**What about the classification per IS Codes (IS 3812-1981)???**

3. Al-Osta et al. [37] studied the effects of heavy fuel ??? on asphalt concrete as a mineral filler as well as binder replacement. The former was replaced by 50% while the latter was replaced by 3 and 5%. They observed that the use of this type of fly ash improves stiffness and fatigue.

**The above paragraph is not clear and needs rewriting.**

4. In the following paragraph: Wahhab et al. [38] investigated the effects of chemically treated fly ash in asphalt concrete.

**The authors didn't give any information about the chemically treated fly ash, what are the chemicals used, and the treatment procedure.**

5. The review must include information about fly-ash-based geopolymer concrete for paving applications. The literature is rich in updated references on this important topic.

6. The authors wrote: The above review clearly shows that researchers have essentially used **activators** with fly ash for the stabilization of base layers. The content of fly ash and activators has been under 10% and cement has been generally the preferred activator in this case. The use of fly ash, with an activator, has been reported to increase the layer modulus and, consequently, provide an economical and long-lasting design.

**The question is what are the other activators used and what is the role of the activators and the mechanism in**

**improving the mechanical properties of pavement? Give more information including references.**

**7. More updated references should be included.**

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