Review of: "Analytical Study and Amelioration of Plastic Pavement Material Quality"

Noureddine Latroch[1]

1 Centre Universitaire de Relizane

Potential competing interests: No potential competing interests to declare.

Title : Analytical Study and Amelioration of Plastic Pavement Material Quality.

Nfor Clins Wiryikfu1, Atehnji Evaristus Acheleke1, Djomsi Brillant Wembe1, Fokam Bopda Christian1, Kenmeugne Bienvenu1

1 Université de Yaoundé

-

Reviewers' comments:

This paper represents an attempt to produce a plastic pavement from polyethylene terephthalate (PET) and polypropylene (PP). The effect of combining the two plastics mentioned above for the production of a single pavement was studied to determine the impact of their combined binding characteristics as well. Although the research has performed a wide range of engineering properties for the produced mortars, however, the following comments should be taken into consideration in order to accept it for publication.

1. **Abstract :**

At the beginning of the abstract, it should be indicated why the study performed is relevant. In addition, the abstract should be summarized, and the main ideas should be shown clearly, as it is too long (you have to reduce this: *The results showed that this quality could withstand a stress equivalent to 27.6 MPa, which is equivalent to 49 KN and can be used in less-traffic areas according to the standard (EN196/01-ASTMC). 30% PP as a binding material produced a 22.1 MPa strength that can withstand a load of 40 KN, and 25% PET produced a compressive strength of 14.1 MPa that can withstand a load of 22.4KN. The effect of the flexural strength test demonstrated that the flexural strength increases with an increase in plastic quantity in any pavement. The physical properties like density, porosity, and water absorption gave interesting values (1.953 g/cm3, 14.66%, and 3.1%, respectively) for the formulation of 25% PET, making this formulation to be considered among the best that can be adopted for pavements in water-locked areas.).*

1. **Introduction**

-In general, the Introduction section needs amending and careful writing to be in scientific form.

- Mashadi et al……..Need Reference …..
- The references were written in an unsystematic way; they could be presented as (2-6) rather than in the separated form.

1. **Materials and Method**

- Rewrite this section "…….. Polyethylene terephthalate (PET) is composed mainly of water bottles, sweet drinks, and juice bottles with the same basic material properties and density of 1.38-1.39 g/cm3, a melting point of 113 °C–135 °C, and the chemical symbol (C2H4) n. While polypropylene plastics include leads of water bottles and household utensils such as buckets with the same basic material properties and density of 0.90-0.91 g/cm3 [10], as well as a melting temperature of 130°C–175°C and the chemical formula (C3H6) n," in the table contains (size, density, chemical formula, and melting temperature.).
- It is desirable to display photos of the waste after grinding - crushed into particles.
- What about the Link material that was used …
- It would be better to change ***Fine aggregate*** to ***sand***.
- In this section "Here the specimens are prepared by weighing the waste plastic materials and sand [2][3][4][5][6]," … what do you mean by these references?
- My suggestion is to merge this section "**Preparation of the specimens"** within Section "**Laboratory testing method"** .
- It would be better to write the reference for each standard test method.

1. **Results and Discussion**

- It is better to show the results values once without showing them again, as well as with regard to the titles, as it is sufficient to mention them in the titles without the need to write them down on the curve. The curves need to be re-optimized.
- Figures 10 and 11 must be interpreted with comparisons with previous work.
- The section ***Other reference*** should be deleted or integrated in the references section.

Questions

- Before any operation at the laboratory, a granular analysis process must be carried out, as well as the diameter ratio being adjusted.... In your opinion, is it possible to replace natural sand with small dimensions by plastic waste with large dimensions?
- Why did you limit your study to a period of 7 days?
- Why were the characteristics of the samples not taken in the fresh state?
- Taking pictures of samples on a partial scale is very important (SEM/IRTF…)...what are your comments?

-

-