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

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The presented study, entitled "Analytical Study and Amelioration of Plastic Pavement Material Quality," addresses a very interesting and current issue: the recycling of plastic waste. The authors are investigating the possibilities of using plastic waste with measurements of polyethylene terephthalate (PET) and polypropylene (PP) in the field of road and sidewalk construction, i.e., in the construction of road infrastructure. The idea of the study is interesting, although not new, because there is a large amount of successfully built infrastructure in this area in the world. So my first question is: What do the new authors bring to their study compared to already implemented applications and existing scientific studies? What is the research gap that the authors analyze? In the following, I will limit myself to questions and comments that the authors should incorporate into the study in order to increase its quality:

1. First of all, I find Fig. 1 and Fig. 2 completely unnecessary. They depict common knowledge: what plastic waste looks like and what fine sand aggregate looks like. Instead, I would rather know if the authors have a need to define the used plastics' microstructure obtained by electron microscopy. It would certainly make a greater contribution to understanding the construction of materials, and I would proceed in the same way when defining the final "mixed material."

2. Based on what and why the authors chose the ratios between PP and sand listed on p.5 (1:9, 1.5:8.5, 2:8, 2.5:7.5, 3:7, 3.5:6.5, 4:6, 4.5:5.5, and 5:5), and likewise for PET material (1:9, 1.5:8.5, 2:8, 2.5:7.5, 3:7, and 3.5:6.5). Why these specific values?

3. Fig.5 is completely useless compared to Fig.4.

4. Results presented from Fig.16 to Fig.12: each measurement is essentially a random variable, and therefore it is necessary to approach it statistically. That's why I don't think it's right to draw a conclusion from one measurement, from one value. Due to the nature of the measurement as a random variable, it is necessary to process it in a statistical way. It would be good if the authors worked with multiple repeated measurements of the same value and also defined the variability of the measurement and subsequently analyzed the influence of input factors, component ratios, e.g., by analysis of dispersion, statistical significance of differences between groups, e.g., Scheffe's test. I recommend reworking the entire analysis. 5. When defining the properties of materials under mechanical stress, it is also necessary to analyze microstructural changes, the state and appearance of the fracture surfaces... this is missing from my study. Fill in, please.

6. The formal side of the study is also insufficient. I recommend that authors use software other than MS Excel to create graphic outputs, which will allow, among other things, the creation of images in a higher resolution. The same applies to

images. I encourage authors to use higher resolution images.

 I made several comments regarding the analytical part of the study itself, which should be revised, as well as comments on the formal part of the study. I will be glad if the authors do not understand my comments as criticism, but rather as recommendations for the overall improvement of the quality of their manuscript. Therefore, I recommend reworking the study and publishing it in the QEIOS magazine only after further revision.