

CONCRETE COMPOSITION: LOCAL WISDOM OF USING BLACK RICE HUSK ASH TO PROMOTE STICKINESS FOR PASTING AND GROUTING

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ABSTRACT

Concrete is the main material use in building at any scale. The composition of the concrete is the big concern for its usage. Here, the author discusses on the applied of local wisdom on using black rice husk ash to promote stickiness for pasting and grouting.

KEYWORDS: Cement, Concrete, Black Rice Husk Ash, Stickiness.

INTRODUCTION

Concrete is the main material use in building at any scale. The composition of the concrete is the big concern for its usage. In general, the ratio of cement to sand and to water is about 1:2:3 or 1:2:4 for cases with strong (hard) and weak (soft) concrete [1]. Stone is used as an additional material for construction purpose [1]. However, the modification of this ratio depends on the specific purpose of usage. Here, the author discusses on the applied of local wisdom on using black rice husk ash to promote stickiness for pasting and grouting.

CASE OF USING BLACK RICE HUSK ASH

The black rice hush ash is the product from burning of rice husk, which can be derived from

the milling of rice. The rice is the local food of the people in Indochina and is widely grown in Indochina countries. The author examine the local knowledge existed on classical concrete and it is indicated that the use of black rice hush ash can promote the stickiness of the composition. Hence, the author applied this to the general ration from strong concrete to be 1:2:3:1 for the ratio of cement to sand to water and to black rice husk ash.

The general appearance of the concrete after mixing is shown in Figure 1. The primarily test on building aiming at pasting and grouting is shown in Figure 2. It is found that the new cement mixture can be well used and result in good pasting and grouting.

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(A).Concrete mixture



(B).Application test in pasting and grouting

Figure 1. Concrete mixture after the preparation and application test in pasting and grouting

DISCUSSION

The use of concrete is the basic activity in building at any scale. The chemical composition of the concrete is the main determinant of its physical property in building [2]. The present widely used concrete is the already produced composite from the factory. Nevertheless, there are several interesting local wisdoms regarding the concrete composition. In tropical Asia, several natural products have been mentioned as good compositions for concrete preparation. The good example is the black rice husk ash as studied and reported in this article.

In fact, the modification of the chemical composition can well improve the usefulness of the resulted mixture in pasting and grouting. The

present trial report is the use in macroscale. The further application is planned for the modification of the microscale building such as using in dental medicine.

CONFLICT OF INTEREST: None

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