

**USE OF PEANUT SHELL ASH AS ADDITIVE TO CEMENT-BONDED
COMPOSITES WITH WASTE CHICKEN FEATHERS AS REINFORCEMENT**

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BACHELOR OF SCIENCE IN CIVIL ENGINEERING**

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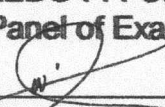
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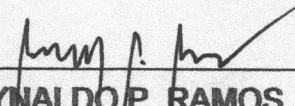
The thesis entitled, "USE OF PEANUT SHELL ASH AS ADDITIVE TO CEMENT-BONDED COMPOSITES WITH WASTE CHICKEN FEATHERS AS REINFORCEMENT", prepared and submitted by ANGELINO, J.W., ARELLANO, E., FERNANDO, C.J., GADON, L.E., MOTIN, K.J., & SOLEDAD, M.D., in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN CIVIL ENGINEERING is hereby accepted for oral examination.


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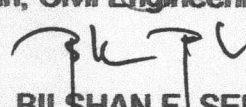

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USE OF WASTE CHICKEN FEATHER AS REINFORMENT IN CEMENT – BONDED COMPOSITES WITH PEANUT SHELL ASH AS ADDITIVE

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ABSTRACT

Chicken feathers, especially here in the province of Romblon are being disregarded and are considered as “wastes” for the majority of the people do not know any use of these at all. They are typically brought into dumpsites or landfills where they can sit for decades to decompose. On the other hand, some studies have proven that these waste materials can be used as potential reinforcement in cement-bonded composites but of limited volume only. The researchers, therefore conducted a study whether peanut shell ash can help in strengthening cement-bonded composites if considered as additive. The study has two main objectives: (1) . To test whether the amount of peanut shell ash added to the cement-bonded composites with waste chicken feathers as reinforcement affects the samples' flexural strength; (2) To test whether the curing of the specimen through different ages affects the flexural strength. The researchers used a brick-shape molder (6" x 2.5" x 2.5") for making the composites. Sand, cut waste chicken feathers, peanut shell ash, and desired amount of water were mixed together with cement as the

binder. After the specimens were formed, each was dried for 24 hours and cured for three different ages. (3, 7 and 14 days). Nine specimens were made for each age. After curing, the specimens were tested for flexural strength determination. The researchers get the average strength for each three specimens. The result of the test showed that the different proportions of waste chicken feathers with peanut shell ash affects the samples' flexural strength; the specimens that have higher amounts of peanut shell ash possess higher flexural strength. The curing of the specimen through different ages affects the flexural strength; the longer the period the specimens were cured, the higher their flexural strengths were. The researchers suggest that one alternative to a prospective additive to cement-bonded composites is the ash produced from peanut shells.