

**SUGARCANE BAGASSE FIBER-REINFORCED INTERLOCKING EARTH  
BLOCKS USING COLD PRODUCTION PROCESS**

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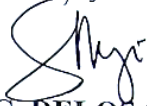
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**BACHELOR OF SCIENCE IN AGRICULTURAL AND  
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(AB Structures and Environment Engineering)**


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## **BIOGRAPHICAL SKETCH**

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AUTHORS

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## ABSTRACT

**ALFONSO, REA VERONICA E. & DELA ROSA, ANGELU NAI B.,**  
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Due to their abundant supply, sugarcane bagasse has drawn particular attention for usage in earthen buildings. Adding fibers to compressed earth blocks can help improve compressive strength, allowing them to withstand more weight and pressure and making them more resistant to cracking and breaking. This study was focused on producing sugarcane bagasse fiber-reinforced interlocking earth blocks using three different types of soil at varying compaction or molding pressure. It includes determining the optimum ratio of sand, clay, cement, and sugarcane bagasse as reinforcement fiber. Notably, the use of 80 parts sand, 16 parts cement and 5 parts fiber at compaction pressure of 4 MPa (A1B2C3) resulted in the best combination in terms of the desirable properties of an interlocking earth block. In terms of compressive strength and bulk density, A1B2C3 is the highest among the treatment combinations. The water absorptivity percentage was found to be highest in sand:clay (A3) while the blocks composed of sand (A1) showed a 0% weight loss and 0% drying shrinkage percentage. Cold production of interlocking earth blocks proved to be of good potential for production of sustainable building materials.

Keywords: sugarcane bagasse; interlocking earth blocks; compressive strength

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