



# 10<sup>th</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

## Use Of Solid Waste in the Cleaner Production of Soil Bricks Cement: Physical and Mechanical Characterization

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### Abstract

The use of ethanol and sugar industry waste and the furniture industry waste in the manufacture of soil-cement bricks is an environmentally sustainable alternative that preserves non-renewable resources and enables the recovery of such waste, instead of simply throwing them in nature. In addition, soil-cement bricks do not go through the cooking process, avoiding deforestation and consequently air pollution. In this paper, we analyzed the influence of the addition of sugarcane bagasse ash and sawdust on the physical and mechanical characteristics of soil-cement brick. The bricks were molded and pressed, using percentages of 35% of sandy and clay soil, cement and sugarcane bagasse ash ranging from 10-30% and 10% of sawdust, all compared to the mass of the resulting mixing soil-cement-recycled. The results showed that the incorporation of recycled waste (sugarcane bagasse ash and sawdust) to the soil-cement brick remained the mechanical properties, enabling cost reduction and production of best quality pressed bricks, becoming thus, an excellent alternative to the use of these materials.

**Keywords:** Brick soil-cement-recycled, Sugarcane bagasse ash, Sawdust, Environmental reuse