

ABSTRACT

STRENGTH ANALYSIS FOR BRICK USING BAGASSE ASH MATERIAL BASED ADDITIVE

By

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Brick is one of the most popular building materials in Indonesia. Brick is a material made of pure clay or with an additional mixture made through several processes and stages. This study aims to make bricks using clay materials with 15% of additional bagasse ash material. The purpose of using bagasse in this research is to use the waste and to improve the quality of bricks. The strength of brick in this study compared to the one of brick, which is designed based on SNI.

Raw material for bricks in this study are clay obtained from Yoso Mulyo Village, Eastern Metro. For compressive strength test, bricks with dimension of 4cm x 4cm size x 4cm, 5cm x 5cm x 5cm, 6cm x 6cm x 6cm, 7cm x 7cm and x 7cm were used. Bricks have been dried for 7 days. After drying, some samples were burned and the other were not burned.

Based on the results of physical test for raw material, USCS classifies soil samples as soil silt with low plasticity and is included in the ML group. The results of compressive strength test for burned bricks generate average maximum compressive strength value that occurs at brick with dimensions of 7cm x 7cm x 7cm with the value of 51,67 kg/cm². This kind of bricks are included in the class of 50 based on SNI of year 1991. The results of compressive strength test for non-burned bricks generate average maximum compressive strength value that occurs at brick with dimensions of 4cm x 4cm x 4cm with the value of 29,95 kg/cm². This kind of bricks are included in the class of 25 based on SNI of year 1991.

Keywords: Bricks, bagasse ash material, compressive strength.