

# Compressive Strength of Light Concrete Bricks with Laterite Material and Foam Agent

## Authors

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## Introduction and Objective

This research intends to improve laterite material as an alternative filler composite mortar bricks, began with analyzing substitution of mortar sand composite, to its concrete mortar composite according to characteristic and compressive strength, as comparison for common bricks building materials had done. This research was pointed, to maximize the bricks compressive strength with laterite addition by experiment method. Samples were made with two variations, which is normally and laterite bricks (as sand substitution is 50%) and the compressive strength gain normal mixture was at 25,09 kg/cm<sup>2</sup>.

## Methodology

The research conducted was experimental research to obtain data in the laboratory. Before the experiment is carried out: determining the materials (cement, sand, laterite, foam agent and water), material testing, mix design, making test objects, maintenance and testing including: density, water absorption and compressive strength. Then the results were analyzed and conclusions were made. The sample units used were 22 bricks.

## Results

Meanwhile, by using 50% bricks substitution and 50% sand substitution, the results was 28,56 kg/cm<sup>2</sup>. It can be assumed that compressive strength material can increase the compressive strength.

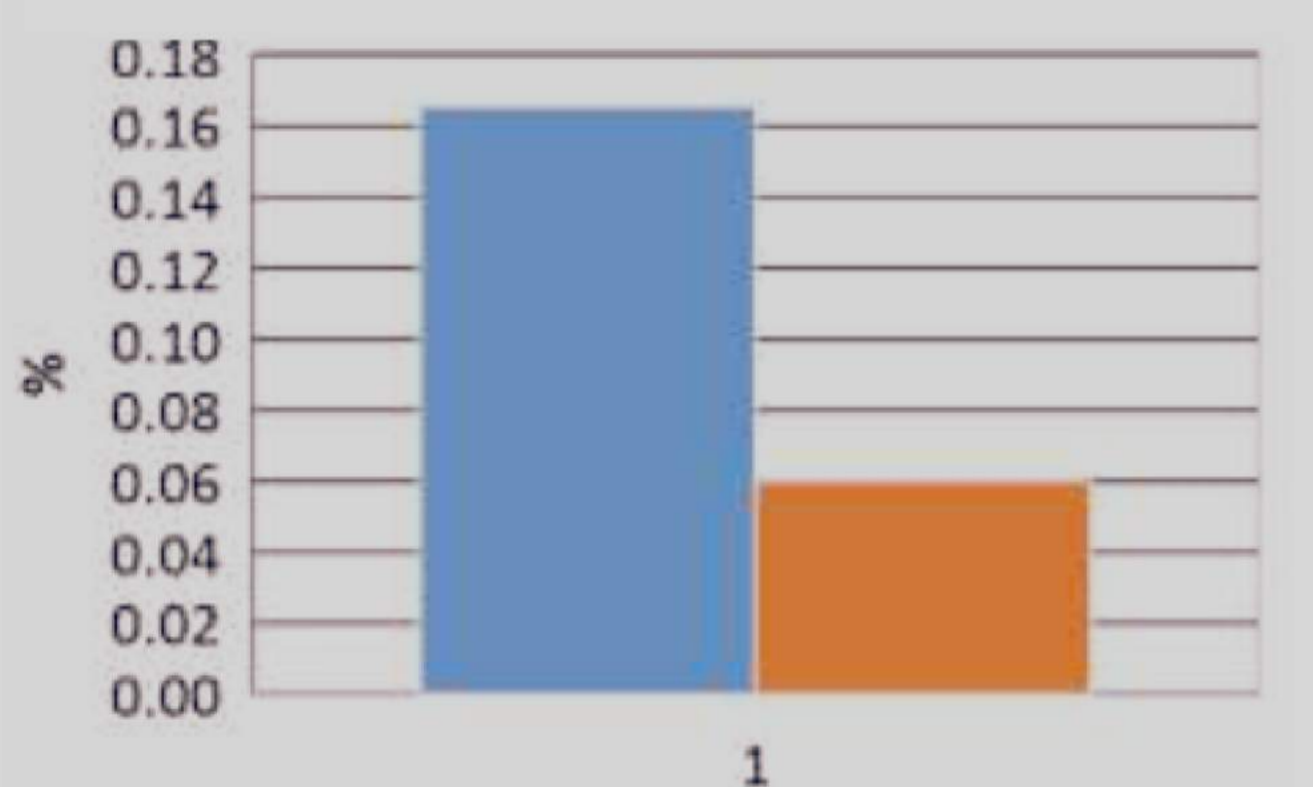


Fig 1. Water absorption average

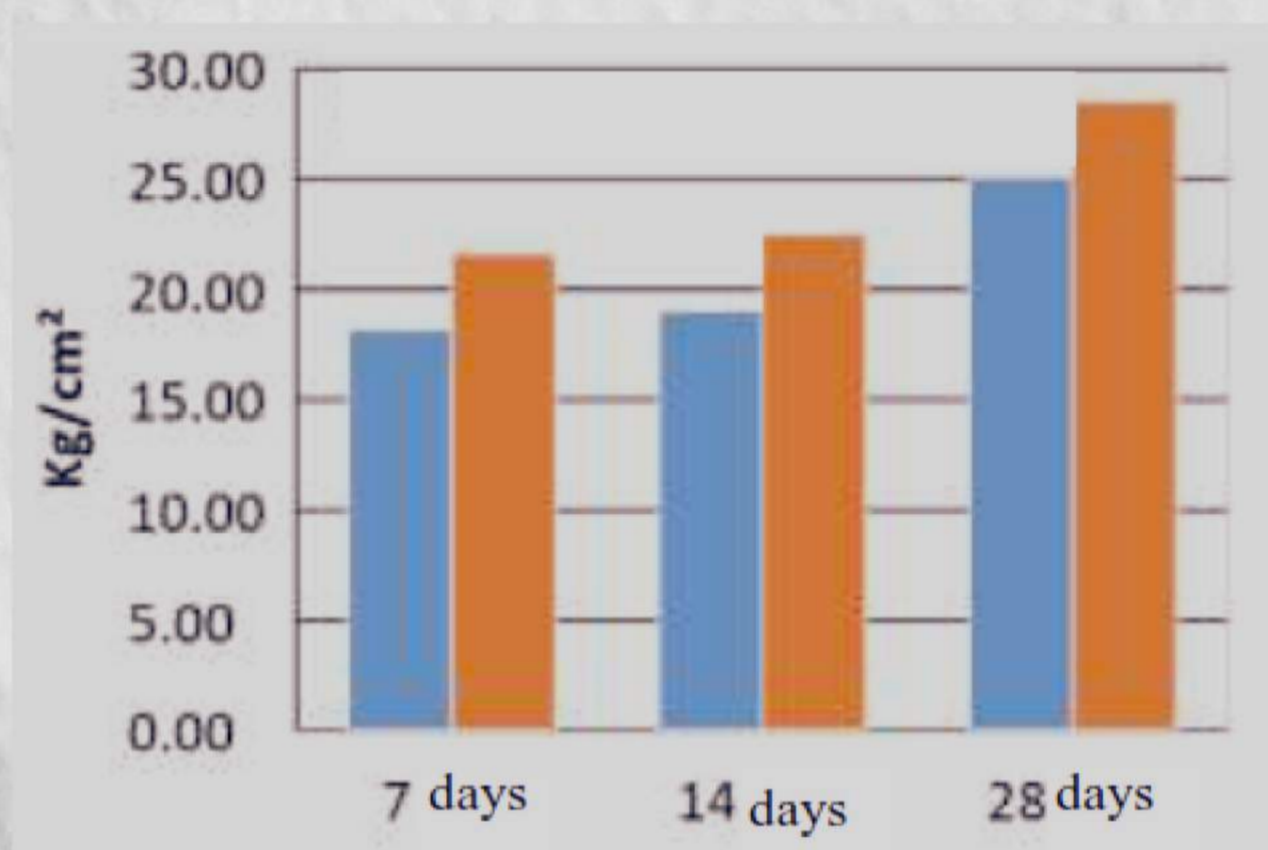


Fig. 2. Total compressive strenght



Fig 3. Foaming agent

## Resume and Conclusion

Laterite light concrete brick compressive strength value compared to normal bricks, so laterite can be used as a substitute materials ome of the sand on the adobe. The optimum compressive strength value of bricks is obtained at a proportion of 50% of 28.56 kg/cm square and all bricks with laterite substitution meet the minimum requirements of strong press non-structural bricks SNI 03-0349- 1989 quality IV 25 kg/cm square . While the absorbcency value of each substitution proportion meet the absorbcency requirements of bricks does not exceed 25% referred to SNI 03-0349-1989

## Related literature

- [1]. Mulyono Try, Concrete Technology, Andi, Yogyakarta, 2005
- [2]. National Standardization Agency SNI 03-2834- 2002 "About Procedures for Making Plans Normal Concrete Mixture, 2002.
- [3]. National Standardization Agency SNI 03 - 0349 -1989 "Concrete Brick For Couple Wall", 2002.