WATER ABSORPTION AND WATER RETENTION CAPACITY FOR THE LOCALLY DIFFERENT TYPES OF HAND MOLDED BRICKS

CASE STUDY ON LOAM SOIL AND THE ANTI-HILL SOIL IN NAGONGERA TOWN COUNCIL

BY

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DECLARATION

I batya Sam, hereby declare that this research is my original work and never been presented to any institution of learning for any academic award

Signature:..... Date: 26th/05/2022.....

Batya Sam

APPROVAL

This is to confirm that this research entitled, determination of water absorption and water retention capacity for different type of locally hand molded bricks by Batya Sam was carried under my close and strict supervision.

SUPERVISOR:

Signature..... Date: 26/05/2022

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DEDICATION

This research is dedicated to my father batya william and my mother agnes sande for their moral,parental and financial support from birth to date.

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I will like to extent my sincere gratitude to the staff of the physics department Busitema University and the entire University at the large for facilitating me in carrying out of the research. They provided me with an inspiration to allow me to carry out the research courageously to produce this final report.

I am grateful to Nagongera town council residents who gave their time and allowed me to pick the soil samples from their land for research and my friends for unconditional love and material support that they rendered to me through the process of carrying on my research.

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ABSTRACT

This study was about investigation of the rate of water absorption capacity and the retention capacity of different types of bricks use for construction of the building in nagongera town council, the purpose of this study was to determine the type of the brick that absorbs water slowly and releases firster. the following were the objectives the study, to determine the compressive strength, water absorption capacity, and water retention capacity of different types of hand mold bricks made by the anti-hill soils and the loam soils. Also to identify the good quality of the brick to be used in construction

The three different types of bricks where measured in each case and thereafter, the three types of the bricks where socked in different packets containing water. For the first case in the period of 2 minute, the second case 4 minutes, the third case 6 minutes and up to the period of 60 minutes.

During the process when the bricks where deep in the water for a long period, bricks made out the loam soil start to dissolved in water, brick made out of anti-hill soils became sticky and in the process they were no longer taking in water.

The findings showed that the rate of absorption capacity and the retention capacity of the three different types of bricks was high in the beginning and later it becomes slow but the time was also increasing.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

The cracking and the collapse that develops on the buildings was one of the major problems in Uganda. There found both in the rural areas and in urban areas constructed building.

Therefore, there was need to compare the compressive strength of different types of bricks for example, the loam soils and the Termite clay soils, which were obtain from anti-hill (or mound) which was the pile of earth made by termite from the soil in the immediate vicinity. It was a large tower of soil stuck together with termite secretion. The termite hill (anti-hill) was found in any part of the world where it was highly populated in Africa and Australia (William, 1995). In their study, they reported that the termite hill samples indicate chemical composition similar to that of clay minerals. These were because termite clay had better material than the ordinary clay in terms of utilization for molding lateritic bricks due to their plasticity (Odumodu, 1999).

However, there are few reports on the utilization of termite clay as material for brick production. The termite hill appear in different colors which according to Brady and Ray (2006) depend on the type of soil on vicinity. The property of termite clay therefore depends on the type of soil within the immediate environment, landfill and open burning. Clay soils, are mostly used to determine the rate of water absorption capacity and retention capacity in the construction of the buildings to minimize the errors of cracks in buildings and some collapse due to the stage at which bricks are used for constructing the houses

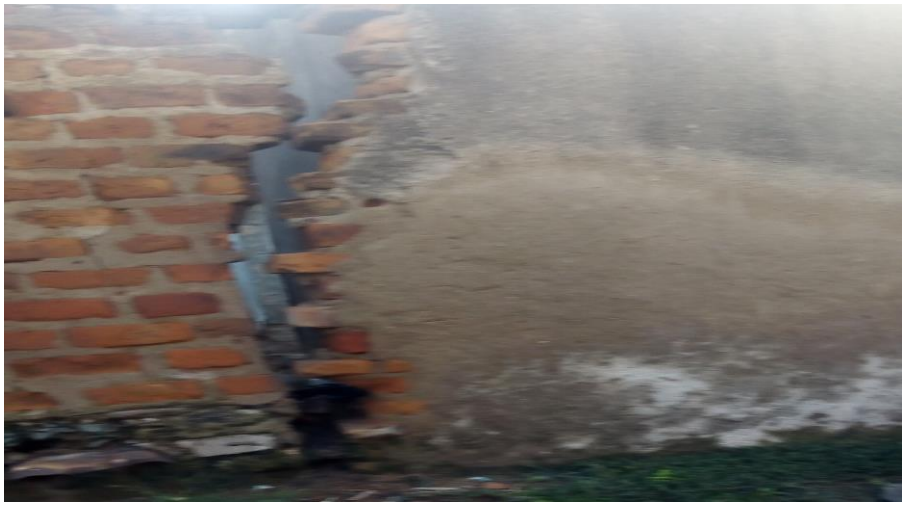

Figure 17.1 Cracks and collapse in buildings

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