CHAPTER 3

MATERIALS AND METHODOLOGY

3.1 INTRODUCTION

This chapter will describe the procedure and execution of works in details. It will discuss from the preparation of sample to the testing procedure that involved in this study. Tables and figures will be used in descriptions for better understanding.

3.2 SAMPLE PREPARATION

The raw materials needed in production of interlocking block are discussed in this section. The raw materials included are Ordinary Portland Cement (OPC), laterite soil, and river sand.

3.2.1 Cement

There are varieties of cement available in the market. Commonly, cement can be describe as a material with bonding agent and cohesive properties, which it make it proficient of bonding mineral fragment into a solid whole. The cement that was used in this present study is Ordinary Portland Cement (OPC), which is acceptable in term of fitness, strength, setting time and hydration. OPC that going to implies to BS 12: 1958.. The
selection based on the common practice as this type of cement is widely used in construction process.

![Image](image1.png)

**Figure 3.1**: ‘Orang Kuat ‘ OPC

### 3.2.2 Laterite Soil

Laterite soil is used as major component of the interlocking block. The physical colour of the selected soil is reddish orange.

![Image](image2.png)

**Figure 3.2**: Laterite soils
3.2.3 Mortar

Mortar is a paste that made of cement, sand and water that always be used in binding together construction materials such as bricks, masonry and stones and also to fill the voids or gaps between those construction materials. Mortar also has the important role to increase the ability of the load bearing capacity of construction materials. It becomes hard when it cured but the strength is not the same as the construction materials. Mortar is a plastic material with low water/cement ration and high in cement content.

![Mortar production](image)

**Figure 3.3** : Mortar production

3.2.4 Water

The water is needed in mixing process. The specified water content for mixing process is 10% from the weight of the sand.