

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
MECHANICAL SAND PURIFIER**

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ABSTRACT

First, my objective towards this project is to make the job for workers easier. I designed a sand purifier that will filter all the unneeded substances in the sand and will pack it into a sandbag. The problem with the traditional sand filter or purifier is that it takes two work to filter and pack the sand. So, with my project will help workers to do their job faster. My second objective towards this project is to reduce the cost of the sand purifier. In recent years, most sand purifiers are quite expensive, especially automated machines. I want to make a simple sand purifier by using mechanical parts and of course it is more affordable. It runs using an electric motor that will shake the filter. Just simply put the sand on it and it will filter it. This machine is also equipped with funnel as a way for the sand to fall directly into the sandbag or ground.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

This study is dealing with the generating of a new idea to produce a sand filter machine with a new design. Producing sand filter machines for small buildings' construction and household because of some problem that occur. Plus, to realize our goal in technological advances based on modern principles. Explosive ideas based on statement of problems that have been recorded from studies on quality of fine sand and workload used. Many things and research support us in creating this product as our main project. We create and upgrade a product that can filter the quality sand without mixing it with foreign matter and reducing the workload of filtering sand. It would present two functions in one concept as well.

1.2 Problem Statement

The reason for the idea of building this sand filter is that we have seen contractor workers use their energies in abundance just to get fine sand. They need to build sand filters that need to be made using the used wood to filter the sand. From there, they waste their energy as well as their own time. Additionally, we realize that filtered sand using the existing sand filter will mix with foreign matter because the filtered sand falls directly onto the ground without any reason. We do not know that there are many foreign objects in construction sites such as nails, iron, stone and so on. The existing sand filters cannot be brought anywhere because there is no wheel. It makes it difficult for workers to bring fine sand to areas requiring fine sand. This is because they need to put the sand in the cart beforehand and then bring the sand to where it should be.