UNIVERSITI TEKNOLOGI MARA

DESIGN AND ANALYSIS OF PORTABLE SHOE RACK

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ABSTRACT

Shoe racks are common furniture storage units available in the existing market with many various designs. According to the previous design, most existing products are in good working condition. Furthermore, nowadays products also provide space or a seating area at the top but mostly are not portable. Most consumers prefer products that provide multipurpose shoe racks. The objective of this project is to come up with fresh ideas for making foldable and multi-purpose shelves also minimize the space. This shoe rack is to create multi-functional and portable shoe racks for everyone's use. Besides, this portable shoe rack builds up from expanded metal, hollow mild steel and ACP make it economical and having artificial looks and can make anyone love it. In nutshell, this product is designed to assist consumers organize their shoes properly and exceed their expectations with a pleasant experience when using it.

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CHAPTER ONE
INTRODUCTION

1.1 Background of study

A shoe rack is a piece of furniture or a built-in storage device that keeps pairs of shoes organized and together. Shoe racks can be found in a home's entry foyer, vestibule, or closet and the purpose is to keep shoes from piling up in a hallway or foyer of a house. A shoe rack can be used to keep a home clean by allowing wet shoes to dry and preventing dirt from being tracked deeper inside shoe rack also can be built-in as shelves or wall units within a closet or walk-in closet and is normally low to the ground for ease. In this project, an ergonomic shoe rack was designed and fabricated due to usability in the current shoe rack designs. There are numerous designers as well as companies who have designed the shoe racks, however, there doesn't seem to be a numerous potential issue with these shoe racks right now.

Currently, most of the shoe racks use materials such as plastic, wood, metal, and others. Plastic materials are a non-recommended material because plastic does not support weight. Plastic has high yield strength, however if plastic is loaded with a lot of weight, plastic begins to deform easily. Other than that, wood is a good constructive material. However, wood is easily susceptible to termite attack. Another material is metal. Metal comes with many types such as steel, brass, and copper. Metal is such a strong structure and able to last for a long time. Metal is a material that is easy to find and available. In another way, metal is quite expensive compared to other materials. Metal is also exposed to the air and water which can cause corrosion. These materials each have their pros and cons. So, in this project, suitable material will be chosen that can achieve the objective of the products. In this project, metal which is mild steel will be chosen at the frame of the shoe rack and as the shelves wall.

Based on the previous study on usability improvement with an Ergonomic Automated Shoe Rack, the project showed the ability of the shoe racks to move around with the help of a wheel. The primary advantage of adding wheels to a shoe rack is enhanced mobility. With wheels, can easily move the rack around home without the need for heavy lifting or disassembling. This is particularly beneficial if frequently rearrange living space or if want to clean behind or underneath the shoe rack.