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# HAMMER MAGNETIC GLOVES

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## **1. EXECUTIVE SUMMARY**

It is known that mostly when doing improvement, construction, carpentry or repairing involving hammer and nails, some common problems will eventually be experienced. There are many protective gloves nowadays in the current market. Hammer Magnetic Gloves offer a different perspective of safety when using hammer and nail. since this product is still new in the market, therefore its takes time to gain trust of potential customers. However, this product will become well-known after a period of time.

The specific material for Hammer Magnetic Gloves was described in this paper. Four main material used were doyentrontex fiber, PVC dotted anti-slip fabric, anti-vibration rubber pad and neodymium magnet. all the information for the material will be explained more on the next section. With the combination of all this materials, this product have a better chance to compete against other existent product.

Moreover, the financial plan will be explained more in this paper. This can help the company to understand in more detail its financial potential for a period of time. It also estimate the profit gain every year by selling this product to Selangor population. Besides, the information of the management team will be explained specifically regarding to their skill, experiences, qualification, responsibilities, salary and shares of ownership.

## **2. PRODUCT DESCRIPTION**

Men usually will face problem when doing improvement, construction, carpentry or repairing involving hammer and nails. Naturally, nails be kept at toolbox and it be frustrating to go back and forth to your toolbox. Besides, when involving climbing up a ladder, it be difficult to hold the nails and it usually be kept in pocket that is hard to reach easily. Moreover, it is not comfortable to hold the nails by hand because it can be troublesome to work freely since the nails being hold careful to avoid from dropping it. Furthermore, when holding nail by fingers to start hammering, it can slip since our fingers does not grip fully. Next, it can be painful when the hammer hit fingers accidentally. To solve all this problem, Hammer Magnetic Gloves has been invented that's come with many useful features.

The Hammer Magnetic Gloves are consist of four main components that are glove, gripping palm, anti-impact rubber and magnet. For the glove, I have decided to choose doyentrontex fiber as the glove material. Doyentrontex fiber is a Ultra High Molecular weight Polyethylene with unique combination of properties. The tenacity is the highest in the world and can be up to 15 times that of a good quality steel. The modulus is very high and is second only to that of special carbon fibers grades. Elongation at break is as low as for other high performance fibers. This material has high impact resistance, anti-aging, anti-UV capability, corrosion and sea water resistance, abrasion and fatigue resistance, low dielectric constant, temperature resistance and high electrical resistance factor which make it the most suitable material to use for Hammer Magnetic Gloves to assure its durability. The density is slightly less than 1 g/cm<sup>3</sup>, so the fiber floats on water. This will make Hammer Magnetic Gloves to be super light and make it comfortable to wear without any weight burden. In the current market, there's a product called Hammer Glove that use seamless poly-cotton knit as its material. This material is a good choice because breathable and comfortable. However, poly-cotton is quite slippery and not fire resistance. This might make the user's hand become uncomfortable when the weather is hot since it will feel hot.

For the gripping palm, the material used is PVC dotted anti-slip fabric. The advantages of using this material is it shrink resistance and tear resistance, waterproof, flame retardant and

anti-static. This material is suitable for Hammer Magnetic Gloves to ensure its gripping palm. This gripping palm is to make sure that the nail is being held tightly to avoid it from falling from hand. A better grip is necessary since the fabric or material used might be slippery. Pvc dotted anti-slip fabric can be helpful to ensure this feature will be functional properly and durable. In the current market, there's a product that used TPU outdoor fabric with PVC rubber dot. TPU that is thermoplastic polyurethanes is an environmental friendly replacement of PVC and performs better in low temperature properties, abrasion resistance, flex properties, plasticizer migration. However, this TPU fabric is only suitable for low temperature environment and will melt if receive direct sunlight or under high UV light levels.

Next for anti-impact rubber, the material used is anti-vibration rubber pad. It used to reduce noise and shock absorption of equipment. Made of high strength rubber, which is structurally more sound than cork, no more affected by oils or chemical; more effective at vibration dampening than solid rubber. This part is important to protect hand especially thumb from misleading and inaccurate action of hammering a nail. It could be very painful if the thumb is not protected and being hit by a hammer. The anti-vibration rubber pad will help reduce the impact of hammer by absorbing its shock. This will lower the chance of badly being hurt by inaccurate action of hammering. Although there already exist this anti-vibration rubber pad in the existed product, but improvement being made for Hammer Magnetic Gloves is that the quantity of anti-vibration rubber used being minimize to lower the cost. Anti-vibration rubber only be placed on a certain fingers where the possibility for that certain fingers to be hit by hammer is high.

Furthermore, the magnet used for this product is neodymium magnet. It is composed of rare earth magnetic material, and has a high coercive force. They have an extremely high energy product range and because of it can usually be manufactured to be small and compact in size. This magnet part is important for Hammer Magnetic Gloves to hold and store the other nails. This feature will assist its user to store the other nails that will be use later in a place that safe and easy to find. There also other magnet that is samarium cobalt. This magnet is not suitable for this product since its very strong and difficult to demagnetize. If