

FABRICATION OF VIBRATION SAND FILTER

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ABSTRACT

The Concept and idea behind our Vibration sand filter is that In recent years, the use of sand filter machine has gradually increased. But, most of them are quite large and difficult to be move. Besides that, the price to own it is quite expensive. With that, there are a large number of construction workers who have to exert their energy to making sand filters by themselves in the traditional way. However, there are some problems that come with using the traditional sand filter. Among these are, the construction workers have to exert their energy to build the sand filter. In addition, refined sand will mix with foreign matter when refined sand falls to the ground. Therefore, we have created a product that can facilitate the construction work of the construction site. Our main goal of creating sand filter machines is to reduce the workload of construction workers when they want to filter or use sand filters. It runs using an electric motor that will shake the filter. We just need to put the sand on the filter and the sand will be filtered with the shake that is produced. The sand filter machine is equipped with a funnel as a way for fine sand to fall. All we have to do is put the wheelbarrow next to the sand filter and the sand will drop into the wheelbarrow. It is different with the traditional sand filter where the refined sand falls, we have to put it in the wheelbarrow. It will use more of construction workers energy. Most important is that the filter machine is easy to move around in construction as it is equipped with two suitable wheels. It will make it easier for construction workers to filter sand in one place or another place.

The generating a new idea to produce a sand filter machine with new design. Producing sand filter machine for small building's 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 to create 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 be present 2 functions in 1 concept as well. A sand filter is, as one would expect with this name, a filter that is filled with sand. Sand of different particle sizes is contained in a sand filter and at the bottom of a sand filter is a porous double bottom.

INTRODUCTION

The project that we intend to implement for the final year project is a sand filter machine. This idea came about when we saw the difficulties of contract workers who needed to build sand filters on their own using the wood. It has wasted energy consumption as well as time as it is necessary to build the filter before it can be used. Additionally, the sand filters use a lot of energy as users need to take the sand and dump the sand on the filter nets. After that, the filtered sand would have to be taken again using a sand shovel to be placed in a stroller and taken to a site that needs to use the fine sand. With that we think of an innovation to reduce the energy and time of contractor workers by creating a sand filter machine that uses engine power to get the good qualities of sand. By using an existing sand filter, contractor workers do not get the good qualities of sand because the filter has only one layer of filter net. Furthermore, filtered sand with existing sand filters will mix with foreign objects because the sand falls on the ground there is nothing to lining the sand. With the machine we wanted to create this, filtered sand could be inserted into the wheelbarrow. With that, sand will not mix with foreign objects and it can also save energy.

The sand filters we want to create will help contractor worker to facilitate their work. Manpower can be reduced when using this sand filter machine. We put two wheels on this machine so that the machine is easy to move on the construction site. This filter machine we put three different types of filter coating so that it can get good qualities of sands. We use the vibrator engine to vibrate the filter part so that the sand can descend quickly.

LITERATURE SURVEY

Sand substance is one of the most important things in industrial world. Nowadays the industry need the sand sub stand that are already been process known as sand product. As we know the sand sub stand are mixtures with variety other component such as dirt and metal.

Usually, people use their hands to sieve sand and absolutely it will take much time to do it. But now, we get some ideas to modify this sieve sand machine by using the power of vibration motor system. With the invention of this sieve sand machine, it can be overcome and makes the construction contractor's work more convenient. It can also be used in the manufacturing of mould industries especially for the sand casting process. By using this sieve sand machine, we can save more time, energy and cost. Indirectly, it will improve the manufacturing qualities. This machine is fixed with wheels, so it is easy to move and to keep. Besides, it is easy to use even by the unskilled workers. Furthermore, it is easy to operate and the spare parts can be obtained easily on the local market Therefore, this machine is suitable to use in the "Industri Kecil dan Sederhana (IKS)" and training institutes such as Polytechnic and MARA Training Institutes (IKM) for training purposes. Sand is a quartz-based material. The sand is practiced sized between 4.75mm and 0.15mm are common sand used to produce concrete and plaster. According to research, sand are available from mines or rivers. The sand mining is sand which was excavated from the mine. This sand is widely

used and usually divided into two types, namely fine and rough sand. Fine sand which contains little soil is usually used for mixing along with fine sand from rivers and cement. The mix produces a mixture of plastic and easy to attach although its strength is somewhat less. Coarse sand is suitable for use to combine concrete and make blocks and cement bricks.

History of sand filter:

From years sand has been the most important thing in human community. Most sediment, including sand, are made up of the fragments that result when rock is broken down by wind and rain (weathering). Generally, they start as larger fragments (gravel), which are broken down as rivers carry them down stream; the finer the particle, the further it has travelled.

In other words, large bits of gravel are plentiful on the banks close to the head of a river. As you travel downstream, gravel becomes finer into cobble, pebble, granule, and eventually turning into sand, and finally flowing into the ocean, where these sediments deposit.

That is why, by carefully analyzing the mineral content and chemical composition of sand on riverbanks, beaches and ocean floors, we are able to determine which formation, indeed what kind of rock, it originated from. Most sediment, including sand, is made up of the fragments that result when rock is broken down by wind and rain (weathering).

CONCLUSION

The proper guidance of project head and the sincere efforts of our group have lead to the successfully accomplishment of our concerned projects. "SAND FILTER MACHINE " was interesting to work on and was also gained in this project work.

FUTURE SCOPE

Produce superior quality of sand.

Very low water wastage.

Robust and unique design.

Easy maintenance.

Low production cost

Safe system.

High production, less wastage.

Long service life.

Easy to operate and highly efficient.

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