‘COMPACT TO IMPACT: REDUCE SPACE OCCUPIED BY WASTE.’

Information Guide for Teachers and Students

Contents

Introduction

Recycling is of great benefit to the environment because it reduces energy used, enhances the quality of water and air, and combats climate change. It also decreases the need for the use of new raw materials to create new products, thus conserving natural resources and positively impacting on the economy.

However, one deterrent to the collection of materials in schools that can be recycled is the space to store such materials until such time that these can be collected by the relevant agencies. Oftentimes recyclable materials (plastic, paper/cardboard, and aluminum) collected in schools in garbage bags, occupy a huge amount of space. Such materials have to be collected following schedules determined by the collecting agencies, and as space in some schools is very limited, this discourages the collection of material for recycling. If such recyclable material can be compacted in some way, this will greatly reduce the amount of storage space required.

Global Recycling Day

Global Recycling Day, celebrated on March 18th annually, is a recycling initiative that encourages people all over the world to view waste material produced from new perspectives. It seeks to encourage change in the outlook of governments, businesses, communities, and individuals around the world, to see recyclable material as a resource. It is hoped that recognition of such a day will promote recycling, reusing, and repurposing of items that are normally considered trash to be disposed of.

In Trinidad and Tobago in recent times corporate entities have promoted the benefits of recycling to our economy and environment. Two such initiatives are:

- iCare TT: An initiative of the Environmental Management Authority (EMA) which is a Recyclable Solid Waste Collection Project, which began in 2015 and promotes voluntary participation in the recovery of beverage containers for recycling. iCare collection bins are currently located in some primary and secondary schools in Trinidad and Tobago.

- Every Bottle Back TT: This is a joint initiative involving Blue Waters Products Limited, Republic Bank Limited, and Caribbean Bottlers Trinidad and Tobago Limited. This

initiative encourages people to recycle plastic bottles by dropping these off at ECO-Bins located in Port of Spain or taking them to a Collection Center to receive $1.00 for every 20 plastic bottles recycled.

Why the need to reduce waste?

Waste management has become a critical issue worldwide and more so in small island states, like Trinidad and Tobago. This is due to the drastic increase in the volume of waste and the indiscriminate disposal of waste by some citizens. (Waste Recycling Policy Document, 2015).

According to The Solid Waste Management Company Limited (SWMCOL), "Trinidad generates 1.5 kg of waste per capita" with most of our solid waste being deposited in the nine (9) landfills in Trinidad and Tobago. However, the collection of waste is not always timely. Together with the lack of sensitivity by most of our citizens to the importance of proper waste disposal, we have landed in a situation where we are now experiencing the drastic effects of the above practices. The major effect is flooding and to some extent public health concerns.

To address these issues, the process of waste compaction can be used.

According to Wikipedia, "waste compaction is the process of compacting waste reducing it in size." Waste compaction is done using a trash compactor.

How are Trash Compactors Used?

Trash compactors have become an essential part of several industries to reduce the volume of waste produced from production, record keeping, shipping and receiving, and various manufacturing processes. As concern for the condition of the environment grows, the use of compactors as a means for reducing the size of loads dumped into landfills has increased.

The simple process of crushing waste and compressing it into bundles, blocks, and bales has had a significant impact in limiting the size of waste material. Since the introduction of the first compactor in the 1940s, their use has grown from a convenience to a vital part of environmental protection and sustainability.

How Does a Trash Compactor Work?

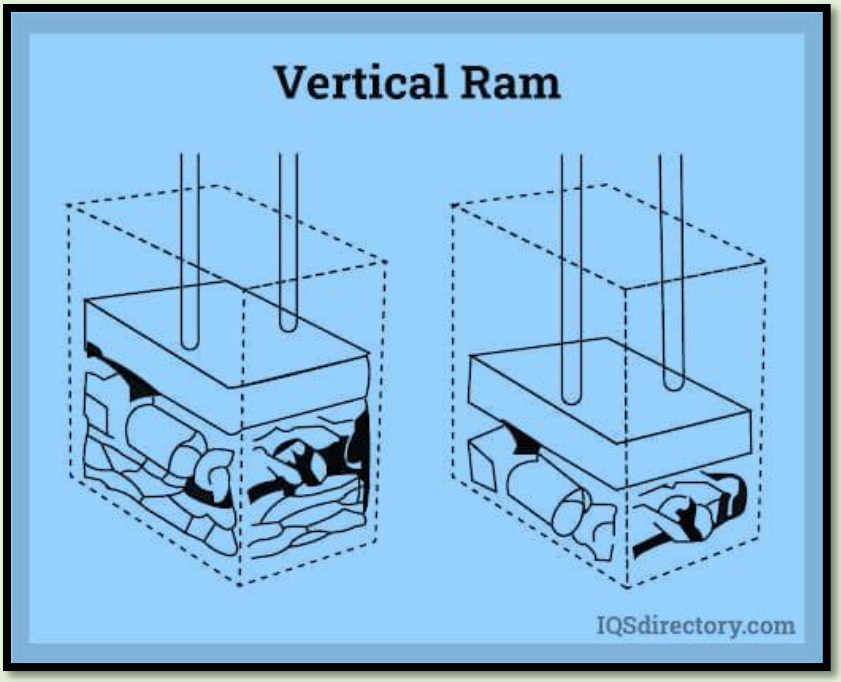
The many configurations of Trash compactors have a single goal: to compress waste material into a compact size for removal or recycling. From this general principle, manufacturers have developed a variety of methods and techniques that are designed to meet the needs of specific materials and applications.

In the majority of cases, the compression process is initiated by a ram that is powered by a motor. The size, force, and power of the system depend on the types of materials to be processed and the size of the chamber

Design of a Compactor

Ram Design

The ram is the working mechanism of a trash compactor since it is the part of the compactor that crushes and compresses the contents. It is a giant rectangular piece of metal made of heavy-duty metals that thrusts forward with great force. How the ram attacks the waste matter depends on its design since it can be moved vertically or horizontally. The image of the ram below is from a vertical compactor.

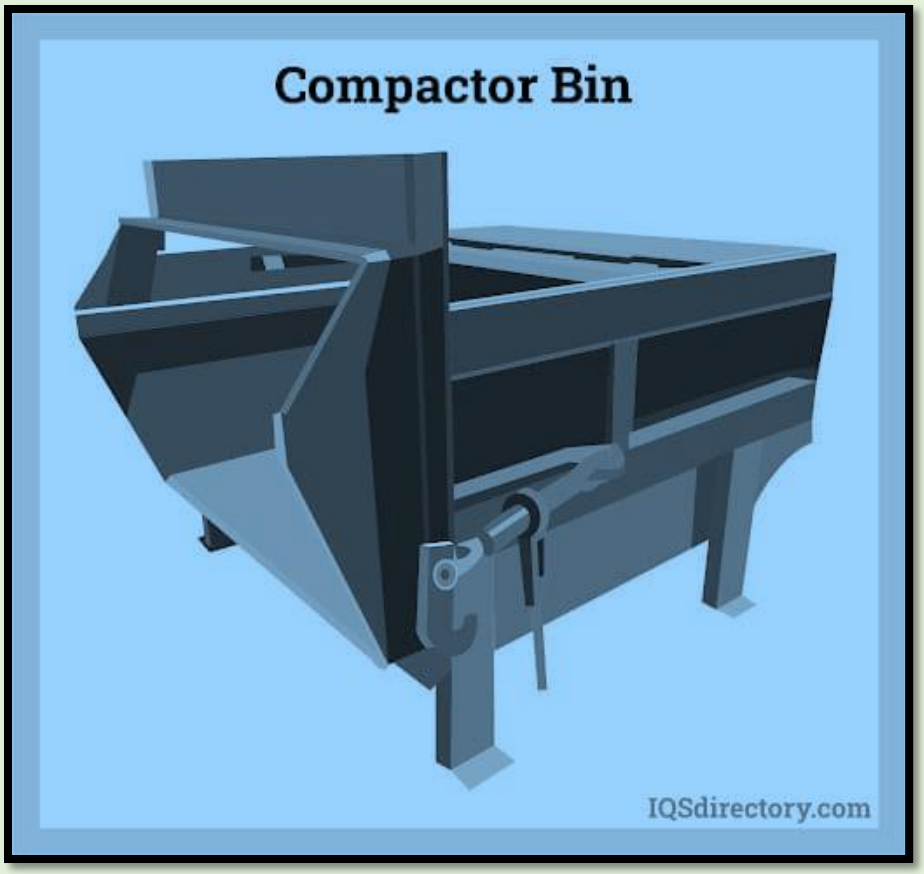


Compactor Bin

Several terms are used to describe the part of the compactor where the trash and waste is collected. Chamber, hopper, bin, and other terms are used to designate this space. The bin is the largest part of a compactor and where the ram moves through to compact the contents. Some manufacturers suggest organizing materials in the bin with larger pieces of waste in the center and smaller ones along the side.

There are restrictions on the materials that can be placed in the bin such as items with hazardous chemicals, explosive materials, certain foods, and any items that have a strong odor or smell.

In the compactor below, the bin opening can be seen on the left of the image of a stationary short-pack compactor.



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