

Introduction

Manufacturing waste will be generated in every manufacturing plant. It is important that you establish practices to minimize the generation of waste. Some types of commonly observed wastes in manufacturing facilities include waste from overproduction, defects, inventory, unnecessary motion and transportation, waiting times, over-processing, and unused time and creativity of employees.

Source: <https://www.fishbowlinventory.com/blog/2018/01/31/8-effective-ways-to-reduce-manufacturing-waste/>

1. Efficient Inventory Management

You can reduce manufacturing waste, according to Greenne, by controlling the materials being used in the manufacturing process. Reduce the amount of excess raw materials in stock and quantity of hazardous materials to bring down the amount of waste generated. Order only the needed quantity of any material and only the amount needed for a specific period of time.

2. Reduce Packaging Materials

Redesign the product packaging to ensure it uses the minimum amount of materials. Try to incorporate reusable or recyclable packaging content, such as air packs or corn-based packing peanuts, to provide cushioning. Buy products in bulk as it will have reduced packaging.

3. Volume Reduction

Volume reduction refers to the segregation techniques that remove the hazardous portion of waste from the nonhazardous portion. These methods help in reducing the volume and the cost of waste disposal.

They can be broadly divided into 2 categories — waste concentration and source segregation. The former may increase the likelihood of the material being reused or recycled and the latter consists of different types of materials within the waste being treated separately so that the metal value in the sludge can be recovered.

4. Recover, Reuse, Sort

5. Establish a Preventative Maintenance Schedule

Although wear and tear is a normal occurrence in any manufacturing process, if regular maintenance is not performed, your business will end up wasting a lot of time and money on seriously damaged equipment.

It would be more beneficial to your budget and control the costs to prevent a breakdown instead of reacting to a breakdown later, which results in unnecessary overtime and increased shipping costs to expedite delivery.

6. Label and Organize the Warehouse Properly

Ensure your warehouses are organized and well-marked. All the locations of inventory, tools, supplies, and assets necessary to manufacturing processes must be clearly marked throughout the warehouse. Over time, the markings may get faded, non-existent, or outdated. While this may not be a hindrance for longtime employees, the new hires and temporary workers may have a tough time navigating through a warehouse that isn't organized or marked properly.

This may result in incorrect finished goods being shipped to customers or increased time being spent on searching for the right tool needed for an urgent repair. Replace the faded tags and repaint the floor lines regularly.

7. Adopt a Closed Loop Manufacturing System

Green chemistry would be a good technique to reduce waste generated by various processes, but if it isn't viable for you, consider a closed loop manufacturing system. This way, you can keep track of your inventory and utilize recycled materials in the production cycle.

Moreover, closed loop systems help in extending the lifespan of chemicals by maximizing how efficiently they are used. This helps in reducing the amount of contamination being produced and minimizes the number of new chemicals that need to be purchased.

8. Minimize Water Usage

Industrial sludge and wastewater make up a significant portion of manufacturing waste streams. You can reduce these elements by minimizing water usage in the operations. This can be achieved by using chemical drying agents, reverse osmosis, dry machining, or membrane biological reactor.

Encourage employees to cut down on drinking bottled water as plastic drinking bottles constitute a major fraction of plastic waste generated. Switch to drinking in glasses or promote the use of reusable bottles in the workplace.

Recover as much waste as you can from onsite and offsite locations by employing different techniques like electrolysis, filtration, reverse osmosis, centrifugation, etc.

Recycling is another popular choice. Recycle materials like paper, plastic, and metal regularly, and avoid recycling hazardous materials as it rarely has any environmental benefits. Industrial shredders are critical in this process as they can be used to reduce waste by condensing asphalt, wood, rubber, and plastics to a fraction of their original size.

Sorting the waste ensures that the recyclable items are getting to the right place. Assign someone the responsibility of monitoring the bins. They can then find a viable solution for eliminating, reducing or reusing the generated waste.

What you consider as waste can be a resource for some other business. Exchange the generated waste through a waste exchange program with such businesses.



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