

RECYCLING OF CONSTRUCTION WASTE MATERIALS AT KOSAD, SURAT

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Abstract – Construction waste management is important nowadays. Waste of construction founds a major portion of total solid waste products in the world. Hence, appropriate management of this waste is required. C & D waste is generated whenever any construction or demolition activity takes place, such as building, road bridges, etc. demolition materials from warehouses, agricultural and industrial buildings may contaminated with chemical recycling of waste construction saves resources, energy, air pollution and water pollution reduces, greenhouse gases reduces. The aim of this analysis is to analyze impact on reuse, recycle and recover on building construction industry.

Key Words: Construction waste, Crushing, Screening, Washing, Recycled aggregate.

1. INTRODUCTION

The waste material of construction and demolition waste site are having disposal problem. Mostly it is used for the land filling, but it is an alternative source of reusing such waste construction material.

The construction and demolition Waste is produced by refurbishment or renovation of building. In India, construction and demolition Waste will increase day by day with the development of the town and country. Thus, construction and demolition Waste management should be study to finding problem solution of C&D waste right way. Construction and Demolition Material is defined as a mixture of waste material arising from any excavation, building construction, site clearance, demolition activities, road works and house & building renovation. Over 80% of C&D materials are inactive and are further defined as public fill.

Public fill includes debris, rubble, earth and concrete which are suitable for land reclamation and site formation

1.1 Need for study

Recycling of concrete demolition waste can provide to save energy, time and money.

1.2 Aim

The goal of this project is to define & understand the process that are used to recycle construction and demolition waste & to prepare a simple Mould using C & D Waste.

1.3 Objectives

To know source & the materials of Construction & Demolition Waste Materials.

To know the process involved in Recycling of Construction & Demolition Waste Materials.

By using the C & D waste material prepare a Mould.

To use the waste materials in new construction and reduce overall cost of project.

1.4 METHODOLOGY

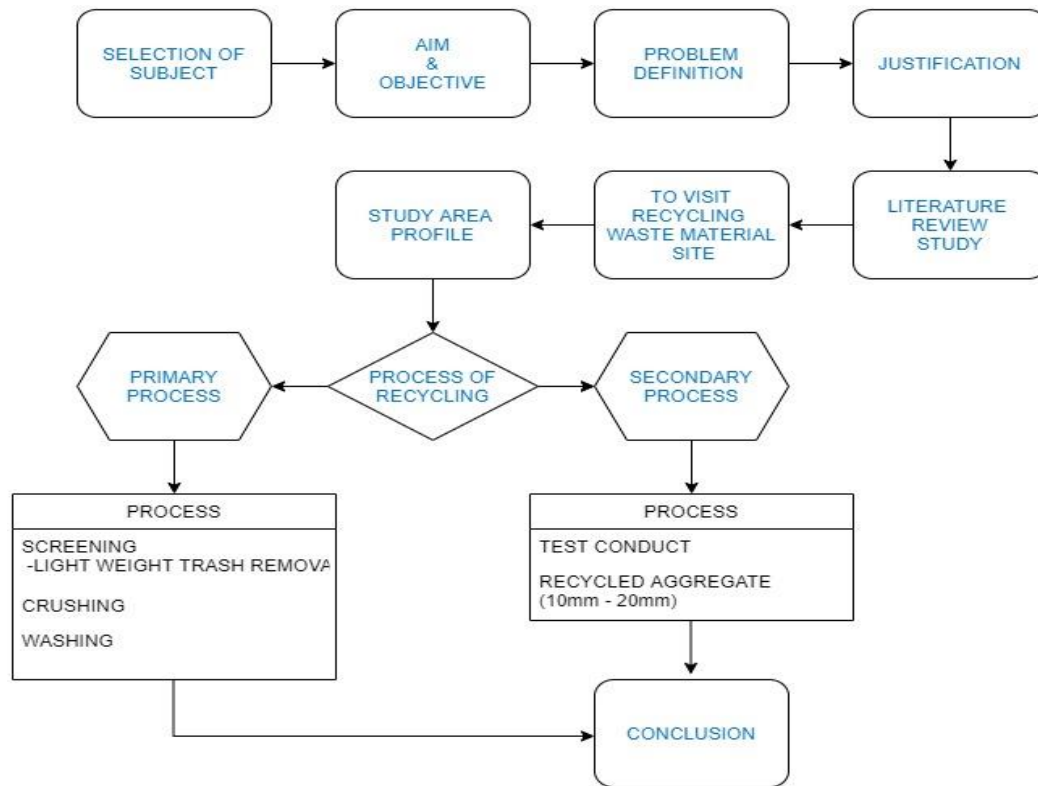


Figure 1. Flow chart of recycling method

2. STUDY AREA PROFILE

We visited the Surat Green Precast Pvt. Ltd to understand the process of Recycling SMC provided 3 acre land at Kosad.

This Surat Green Precast Pvt. Ltd works on principle of PPP (Public Private Partnership).



Figure 2. Belt conveyors



Figure 3. Belt conveyors



Figure 4. Hopper insulation



Figure 5. Hopper insulation

3. DATA COLLECTION AND ANALYSIS

The waste material of construction and demolition waste site are having disposal problem. Mostly it is used for the land filling, but it is an alternative source of reusing such waste construction material.

3.1 Problem Identification-

- The waste generated by building any civil structure causes many problems i.e. Environmental. Construction Waste is generated due to improper construction practices.
- Most landfills lack proper on-site construction waste management thereby contributing to additional threats to the environment.
- Waste recycling can to a great extent reduce environmental damages caused by incorrect disposals, extend the useful life of landfill and preserve precious finite natural resources.

3.2 Data Collection-

Table 1. C&D waste generated through demolition

Sr. No	C & D Waste generated thru Demolition Of housing complex	Tentative Quantity of Generation (MT)
01	Concrete	10,534
02	Soil Waste	Nil.
03	Bricks & Mortar	17,703
04	Steel	458
05	Wooden	55.7

06	Plastic	Nil.
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4. Methods for Recycling Concrete Waste-

Light Weight Trash Removal

In this method the impurities present in concrete is removed.
There are many impurities present in Concrete.

Crushing

In this process the concrete waste material is crushed into small pieces.
As crushing decreases the concrete size it can be used as a mixture for new prepared concrete.



Figure 6. Crushed concrete

Washing & Sizing

Washing is done to remove the soluble impurities present in concrete.
To differentiate the sizes of particles it is passed through IS Sieve tube to get eliminate the required size from others.

Recycled Concrete Aggregate

After the final process the required sand & Aggregate is obtained and can be used for various purpose.
This is used in different works
Use in concrete, in precast product, civil maintenance works.
By doing all this process we have prepared a Mould of recycled concrete aggregate.

5. Preparation of Sample Mould using Recycled Construction Waste Material

Preparing Mold



Final Product



Figure 7. Recycled Concrete Mold

6. Concluding Remarks –

- Recycling saves large amounts of energy, and in general it decreases the consumption of natural resources to produce new materials.
- Landfills are filling up, which means that alternative ways to manage waste must be developed. Recycled construction waste can be reused as it is.
- Recycling and reusing construction materials reduces the cost of disposal and transportation.
- Construction companies that recycle materials have a competitive edge, due to the increasing importance of green building and environmental conservation.

7. References-

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