

EFFECT OF METAKAOLIN AND FLYASH IN STRENGTH OF CONCRETE

Prof. Pooja Kirange

Asst. Prof. Department of Civil Engineering

Dr. D. Y. Patil College of Engineering & Innovation, Varale, Talegaon, Pune
pooja.kirange@dypatilef.com

Akash G Misal

BE Department of Civil Engineering

Dr. D. Y. Patil College of Engineering & Innovation, Varale, Talegaon, Pune

Shubham P Jadhav

BE Department of Civil Engineering

Dr. D. Y. Patil College of Engineering & Innovation, Varale, Talegaon, Pune

Suraj A Metakari

BE Department of Civil Engineering

Dr. D. Y. Patil College of Engineering & Innovation, Varale, Talegaon, Pune

Omkar D Nilankar

BE Department of Civil Engineering

Dr. D. Y. Patil College of Engineering & Innovation, Varale, Talegaon, Pune

ABSTRACT: This project uses various methodologies for analysis of Strength of concrete by using Metakaolin and flyash. Now a day's concrete is the most commonly used material in the construction. This review will help researchers working in the field of development in the strength of concrete by using Metakaolin and flyash. Metakaolin is the pozzolonic material which also increases service lifespan of the building. Flyash is the combustion of powder coal which is generated in thermal power plant.

Keywords: Metakaolin, flyash, compressive strength , Ordinary Portland Cement.

I. INTRODUCTION

Recent trend in civil engineering the demand of Portland cement is very high in developing countries. For the emission of CO₂ production of Portland cement is the major reason. Due to large emission of CO₂ it results to increase of green house effect and global warming. For preventing these problems we need to partial replacement of cement. The searching of such material which replaces cement and giving the well strength, lowest possible effect on environment, cost and time saving material. Out of various materials added Metakaolin, flyash and admixture to obtain of concrete having desired property.

Metakaoline is the natural pozzolonic material obtained from kaolin clay by heating this clay at temperature between 600°C to 700°C. Metakaolin name derived from kaoline clay and thermal activated ordinary clay. Mainly metakaolin is used for the improving compressive strength of concrete. Generally metakolin available in the white and

creamy colour. Metakolin used as partial replacement of the cement in concrete.

Flyash is the combustion of the powder coal and product of the fired coal in thermal power plant. Colour of the flyash is grey in colour.

II. LITERATURE REVIEW

In this paper the study was done for the obtaining fro kaolin clay. Metakolin used as partial replacement of cement which reacts Ca(OH)₂ gives additional product C-S-H gel this gel increases strength of concrete .It also reduces the permeability of liquid and gases in the cement. The metakaolin having high cost but it has economical aspect in durability and strength. [1]

In this paper using the concept of the curing. These states that the relation between the curing strength and normal strength for 7 days and 28 days compressive strength for avoiding incorporating metakaolin and flyash mechanical property.[2]

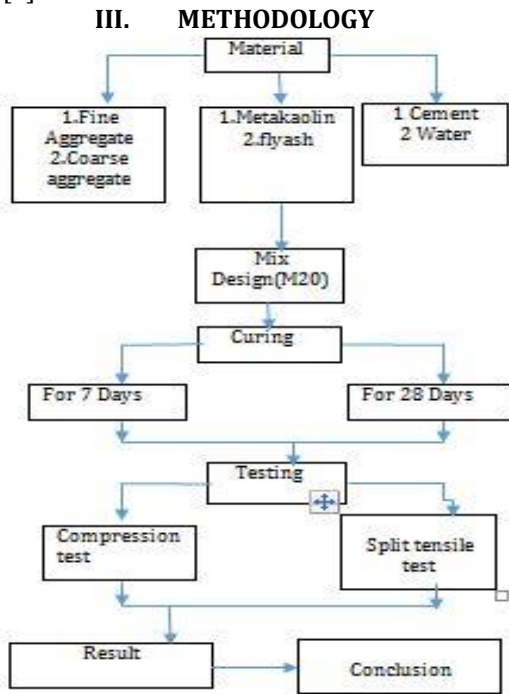
In this paper we use the metakaolin is a pozzolonic material which help for increasing the strength of the concrete which may be for early period or longer period.From our study we know about metakaolin which alter the poor structure in cement paste in mortar and concrete. [3]

In this paper widely use of Portland cement for the production of the concrete due to large production of this cement causing the environmental problem also reduction of natural resources. [4]

In this paper author mention that conducting the research on metakaolin gives the replacement of metakaolin by cement of 5 to 15% this studies confirm the partial

replacement of the cement by metakaolin and flyash which result that this metakaolin and flyash effect on strength of concrete. [5]

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Flowchart 1. Methodology

We have studied five different papers on Effect Of Metakaolin and Fly ash on Strength of Concrete. After studying we come to know different method, procedure and result. The compressive strength of concrete increases when addition of metakaolin and Flyash as a replacement of cement in concrete of various percentage. Metakaolin use in concrete than silica fumes because Metakaolin use in concrete than silica fume because Metakaolin and Flyash also useful for making a light weight concrete.

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