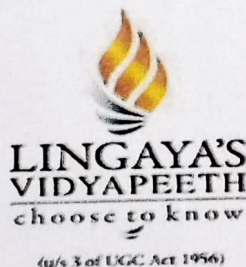


Partial Replacement of Fine Aggregate by Granite Powder

**A Major Project Report Submitted
In Partial Fulfilment of the requirement
for the award of the degree of
Bachelor of Technology
In
Civil Engineering**

**By
Divyesh Vaghasia
(Roll No18CE12L)**

**Under the Supervision of
Chitranjan Kumar
(Assisat Professor)**



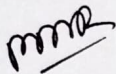
Department of Civil Engineering

**Lingaya's Vidyapeeth
Faridabad (Haryana)
Session2019-2022**

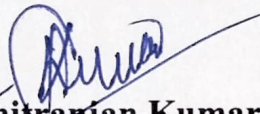
Certificate

This is to certify that the Major project report entitled "Partial Replacement of Fine Aggregate by Granite powder" being submitted by **Divyesh Vaghasia (Roll No18CE12L)** for the partial fulfillment of the award of the degree of **BACHELOR OF TECHNOLOGY in CIVIL ENGINEERING** by Lingaya's Vidyapeeth, Faridabad is a record of a bonafide work carried out by them under my supervision during the year 2022.

The contents of this report have not been submitted to any other University or institute for award of any degree or diploma.



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DECLARATION

I **Divyesh Vaghasia (Roll No18CE12L)** the student of Bachelor of Technology in Civil Engineering during session 2019-2022 at Lingaya's Vidyapeeth, Faridabad, Haryana, hereby declare that the work presented in this report entitled "Partial Replacement of Fine Aggregate by Granite Powder" is the outcome of our own bonafide work and is correct to the best of my knowledge and this work has been undertaken taking care of Engineering Ethics.

It contains no material previously published without referring or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

Divyesh V. C.

Submitted by:

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ACKNOWLEDGMENTS

I would like to thank my guide, Chitranjan Kumar Sir for his very valuable guidance, his support and his critical suggestions throughout the completion of our project.

It was a privilege to study under his supervision. His vision and broad knowledge played an important role in the project work. I also like to thank him for pushing me to the stage that I thought I could never accomplish.

Allow me to express my sincere gratitude to Dr Maniraj M., for his tremendous and selfless support in design of the project and time management skills while fabricating the product.

It is my great honor to have had the opportunity to work with these great minds and their remarkable characters. Their spirit of enthusiasm and commitment even in the times when we students found it hard to do is commendable.

Also, I appreciate the moral support of **Any Other Acknowledgment Name** during our project work.

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Abstract

Granite is an igneous rock which is widely used as construction substance in different forms. Granite industries produce lot of dust and waste substances. The wastes from the granite polishing units are being disposed to environment, which cause health hazard. This granite powder waste can be used for the preparation of concrete as partial replacement of sand. In order to explore the possibility of utilizing the granite powder as Partial replacement to sand, an experimental investigation has been carried out.

The reasonableness of Crushed stone fine (CGF) to supplant stream sand in concrete creation for use in inflexible asphalt was explored. Compressive test was performed on new and concreteified cement. 28 days top compressive strength estimation of 40.70N/mm² was brought about, with the incomplete supplanting of stream sand with 15% CGF, as against estimation of 35.00N/mm², caused with the utilization of waterway sand as fine total. In light of monetary examination and aftereffects of tests, waterway sand supplanted with 15% CGF is suggested for use in the creation of cement. Preservation of waterway sand notwithstanding better methods of arranging squanders from the quarry locales are a portion of the benefits of utilizing CGF.

The percentages of granite powder added by weight to replace sand by weight were 0, 5, 10, 15, 20 and 25. To enhance the workability of concrete 1.2% Super plasticizer (by weight of cement) was added. This endeavor has been done because of the extreme climb in the cost of fine total and its restricted accessibility because of the limitation forced by the public authority of Rajasthan. 36 shapes and eighteen pillars were projected. Compressive strength and flexural strength were found. The test outcomes demonstrate that stone as supplanting sand with rock powder has useful impact on the mechanical properties, for sample, compressive strength, and flexural strength of cement.

Hence in the current examination more accentuation is given to contemplate the concrete utilizing sand substitution by Granite powder and Super plasticizer to accomplish best concrete composite and to expand the utilization of stone powder to conquer the ecological effects caused due to over consumption of stream sand.