

Examining the Potential of Egg Shell Powder as A Cement Replacement in Concrete Experiments

Mr. Pratik Shajirao Dhamale¹, Mr. Ajinkya Tatyasaheb Dhamale²,
Mrs. Harshada Popat Kale³, Mrs. Snehal Bhausahab Godase⁴, Prof. S. A. Patage⁵

PG students, Department of Civil Engineering^{1,2,3,4}

Associate Professor, Department of Civil Engineering⁵

A. B. M. S. Parishads Anantrao Pawar College of Engineering & Research, Parvati, Pune, India

Abstract: *In current days, a common trend exists to decrease usage of normal sources and recycle waste materials. Concrete plays the key position and a huge quantity of concrete in production. Eggshell waste is massive in global and eggshell is made up with calcium so it is allowed to concrete as partial substitute of Portland cement. The purpose of this work is to observe the performance of waste eggshell powder (ESP) as partial alternative of Portland cement in concrete to improve the strength in addition to reuse of waste eggshell powder. Eggshell powder is used in numerous mixtures which can be replaced at 5% intervals from 0% to 20% through weight of cement in concrete. After curing period of 28 days, it is checked for its compressive strength, split tensile strength, flexural strength test and durability test are taken. These are in comparison with a normal mixture which is 0% of ESP and determine the best combination of replacing the material.*

Keywords: Eggshell powder, Concrete and Cement

REFERENCES

- [1]. Amarnath Yerramala, .Properties of concrete with eggshell powder as cement replacement., The Indian Concrete Journal October 2014.
- [2]. D.Gowsika, .Experimental Investigation of Egg Shell Powder as Partial Replacement with Cement in Concrete., International Journal of Engineering Trends and Technology (IJETT) . Volume 14 Number 2 . Aug 2014.
- [3]. M.O.A. Mtallib and A. Rabiou, .Effects Of Eggshells Ash On The Setting Time Of Cement., Vol 3, 12 January 2011.
- [4]. Isaac O. Igwe, Genevive C. Onuegbu, . Studies on Properties of Egg Shell and Fish Bone Powder Filled Polypropylene ., American Journal of Polymer Science 2012, 2(4): 56-61.
- [5]. Praveen Kumar R, .Experimental Study on Partial Replacement of Cement with Egg Shell Powder., International journal of innovations in engineering and technology, Volume 5, ISSN: 2319-1058.
- [6]. Dinesh.N, Ramesh Kumar.R, Arunachalam, Chandrasekhar, Gautam.P (2001), .Partial Replacement of Fine Aggregate by Rice husk ash and Eggshell Powder., International Journal of Innovative Science and research, Vol.3, Issue 1, pp.1-17.
- [7]. Jayasankar.R, Mahindran.N, Ilangoan.R (2010), .Studies on Concrete Using Fly Ash, Rice Husk Ash and Egg Shell Powder., International Journal of Civil and Structural Engineering, Vol. 1, Issue No 3, pp. 362-373.
- [8]. J.Karthick, R.Jeyanthi, M.Petchiyammal (2012), .Experimental Study on Usage of Egg Shell as Partial Replacement for Sand in Concrete., International Journal of Advanced Research in Education Technology, Vol.1, Issue 1, pp. 7-11.