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Strength Evaluation of Concrete Incorporating Marble Waste Powder and Ceramic waste powder

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Abstract: *Cement is a major construction material worldwide. Cement manufacturing industry is one of the carbon dioxides emitting sources besides deforestation and burning of fossil fuels. The global warming is caused by the emission of greenhouse gases, such as CO2 to the atmosphere. And the increase in the concrete demand due to the rapid industrialization and urbanization may lead to a shortage of natural resources. Therefore, the use of recycled material in the batching of concrete will be helpful to meet the demands of the time without compromising the quality of concrete production. One such waste material produced in India is Marble Waste Powder (MWP) that is generated from the marble factories during cutting of the marble stones. Second is the Ceramic Waste Powder (CWP), the ceramic industry inevitable generates wastes, irrespective of the improvements introduced in the manufacturing process. In the ceramic industry, about 15%-30% production goes as waste, which in turn have a damaging effect on the environment. In this project, the cement has been combined replaced by ceramic waste powder and marble waste powder accordingly in the range of 0%, 5%, 10%, 15% & 20% by weight for M-20 grade concrete and their compressive, split tensile and flexure strength of mix is compared.*

Keywords: Marble waste powder, Ceramic waste powder, concrete, etc

REFERENCES

[1]. Amitkumar D. Raval, Indrajit N. Patel, JayeshkumarPitroda, (2013) "Use of Ceramic Powder as A Partial Replacement of Cement", IJITEE, Volume-3, Issue-2
[2]. D. Tavakolia, Heidari*, and M. Karimian, (2013) "Properties of concrete produced with waste ceremic tiles aggregate", Asian journal of civil Engineering, Volume-14, No. -3
[3]. G. Sivaprakas, v. Saravana kumar and lakhijyotisaikia, (2016) "Experimental Study on Partial Replacement of Sand by Ceramic Waste in Concrete", sadgurupublications, Int. J. Chem. Sci.: 14(S1), 266-274, ISSN 0972-768X
[4]. Dr. M. Swaroopa Rani, (2016) "A Study on Ceramic Waste Powder", SSRG – IJCE, Volume-3, Issue-7
[5]. Ali A. Aliabdo, Abd Elmoaty M. Abd Elmoaty, Esraa M. Auda, (2014) "Re-use of waste marble dust in the production of cement and concrete" Construction and Building Materials 50 (2014) 28–41.
[6]. Ofuyatan, O.M., Olowofoyeku, A.M., Obatoki, J. and Oluwafemi, J., (2019). "Utilization of marble dust powder in concrete.", published in IOP Conference Series: Materials Science and Engineering (Vol. 640, No. 1, p.012053). IOP Publishing.
[7]. Gopi, R., (2017), "Study on Marble Powder as Partial Replacement of Cement in Concrete" Global Resey and Development Journal for Engineering, Volume 2, Issue 7, June 2017, ISSN: 2455-5703
[8]. Hardik Patel, Dr. N.K. Arora, Shraddha R. Vaniya, "Use of Ceramic Waste Powder in Cement Concrete", International Journal for Innovative Research in Science & Technology (IJIRST) - Volume 2, Issue 1 - June 2015, pp. 91-97
[9]. Bilaludddin Ahmad, Sabihahmad, Abdullah Anwar, Syed Mohd. Ashraf Husain, (2016) "Re-Process of Ceramic Waste for the Amplification of Eco-Efficient Concrete", International Journal of Advances in Science Engineering and Technology (IJASET) - Volume- 4, Issue 1, pp. 156-160.

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[10]. M Faizan Dhrolwala1, Kaushik Kanani, Divyesh Patel, (2017) "Analysis of mix design of concrete using ceramic waste", International Journal of Advance Engineering and Research Development (IJAERD), NCAN-2017, pp. 30-35