IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 2, April 2022
Impact Factor: 6.252

Experimental Investigation of Concrete by Using Wheat Straw Ash and Bamboo Wood Ash as Partial Replacement of Cement- A Review

Sakshi Masram[1], Dr. S. G. Makarande[2], Mr. A. B. Dehane[3]
PG Student/Research Scholar, Department of Civil Engineering[1]
Professor, Department of Civil Engineering[2]
Bapurao Deshmukh College of Engineering, Sewagram, Maharashtra, India

Abstract: *This study considering the recycling of agricultural/industrial wastes into cement and to bring sustainable and environmental-friendly concrete. In this investigation, studied about the mechanical properties of Wheat straw ash and Bamboo wood ash. The mechanical properties was evaluated in terms of compressive strength test, flexural strength test & split tensile strength test of concrete. Addition of WSA & BWA in concrete by replacement material with different percentage i.e. 5%, 10%, 15% & 20% by the weight of cement. The aim of this study is to check the effect of mechanical properties of WSA & BWA in concrete for sustainable development. During the production of cement involves an intensive use of raw material and energy, while at the same time, releases high quantities of carbon dioxide into the atmosphere. Which causes environmental pollution and greenhouse gases. Thus WSA & BWA can be used as a cementitious material in the replacement of cement in concrete. This one of the effective way to reduce its impact on environment.*

Keywords: Wheat Straw Ash, Bamboo Wood Ash, Sustainable Development

REFERENCES

[1]. Bheel N, Wan Ibrahim MH, Adeyemi Adesina, Charles Kennedy, Shar IA . Mehanical performance of concrete incorporating wheat straw ash as partial replacement of cement. J Build Pathol Rehabil 2021;6(4):1-7
[2]. Vijayvenkatesh Chandrasekaran (2020) "Charecteristics investigation of dry bamboo ash fractional replaced cement in M25 Grade Concrete".
[3]. Bheel N, Ahmed Ali MO,Kirgiz MS, Aneel Kumar (2021) Fresh and mechanical properties of concrete made of binary substitution of millet husk ash and wheat straw ash for cement and fine aggregate.
[4]. Bheel N, Sohu S, Awoyera P, Kumar A, Abbasi SA, Olalusi OB.Effect of wheat straw ash on fresh and hardened concrete reinforced with jute fiber. Adv civil Eng 2021:1-11
[5]. Aksogm O, Binici H, Ortlek E. Durability of concrete made by partial replacement of fine aggregate by colemanite and barite and cement by ashes of corn stalk, wheat straw and sunflower stalk ashes. Construct Build Mater 2016;106:253-63
[6]. Rodier, L. Bilba, K. One'sippe, C. Arse'ne , M. A. " Study of pozzolanic activity of bamboo stem ashes for use as partial replacement of cement", Journal of Materials and Structures,58:87.2017.
[7]. Ikeagwuani CC, Nwonu DC, Obetule DA, Omeje MU, Festus T. "Potential of Bamboo Stem Ash as Supplementary Cementitious Material in concrete production", International journal of Engg Res & Tech 2019;2278:0181
[8]. Al-kadhim Hameed MA, Razzq Alzerjawi AK and Mahdi ZA. "Studying the behavior of the concrete mixture with wheat straw as part of the cement", Journal of Phy: Conference series ,1973(2021)012174
[9]. Memon SA, Wahid I, Khan MK, Tanoli MA, Bimaganbetova M. 2018. Environmentally friendly utilization of wheat straw ash in cement-based composites. (Sustainability), 10(5),1322.
[10]. Adeyemi Oluwasen, Abayomi Emmanuel, Olaolu George and Ayobami Adebola. Engineering properties of paving stones made with Bamboo ash as Partial replacement for cement. International conference on engg for sustainable world (2020)