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Casting of Bricks from Plastic Waste

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Abstract: *The construction industry is one of the largest contributors to environmental pollution, and as such, there is a growing need to explore sustainable alternatives to traditional building materials. One potential solution is the use of plastic waste in construction materials such as plastic bricks. These bricks are made from a combination of plastic waste and binding materials, providing a durable and cost-effective alternative to traditional clay bricks. The use of plastic in construction materials offers several benefits, including the reduction of plastic waste in landfills and the potential for cost savings. Plastic waste can take hundreds of years to decompose, and the production of plastic contributes to the depletion of fossil fuels. By using plastic waste in construction materials, the environmental impact of plastic waste can be minimized, and the amount of plastic sent to landfills can be reduced. Furthermore, plastic bricks are lightweight and easy to transport, which can help reduce transportation costs and carbon emissions associated with transportation. They are also highly resistant to moisture and fire, making them a practical choice for areas with high humidity or fire risk. Despite the benefits of using plastic in construction materials, there are also potential drawbacks to consider. One concern is the potential release of harmful chemicals during the production and disposal of plastic bricks, which could have negative impacts on human health and the environment. Additionally, the durability of plastic bricks may not be as long-lasting as traditional clay bricks, which could lead to increased maintenance costs in the long term. The use of plastic in construction materials has the potential to be a sustainable solution for the construction industry. While there are benefits and drawbacks to consider, on-going research and development in this area could lead to more environmentally friendly and cost-effective building materials in the future.*

Keywords: Plastic Bricks, Sustainable Solutions, Environmental Pollution, Harmful Chemicals, Human Health, Maintenance Costs, Lightweight, Moisture Resistance.

REFERENCES

[1] Dinesh S; Dinesh A; and Kirubhakaran k., Waste Plastic in Manufacturing of Bricks and Paver Blocks" International Journal of Applied Engineering Research, Vol.2 (4), pp. 364-368.
[2] Nitin Goyal; Manisha., "Constructing structures using eco-bricks", International Journal of Recent Trends in Engineering & Research. Vol.2 (4), pp. 159-164.
[3] Maneet P D; Pramod K; Kishor Kumar; and Shanmukha Shetty., "Utilization of Waste Plastic in Manufacturing of Plastic- Soil Bricks" International Journal of Engineering Research and Technology, Vol.3 (8), pp. 529-536.
[4] Puttaraj M.H; Shanmukha S; Navaneeth Rai P.G; and Prathima T.B, "Utilization of Wate Plastic in Manufacturing of Plastic-soil Bricks" International Journal of Technology Enhancement and Emerging Engineering Reshearch Vol. 2(4), pp. 102-107.
[5] Santha Kumar A.R; "Concrete Technology" Oxford University Press. New Delhi.
[6] Daftardar, R. Patel, R. Shah, P. Gandhi, and H. Garg, "Use of Waste Plastic as a Construction Material" IJEAS, vol.4, no.11, 2017.
[7] Central Pollution Control Board, "An overview of Plastic Waste Management" Delhi, pp. 1-22, 2012.
[8] Raj, R.Kotian, N.G. Ashwath. "Study on Laterite-Cement bricks" Project report, K.V.G College of Engineering, Sullia.DK. 2011 -2012.
[9] P. M. Hiremath, S. Shetty, N. Rai, "Utilization of Waste Plastic in Manufacturing of Plastic Soil Bricks" IJTEEE, vol. 2, no. 4, 2014.

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[10] S. Bose, S. Raju, "Utilization of waste plastic in Bituminous Concrete mixes", Roads and Pavements, vol. 3 2004.