

Study on Manufacturing of Bricks by Using Waste Foundry Sand

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Abstract: *The main objective of this project is to utilize waste foundry sand (WFS) from foundry industry in manufacturing of bricks. The entire process of combining clay mixtures, forming of bricks, drying and firing was done with local conditions. With minimum process it was possible to introduce up to 30% WFS in clay bodies to produce bricks of desirable properties. The minimum average wet compression resistance of 5.54Mpa, and maximum average water absorption of 20.76% was obtained for bricks containing 30% WFS, when fired at 900 C. There was insignificant difference in apparent porosity, water absorption, and specific gravity of bricks containing WFS, when compared to commercial bricks. The addition of WFS reduced the bulk density of the bricks, which has also caused reduction in compressive strength. WFS bricks can be classified as class II bricks, based on recommendations of IS 1077 standard specification. These bricks can be used in single storied load bearing structures, and also in the construction of infill walls in multi-storied framed structures.*

Keywords: Red soil , Bagas, n foundry sand etc

REFERENCES

- [1] S. Maithel, Evaluating Energy Conservation Potential of Brick Production in India, Final Report for SAARC Energy Centre, Islamabad, 2013.
- [2] Faster, Sustainable And More Inclusive Growth- An Approach To The 12th Five Year Plan (2012–2013 to 2016–17), Plan. Comm. India, 2011.
- [3] Environmental and Energy Sustainability, An Approach for India, McKinsey and Company, 2009.
- [4] Y. Chen, Y. Zhang, T. Chen, Y. Zhao, S. Bao, Preparation of eco-friendly construction bricks from hematite tailings, Constr. Build. Mater. 25 (4) (2011)2107–2111.
- [5] X. Lingling, G. Wei, W. Tao, Y. Nanru, Study on fired bricks with replacing clay by flyash in high volume ratio, Constr. Build. Mater. 19 (3) (2005) 243–247.
- [6] R. Menezes, H. Ferreira, G. Neves, H. Lira, H.C. Ferreira, Use of granite sawing wastes in the production of ceramic bricks and tiles, J. Eur. Ceram. Soc. 25(7) (2005) 1149–1158