

It was observed that the compressive strength increased up to 2percent replacement of the fine aggregate with PET bottle fibres and it gradually decreased for 4 and 6 percent replacements. Hence replacement of fine aggregate with 2percent replacement will be reasonable.

lightweight concrete, Waste Management. 2010
Feb;30(2):285 90. Epub 2009 Oct 22.

It was observed that the split tensile strength increased up to 2percent replacement of the fine aggregate with PET bottle fibres and it gradually decreased for 4 and 6 percent replacements. Hence, the replacement of the fine aggregate with 2percent replacement will be reasonable with high split tensile strength compared to the other specimens casted and tested.

It was observed that the flexural strength increased up to 2percent replacement of the fine aggregate with PET bottle fibres and it gradually decreased for 4percent and remains the same for 6percent replacements.

Hence, the replacement of the fine aggregate with 2per-cent of PET bottle fibres will be reasonable than other replacement percentages like 4 and 6 percent as the compression and split tensile strength reduces gradually.

5.Future Work

Admixtures can be used to improve bonding of fibres. Utilization of fibres in plastic concrete in various proportions to improve the strength.

Plastic fibres along with steel fibres can be used to improve the strength of concrete. A better way of grinding plastic bottles may be adopted to produce fibres in large scale.

References

- [1] Dora Foti, Preliminary analysis of concrete reinforced with waste bottles PET fibers, Construction and Building Materials, Volume 25, Issue 4, April 2011, Pages 1906 1915
- [2] Zainab Z. Enas A. AL-Hashmi, Ismail Use of waste plastic in concrete mixture as aggregate replacement, Waste Management, Volume 28, Issue 11, November 2008, Pages 2041 2047
- [3] Venu Malagavelli, Rao.P.N, Effect of non bio degradable waste in Concrete slabs, International Journal of Civil and Structural Engineering, Volume 1, No 3, 2010
- [4] G.Murali, C.M.Vivek Vardhan, R.Prabu, Z.Mohammed Sadaquath Ali Khan, T.Aarif Mohamed and T.Suresh, Experimental investigation on fibre reinforced concrete using waste materials, International Journal of Engineering Research and Applications (IJERA) ISSN: 2248 9622 www.ijera.com Vol. 2, Issue 2,Mar Apr 2012, pp.278 283
- [5] Youjiang Wang H.C.Wu and Vitor C.Li (2000) ,Concrete Reinforcement with Recycled Fibers, Journal of Materials In Civil Engineering / Novem-ber 2000
- [6] R.Kandasamy and R.Murugesan(2011), Fibre Reinforced Concrete Using Domestic Waste Plastics as Fibres, ARPN Journal of Engineering and Applied Sciences, Volume 6, No.3, ISSN 1819 6608
- [7] Akazolu S, Ati CD, Akazolu K, An investigation on the use of shredded waste PET bottles as aggregate in