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Bagasse Ash an Effective Replacement in Fly Ash

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Abstract: ***The utilization of business and agricultural waste created by industrial processes has been the main focus of waste diminution analysis for economical, environmental, and technical reasons. The waste product (Sugar-cane Bagasse ash) is already causing serious environmental pollution, which calls for urgent ways of handling the waste. In this paper, Bagasse ash has been chemically and physically characterized, and partially replaced in the ratio of 0%, 5%, 15% and 25% by weight of cement in concrete. Fresh concrete tests like compaction factor test and slump cone test were undertaken was well as hardened concrete tests like compressive strength, split tensile strength, flexural strength and modulus of elasticity at the age of 3,7,and 28 days was obtained.***

Keyword: Sieving, Griding, Buring, Bagasse, Compressive test.

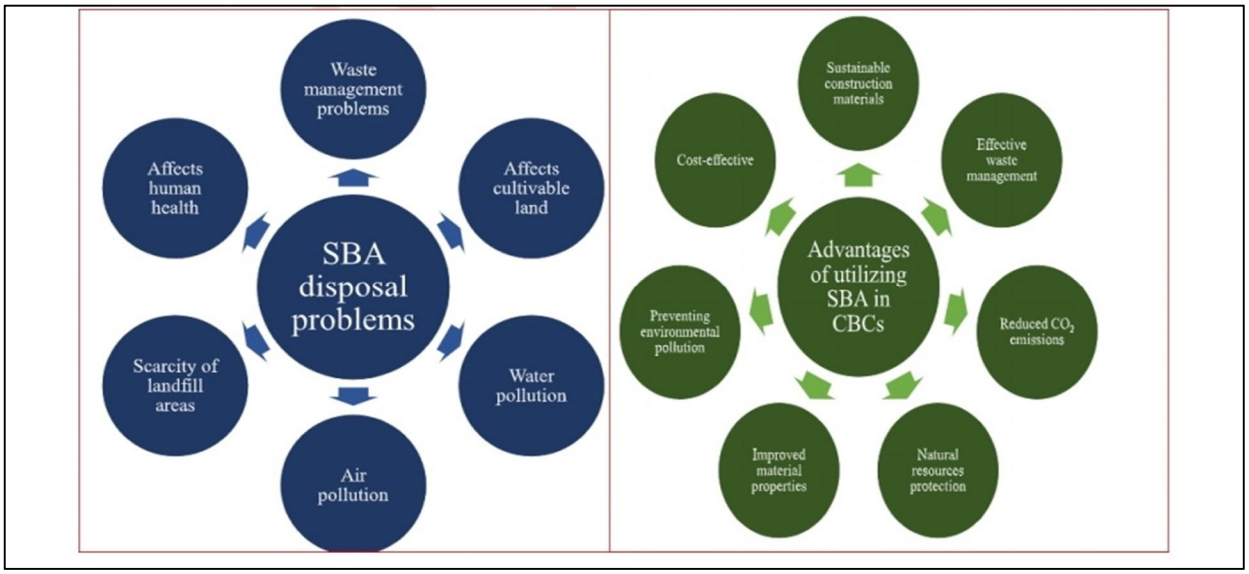
I. INTRODUCATION

Population scenario comes towards India by means of increasing industries. . The fruitful efforts of industries lead to develop India. The survey result coming that the amount of the approximately 250 to 300 million tons of industrial wastes are being produced every year by chemical and agricultural process in India. It is very essential to dispose these wastes safely without affecting health of human being, environment, fertile land, sources of water bodies; etc. Depending on the incinerating conditions, the resulting sugarcane bagasse ash (SCBA) may contain high levels of SiO2 and Al2O3, enabling its use as a supplementary cementious material (SCM) in blended cement systems. Uses of Sugarcane bagasse ash waste in brick can save the sugarcane industry disposal costs and produce a ‘greener’ bricks for construction.

II. MATERIALS AND METHOD

A. Bagasse Ash
B. Water
C. Cement
D. Coarse Aggregate
E. SAND

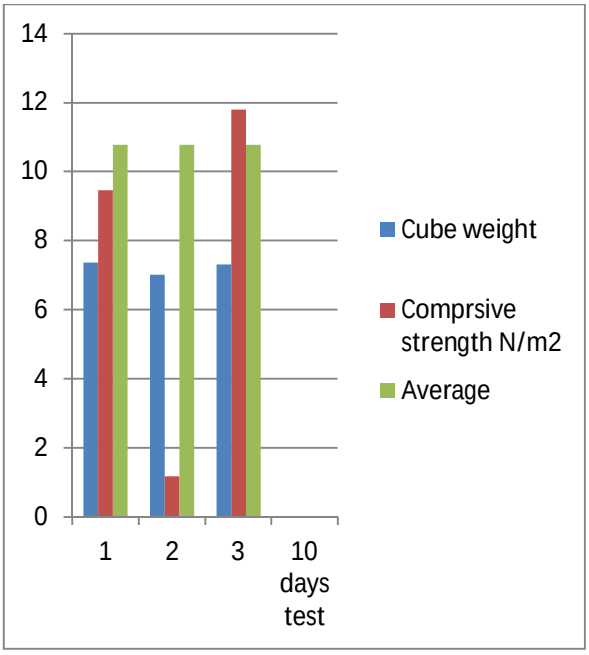
Flow Chart



III. RESULT

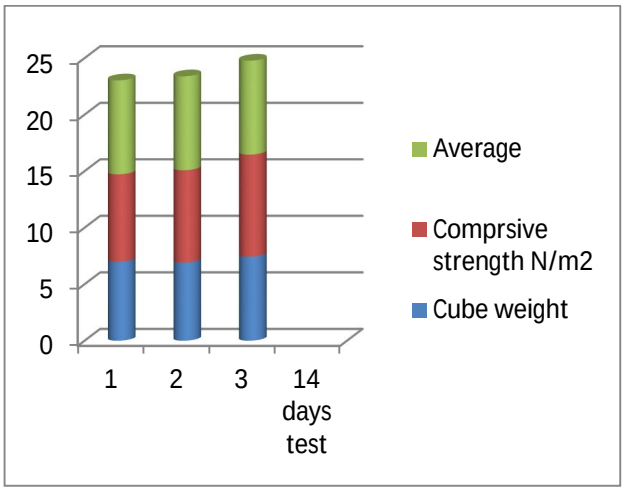
14 days Test 15% Partial replacement of cement by using sugarcane bagasse Ash

Cube no.	Cube weight	Compressive strength N/m^2	Avg.
1	6.982	190/7.74 N/m^2	8.31
2	6.914	190/8.17 N/m^2	
3	7.435	210/9.03 N/m^2	



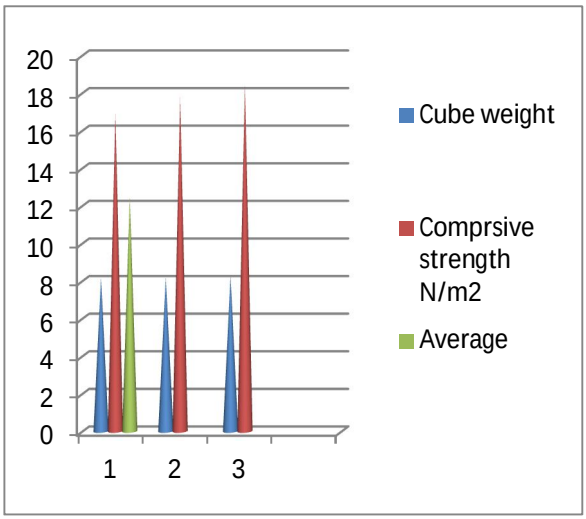
14 days test 10% Partial replacement of cement by using sugarcane bagasse.

Cube no.	Cube weight	Comprsive strength N/m^2	Avg.
1	7.363	220/9.46	10.78
2	7.00	270/1.18	
3	7.312	260/11.8	



14 days test 5% Partial replacement of cement by using sugarcane bagasse Ash

Cube no.	Cube weight	Comprsive strength N/m^2	Average
1	8.180	380/16.88	17.77
2	8.200	400/17.77	
3	8.275	414/18.43	

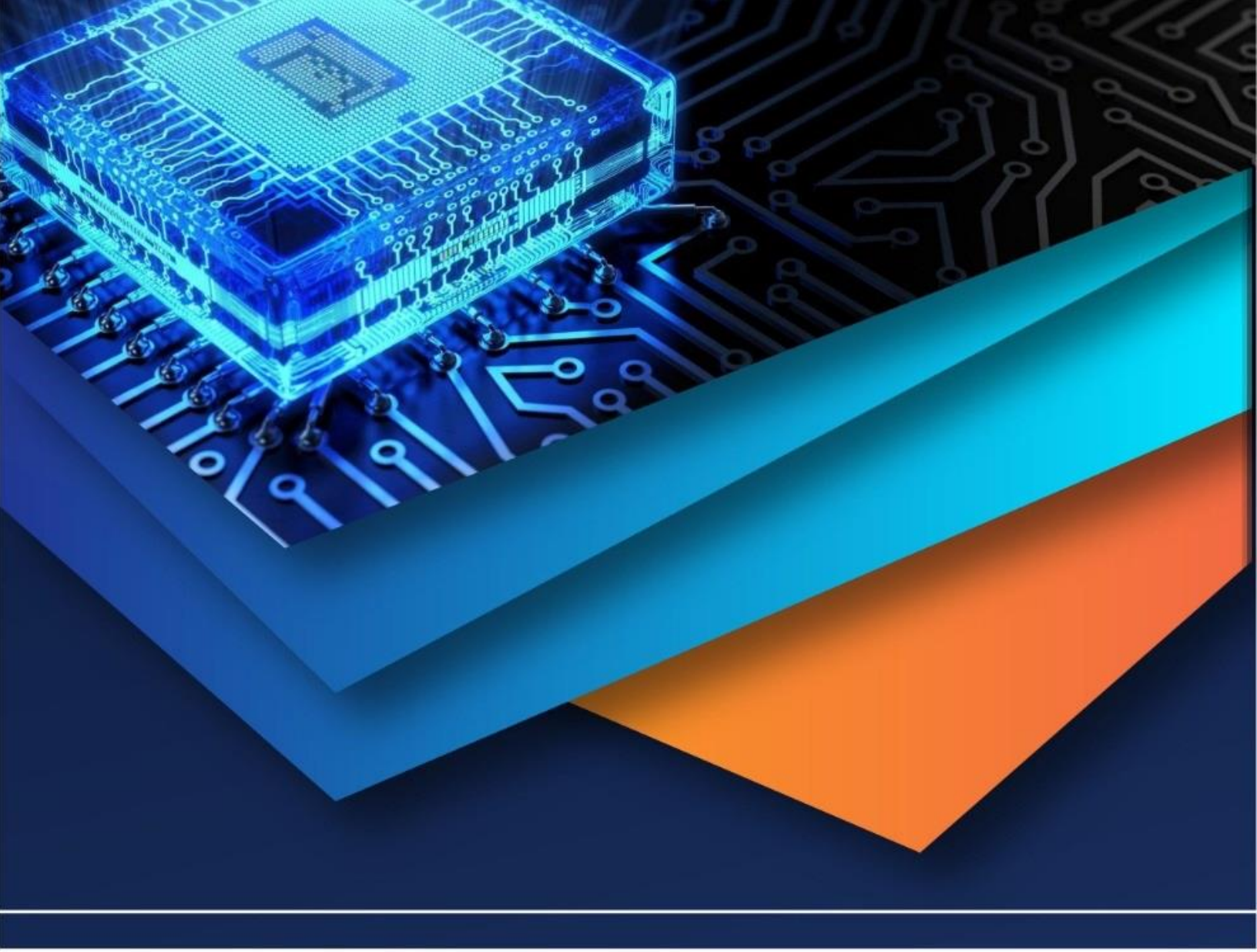


IV. CONCLUSION

The partial substitution of Portland cement by up to 20% of ash in the mixture did not bring about any significant modification in the specific mass of the concrete; the concrete with proportions of SBC in substitution with cement between 0 and 20%, at 7 ,14 and 28 days, indicate the possibility to substitute up to 5% of cement by SBC.

REFERENCES

[1] Lavanya M.R et al., "An Experimental study on the compressive strength of concrete by partial replacement of cement with SCBA".
[2] Kanchana lata Sing and S.M Ali Jawaid,(August 2013) , "Utilization of sugarcane bagasse ash (SCBA) as pozzolanic material in concrete". 17.V.S Ramachandran et al., "Concrete Admixture Hand Book". https://reader.elsevier.com/



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