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A Comparative Study on CLC Blocks and Red Bricks

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Abstract: *The development material utilized in building causes contamination during their assembling. In this paper we intend to show a relative report between red blocks and light weight blocks and their work on the climate. Red blocks are one of the customary structure materials that are being utilized generally in development industry. Strong waste administration is one of the main strategies in the present worldwide assembling plot. This venture is done of using the loss for useful reason under eco-accommodating climate. Froth concrete is one of the kinds of lightweight cement. Any course total doesn't contain in this kind of cement. Lightweight-frothed concrete is use in low strength limit. Functionality is high and low self load of this substantial to accomplish self restoring cell light weight blocks.*

Key Word*: Cellular light weight concrete blocks, Red Bricks, Economical, Green building material*

I. INTRODUCTION

Froth concrete is otherwise called cell light weight concrete "clc", "frothed concrete " light weight concrete across the world with its more noteworthy benefit from 5 years. The world is changing step by step advancements are additionally different with time. Mechanical progression leads business process in all new unique aspect. Country like india is developing rapidly developments structures and strategies are likewise different because of progress in innovation. The new ideas for making divider has been fostered that is cell light concrete (clc) blocks. It is a light in weight, water resistant, fire proof, sound confirmation and eco-friendly. The primary component of this blocks light in weight. Cellular lightweight substantial blocks are made of fly debris concrete and frothing specialist. The clc blocks are relatively lighter in weight and more grounded than normal mud blocks. Since fly debris is creatures aggregated as waste material in enormous amount close to nuclear energy stations and making genuine natural contamination issues.

Fig. 1

II. COMPARATIVE STUDY

S.No	Parameter	Red Clay Bricks	CLC Blocks
1	Raw Materials	Locally avaiable clay	Cement, lime, specially grinded sand, foam
2	Size	225mm X 75mm X 100/150mm	400-600 x 200 x 100/150/200 mm
3	Variation Size	5 mm (+/-)	5 mm (+/-)
4	Compressive Strength (As per IS codes)	3.5 N/mm2	2 -2.5 kg/cm2
5	Dry Density (As per IS codes)	1800 kg/m3	800 kg/m3
6	Cost Benefit	As easily available in local market hence it is beneficiary for low rise structure.	For high rise buildings there will be reduction of Dead weight which leads to saving in Concrete and steel quantities.
7	Fire Resistance (8" Wall)	Around 2 Hours	Around 4 Hours
8	Quality of End Product	Locally made product. Quality depends on various parameters like quality of raw materials used, process of manufacture etc.,	The quality of the end product depends on the foam used and degree of quality control
9	Sound Insulation	Normal	Better Sound absoprtion/insulation as compared to bricks
10	Energy Saving	High thermal Conductivity (0.81 Kw-M/C). So no significant cost savings	Low thermal conductivity (0.32 Kw-M/C) helps in saving electricity costs 30% for heating and cooling of house
11	Environmental Friendliness	One sq ft of carpet area with clay brick walling will consume 25.5 kg of top soil (approx). It actually damages environment	In CLC Block there is no top soil consumption and it emits very low Carbon dioxide as compare to Red clay bricks while manufacturing.

12	Internal and External Plaster	Requires thick plaster surface as there are variations in the dimensions	As these bricks have dimensional accuracy, the internal and external plaster thickness can be reduced
13	Finishing	Very bad	Not linear
14	Joining Process	Traditional mortar needs to be used and the brick work should be cured atleast for 7 days before plastering	Chemical mortars can be used for joining the brick. This reduces the material consumption of cement and also avoids curing process.
15	Availability	Available locally in all cities and villages.	Factory setup cost is low as compared to AAC. Also takes long time to produce if steam curing is not used. Timely availability is a concern.
16	Thermal Insulator	It have low thermal insulation as compare to AAC and CLC Block	CLC Blocks are very good thermal insulator if cooling is an major component of any building monthly expenses it will save cost for entire lifetime
17	Tax Contribution	No Tax Contribution	GST REFUNDABLE
18	Cylindrical Structures	Cylindrical manholes or sewage chambers need small size of bricks so that the curvature can be formed hence Red clay bricks are useful	For Cylindrical structure these blocks are not much useful
19	Water Absorption	Absorb 17 -20% by total volume of red clay brick	Absorb 12-15% of water by total volume of Block
20	Range of Application	They are useful in both load bearing and non load bearing structure	They are suitable for Non load bearing or RCC structure in partition wall

III. CONCLUSION

1. As indicated by our conclusion the compressive strength and density of foam concrete increases with the age.
2. Compressive strength of clc brick is accrue maximum at 2% of foaming agent it gives better compressive strength compare to conventional bricks
3. Substitution cement by waste product fly ash reduce the cost of brick and fly ash is eco-friendly product.
4. Thickness of clc brick is less due to less density it is easy to transportation.
5. The cellular lightweight concrete bricks using foaming agent can be used in framed structure and partition wall.

IV.FUTURE SCOPE

1. The CLC block utilizing frothing specialist can be utilized in outlined construction and segment divider.
2. CLC block can be appropriate for seismic tremor regions as more primary putting something aside for elevated structure in quake and unfortunate soil regions.
3. Eco well disposed and green item. No energy expected for CLC block.

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