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REVIEW PAPER ON "U BOOT TECHNOLOGY"

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Abstract: Slabs are a major component of the structural element for building foundations and there is also a great demand for the use of concrete in most constructions. These are the reasons for the creative development of reinforced concrete concepts that reduce weight and give a longer duration. U boot technology is proposed to obtain large-span slabs or to accommodate heavy loads without beams. This technique is used where the U-boot baton can be placed in slabs with concrete and steel with proper arrangement. U-Boot Baton is a container like formwork structure produced using reused polypropylene, a result of the business for building lightweight wide chunks and pontoon establishments in built up concrete.. One solution is to build a slab with a wide span with more bearing power. The utilization of the U-boot structure assists with diminishing how much concrete and steel expected for laying sections.

Keywords - U Boot, Polypropylene, Slab, Weight Reduction, Voided Slab, Concrete.

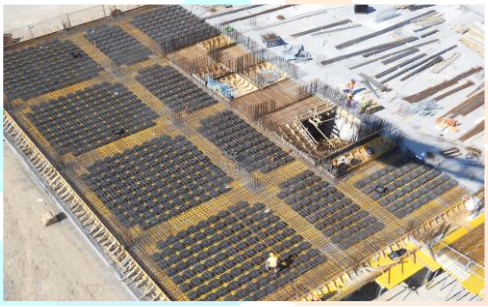
I. INTRODUCTION: In most constructions, the slab is a very important part of the structural element for development. And slab is one of the highest components for concrete use. These are only a couple of the objective setting shareware that you simply can utilize.The U Boot Baton may be a shield made up of recycled polypropylene intended to lighten intermediate slab and concrete rafts. the employment of U boot formwork enables you to form unique mushroom slabs: mushrooms are a part of the thickness of the slab. The U-boot remains immersed within the concrete casting. Thus a grid of orthogonal beams, sealed by flat slabs of various heights above and below, are formed without the implementation of two separate concrete castings, all of which means significant savings in concrete and reinforcement.

II. METHOD OF CONSTRUCTION OF U BOOT: The U-Boot Beton could be a recycled polypropylene formwork. Creating empty slabs and rafts on each side. it's a habit. Create slabs with wide spans or capable. Carrying large loads without beams. a lightweight cellular. Is developed by casting concrete misclassification in solid concrete or mixtures. U boot is employed for a spread of structures. Components, like slabs or foundations. Technically and Economically, they provide solutions for critical design. The U-boot batten formwork is formed as sort of a drunken pyramid of 52 x 52 sq. cm. Usually width and 10,13, 16, 20, 24, and 28 cm tall sandwich. the sort allows to superimpose two or more basic elements loading of varied height components is dispensed. Single baton and double baton are two different variants. Betons When laying single reinforced slabs, single u boot beton is usually used and therefore the double U boot beton is employed to put double reinforced slabs.

u-boot beton

III. MATERIAL USED: U-boot slab consists of three main materials; they're steel, polypropylene and concrete. 1) Concrete: IS 456-2000 has specified the concrete mixes into a variety of grades as M10, M15, M20, M25, M30, M35 and M40. during this project we use the M20 grade of concrete. In M20, M denotes Mix and 20 refers to the characteristic strength (fck) of that blend i.e. 20mpa. Cement, sand and aggregates are used for mixing within the ratio of 1: 1.5 : 3. M20 implies a combination of concrete, sand and total which are ready so that a concrete substantial 3D square of size 15 cm x 15 cm x 15cm made with trademark strength (fck) of 20mpa while looking at it in the wake of being restored for 28 days.The characteristic strength (fck) signifies the strength under which not over 5% of test results are predictable to fail..2) Steel: because it is the miniature model we use the steel reinforcement in Fe500 grade. A 3mm diameter steel bar is employed.3) U-boot: Generally, we used HDPE recycled plastic material to downsize the wastage of plastics as opposed to consuming the plastics.

IV. METHOD OF ARRANGEMENT OF U BOOTS:1. the whole surface of the slab to be sewn site is shuttered with wood deckings (or similar systems), then the lower reinforconcrete bars are positioned in two mutually perpendicular directions per the planning and therefore the lattice for the upper reinforconcrete is arranged. 2. The U-Boot Beton® formworks are positioned using the lateral spacers joints to position them at the specified centre distance that may determine the beam width. because of the conic elevator foot, the-Boot Beton formworks are lifted from the surface, making it possible for the lower slab to be formed. If double or triple elements are used, these elements must first be assembled, which can be supplied on distinct pallets within the yard. 3. The positioning of the reinforconcretes is completed by placing above the U-Boot Beton® formwork the upper bars within the two directions yet the reinforcement for shear and punching where necessary is in step with the planning. 4. The substantial projecting should be acted in two stages to stop the floatation of the formworks: an underlying layer will be cast to fill a thickness skilled the peak of the elevator foot. Casting will continue for this first portion of the slab until the concrete starts to line and become semi fluid.5. Once suitably set, the casting will be restarted from the start line, completely burying the U-Boot Beton®. The casting is then levelled and smoothed traditionally. 6. Once the structure has hardened, the formwork will be removed.



V. CASE STUDY ON U BOOT: . Author Keval Vaghela, Prof. Abhi Mitra, Prof. Vijay Parmar Eatl Vertical Parking - A Case Study of Mahila Baug, Bhavnagar, Gujarat, during this study the event of this building finishes up being on the exceptionally adjusted side as RCC part remunerates with a less costly pace of development restricting the number of shafts and segments and diminishing the profundity of the firm through utilising the U-Boot framework. over again the establishment of Rigofill might demonstrate a bent on being a chunk on the more expensive side however at that time the maintenance and internal control costs are meagre the exhibition is extremely productive and sets aside a good deal of money with regards to effective money management coalitions after getting water. Besides, simple to maneuver and establishment methods add a good deal towards the more splendid side of the above recorded entire interaction, making an eatery within the mix would help connect breakeven focuses very from the get-go in business assisting the proprietor with further progressions of the planning. All things considered, the complete cycle portrayed as a case stud may well be greatly executed in the wording of reasonableness as each one of the many methods is reachable and implementable progressively making it worth taking a go at building construction.

VI.USES OF U BOOT IN CONSTRUCTION:

1. FLAT SLAB :U BOOT will be utilized in a flat slab to scale back its weight and increase the span between to columns. It reduces its overall weight and value of construction.
2. PARKING SLAB :U BOOT in parking slabs are can be useful as it increases the space between two columns and amount of cars parked can be increased.
3. FOUNDATION SLAB : The use of a U boot slab in the foundation reduces the amount of excavation work as it is lightweight.
4. BRIGDE SLAB : Use of U boot in bridge slab can be used to increase the span between to pillers and reduce the use of concrete.

VI. LOAD BEARING CAPACITY: The load capacity of the U boot slab is similar to the conventional slab.

VII. ADVANTAGES :

1.U boot is made up of recycled plastics.

2.U boot is used in the floor slab or foundation slab.

3.It is easy to design, easy technical, and economical.

4.Stress is discharged directly to the beam slab and the load is distributed to the column directly.

5.Foundation load is distributed in two directions in the slab and it is discharged to the pillars and foundation.

6.Pillars spacing is increased and the Thickness of the slab is reduced.

VIII. COST AS CAMPARE TO NORMAL : The U boot slab is 25% cheaper as compared to the conventional slab

IX. CONCLUSION : The main study performed in this paper is about the advantages of the U boot slab. A study is done on manufacturers of U boots and their uses in day to day construction work. From this, we can conclude that the U boot slab can be useful in Flat Slabs, Parking Slabs and Foundation Slabs as it reduces the dead load of the slab those decrease in overall coasting of the project.

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