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LOW WEIGHT STEEL FLOATING STRUCTURE

SAVAN DATTA[1], VRUSHAL AMIN[1], SURAJ BAROT[1], YASH CHAUHAN[1], KRUTIK PATEL[2]

1. UG student, Shankersinh Vaghela Bapu Institute of Technology, vasan, Gujarat -382650
2. PG Student, Pandit Dindayal Petroleum University, Gujarat – 382650

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Abstract: Approximate 5-10 mm sea level rising due to global warming effect. Indirectly due to sea level rising many area of land will be submerged in water is next 20-25 years. In this study we try to construct light weight structures which can float on water. To construct light weight structure we will utilize Steel, Bamboo, barrels. In such a way that structure can float on water without any fuel or instrument. In Shankersinh Vaghela Bapu Institute of Technology our group is going to construct the small scale structure by all the material which is mention above.

Keywords: Floating, Low Weight, Steel, Structure, Barrel

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Corresponding Author: SAVAN DATTA

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INTRODUCTION

All the framed structure or load bearing mainly constructed using concrete. Density of concrete depends upon the basic material required like coarse aggregate, fine aggregate, cement etc. & density all these materials are generally more than one. So, if we construct structure using conventional concrete that weight of structure is very & it is impossible that these type of structure can float or any type of liquid. Nowadays people are working more on light weight structure to reduce earthquake & other dynamic force. Also cost of any structure depends upon the seismic weight of structure[1]

MATERIALS

Fig. 1 Bamboo

BAMBOO

- Bamboo is the fastest growing plants in the world.
- In bamboo, as in other grasses, the internal regions of the bamboo are usually hollow and the vascular bundles in the cross section are scattered throughout the stem instead of in a cylindrical arrangement.[1]

STEEL

- **Steel** is an alloy of iron and carbon and other elements. Because of its high tensile strength and low cost, it is a major component used in buildings, infrastructure, tools, ships, automobiles, machines, appliances and weapons.[3]
- In pure iron, the crystal structure has relatively little resistance to the iron atoms slipping past one another, and so pure iron is quite ductile, or soft and easily formed

Fig. 2 Indian Standard steel angles

DRUM

- A **drum** is a cylindrical container used for shipping bulk cargo. Drums can be made of steel, dense paperboard (commonly called a **fibre drum**), or plastics, and are generally used for the transportation and storage of liquids and powders. Drums are often certified for shipment of dangerous goods. A **drum** is a cylindrical container used for shipping bulk cargo. Drums can be made of steel, dense paperboard (commonly called a **fibre drum**), or plastics, and are generally used for the transportation and storage of liquids and powders. Drums are often certified for shipment of dangerous goods.

LOAD CALCULATION

Sr no.	Member	Unit weight	Units	Total
1	Indian standard 30*30*5	7850 kg/m^3	0.0175	137.6 kg
2	Steel pipe	7850 kg/m^3	0.081	68.8 Kg
3	Barrels	2130 kg/m^3	0.034	73.7 kg
4	Bamboos	1327 kg/m^3	0.029	38.9 kg
Total Weight				319 Kg

RESULT AND DISCUSSION

The design and shape of structure is constructed that it can float on water with dead lad of 319 kg and it can carry upto 1100 kg live load without sinking.

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