

Recommendation

Here are some of the recommendations for future research.

1. Further research needs to be conducted on different species of bamboo in order to pick the best bamboo culm as a rebar. It is appreciated that some species of bamboo are better at different mechanical properties. However, there is a need to have more bamboo tested in order to know what each individual species of bamboo is good for in construction e.g. some species might have high tensile strength and some species might be able to absorb less water.
2. Further research also needs to be conducted for bond strength between bamboo and concrete. At the moment sand is used to improve the bond strength; however, more materials or adhesive needs to be experiment in order to find out what material could be used to improve bond strength.
3. The behavior of bamboo reinforced concrete should be investigated under seismic wave.
4. Further research could be conducted on the straightness of bamboo shoots and compressive strength. Lack of bamboo shoots growing straight causes the culm to fail by buckling before reaching their maximum compressive strength.
5. Cover dimension could be altered since bamboo doesn't rust like steel.
6. Just like steel the percentage of bamboo in concrete should be investigated. For this project the percentage of bamboo was not an issue because the amount of bamboo used was not sufficient to cause over-reinforced concrete. However further research will clarify the percentage needed to reinforce concrete.
7. Different materials of stirrups should be investigated.
8. The behavior of bamboo in three-point bending test was investigated but was not included in this project. However, it will be interesting for future research to investigate four-point bending test in order to see the behavior of bamboo under such condition.
9. Characteristic strength should be made for the design of future bamboo rebar.
10. Durability of bamboo should be investigated in depth over a long time. Durability is a big problem for bamboo and better understanding will help towards the life expectancy of bamboo in construction.
11. The thickness and diameter of bamboo should be investigated further to understand the relationship between thickness or diameter and ultimate tensile strength of bamboo.
Different temperatures should be investigated on bamboo to have better understanding the influence it will have on the tensile and compressive strength of bamboo.

6. ACKNOWLEDGEMENT

All praise due to ALLAH alone and most merciful and the most compassionate, who created men and women and taught, them manners. He best owned us Holy Quran, which is guidance for their believers, and Peace be upon him Holy Prophet “Mohammad” most perfect and the best among us and of even born on the surface of earth, who lightness the hearts of believers in their lives.

I would like to acknowledge the assistance of the following people: -

- Engr. Muhammad Hasnain, INU University, for guidance, encouragement, understanding and supervision of the research without him none of the finding would have been possible.
- Engr. Usman Ghani for their support to Co-Supervise me.

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