

Abstract

Research and development of construction materials from hemp are research and development to improve the strength and flexibility of using shell of hemp which is a fiber reinforced composites. The study and design of the beam-reinforced with shell of hemp are increased flexibility of beam. The study of wood and concrete replacements with hemp in various forms to compared the properties of materials on the market. The development of property forms, including a guide to the products that contain hemp to add value and develop a pattern of deployment.

The enhancement of strength by designing a pattern of hemp shell in the bar area could improve the flexural strength which is higher than the control specimens. In addition, the incubation period of 7 and 28 days showed that the curing time increases resulting concrete has increases flexural strength properties. The hemp concrete blocks have properties in standards and more lighter which has optimum mixing ratio of cement, 20% water, 20% sand, 50% Hemp 10%. Moreover, the produce of hemp board with a mixture of hemp core, foam and acetone which have mechanical properties comparable to Medium Density Fiber Board (MDF) has a mix ratio by weight of the foam, 20% in the ratio of 70% and 30% of hemp core can be produce a ceiling wall and floor panels instead of wood and MDF which can reduce water absorption when exposed to moisture and adds the ability to prevent a fire and Including design, building prototypes using Hemp in construction materials.

