Study of Bagasse Utilization as The Core Material of F.R.P Ships

ABSTRACT

Fiberglass Reinforced Plastic (FRP) is one of material that is often used as an alternative to steel in shipbuilding. Having a lightweight, corrosion resistant nature, and more environmentally friendly makes Naturfiber Reinforced Plastic (NRP) attractive as an alternative material in the manufacture of ships and insulating skin of fish cooler.

In this final project, the research on the use of bagasse as a substitute material in the skin of fiberglass insulation board and FRP fish cooler is done technically and economically.

The results obtained showed the highest tensile strength fiber composite produced is 0.613 Kg/mm² cane or 6.13% of the minimum requirement provided BKI fiberglass and the highest bending strength is 11.84 Kg/mm². So in terms of sugar cane fiber strength, it is not eligible for FRP ships material. The cost of making a composite material bagasse is Rp. 24,998,822,- or 2.7 times more expensive than FRP materials. The thermal conductivity value of bagasse is 0.361 Btu/ft.h.°F, not yet qualified as an insulator. The cost of making insulator coolbox bagasse is Rp 230,100,- cheaper than other insulating materials.

Keywords: Composite Baggage, coolbox, insulators, fish coolers.