

Technology available for licensing under TREMAP scheme
Super Insulated Refrigerated Containers

Background

The refrigerated container trucks are used to store, carry and transport valuable and perishable goods (FMCG products, Pharma products, Fruits, Vegetables, Fish, Meats, Dairy Products etc.) at constantly controlled or recommended temperature conditions above or below freezing point from one place to another or from point of manufacture to market.

The refrigerated containers are manufactured locally by body builders or assemblers or fabricators with no essential technical clarity and no standard

Technology description

The present invention is a fabricated / molded monolithic refrigerated container with minimal fasteners. The container is made up of a shell of polymer composites with a thermoset coating of mixture of (Material not disclosed) and urethane polymer and unsaturated polyurethane foam in between.

Market potential

- The total value of India's cold chain industry is currently estimated at USD 3 billion and reportedly growing at an annual rate of 20-25 per cent. *
- According to government estimates, India has 5,400 cold storage facilities, with a combined capacity of 23.66 million metric tons that can store less than 11% of what is produced *
- The total value for the industry is expected to reach at USD 8 billion by 2015 through increased investments, modernization of existing facilities, and establishment of new ventures via private and government partnerships*

*<https://www.iaccindia.com/userfiles/files/India's%20Cold%20Chain%20Industry.pdf>

Benefits/ value proposition

- The monolithic structure will have extremely high physical properties, and be lightweight, corrosion proof, monolithic, rigid, tough, robust, Insulating properties, efficiencies, etc.
- The cooling time from 40 to -25 degree usually is 6-7 hours but using this technology the cooling time is as small as 30 minutes. As the cooling time is reduced drastically the holdover time increases and thus the diesel usage also decreases vis-a vis the existing technology where the cooling machine remains on the whole time increasing the diesel usage.

Applications

Refrigeration.

Technology status

Patent application in process.

