



Abstract

Name of Institution: De La Salle University - Dasmariñas

Address: Dasmariñas, Cavite

Title: Polyethylene (PE) Foam: An alternative material which can be used in manufacturing personal life preserver.

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Objective of the Study:

General

- To adapt the use of Polyethylene foam as an alternative material which can be used in manufacturing personal life preserver instead of using low quality Styrofoam.

Specific

- To introduce new ways on how to improve the quality of a good life preserver for the security and safety of each person aboard.
- To give additional information on the properties of Polyethylene foam.
- To test and evaluate the efficiency performance and workability of the Polyethylene foam.



Scope and Coverage:

The thesis shall cover the profound analysis on the different properties of Polyethylene (PE) foam which make it suitable for use in lifejacket. It is primarily concentrated on the different test results conducted by the Philippine Coast Guard and the Department of Science and Technology obtained by the researchers as well as the General requirement for lifejacket.

The scope of the discussion also includes the analysis on the selection of the material used in manufacturing lifejacket to ensure the conditions of persons on board especially the protection they need.

Methodology:

The study was made possible through the data gathered by the authors from Southern Agro Export (SAGREX) Corporation, a leading manufacturer of Polyethylene foam products and from the test results conducted by the Philippine Coast Guard and Department of Science and Technology. The researchers conducted interviews with Engr. Rosendo Adaya, Quality Control Head of SAGREX Corporation and Lt. Wilfredo Burgos, Senior Grade of Philippine Coast Guard (PCG) and lastly with Ms. Adelaida Senica, OIC, Polymer and Plastic Division of Department of Science and Technology (DOST).

Major Findings:

There are several materials which can be considered as buoyant material in lifejackets. But from the studies already been develop, requirements for such were still not met. Research and development of new designs continued based on the



experiences of seamen and passengers involved in maritime disaster. Continuing advances in technology opens the door for the discovery of making lifejackets more reliable, this introduces the use of Polyethylene (PE) foam, a closed-cell foam.

Conclusions:

The analysis made led to the conclusion that the use of life preserver is very important to every individual. Lifejackets are required by many states and must be present on all boats traveling on bodies of water supervised by Coast Guard. Critical selection of appropriate material will ensure that the equipment is safe to use and that every individual is safe from any form of accident.

Recommendations:

The full utilization of PE foam as an alternative material in manufacturing life preserver is favorably considered. Since PE foam is a closed-cell foam, it is more appropriate to use in manufacturing personal life preserver compared to the traditional and most commonly used which is the Styrofoam. The structure of it makes it lightweight, flexible and resilient. From the series of test conducted, it was analyzed and evaluated for use in lifejacket.