UNIVERSITI TEKNOLOGI MARA

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MEC299

# PRODUCTION DESIGN RIGID TUBE RIB

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# ABSTRACT

This Project are focuses on how to make all household who had faced problem such as flood to have at least one this boat. Unfortunately, this boat is too expensive for people because of its material. So, from that, the project is to replace the material for the sponson from Hypalon to the PVC pipe to lower the cost. Furthermore, the comparison the material for sponson were made by doing a Pugh method with both advantages and disadvantages. This paper also will talk about how the boat will be made with fiberglass material and the suitable method that will use to construct the boat. The end of this project will get a method to construct the boat using fiberglass and the detail drawing will be made for the next FYP.

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# CHAPTER 1

# INTRODUCTION

## 1.1 Background of Study

Rigid Inflatable Boat RIB is a lightweight but high-performance and high-capacity boat constructed with a rigid hull bottom joined to a side-forming that are inflated with air to a high pressure to give the side resilient rigidity along the boat's topsides. The design is seaworthy, stable, light, and speedy. RIBs are typically between 4 and 9 metres in length, though they can sometimes go up to 18 metres. One or more outboard engines with a power range of 4 to 200 kW are commonly used to propel these boats. RIBs are a viable sailing option for a wide range of applications, including specific applications like rescue vessels, sailing safety boats, and tenders at the service of larger boats and ships[1].

Malaysia has several areas that frequently experience flooding but lack the time to adequately prepare for it. Accidental flooding can happen in location that have never experienced it because of a continuous heavy rain, leaving people with little time to prepare. The purpose of this project is to make a boat that are safe to use for the family or other people. Furthermore, this boat also want will come at reasonable price that a family can buy one each for themselves.

This project is primarily concerned with production design of Rigid Inflatable Boat that investigated by do some researchers that have done by them. It will discuss the boat's material and how they fully exploited it to construct a high-quality vessel. In addition, this research will reveal how the boat was made and what approach will be used to make it.

## 1.2 Problem Statement

Rigid Inflatable Boat are very useful to all type off work to all people depend how they use it. One of the advantages of using this boat is this boat are more stable compared to normal boat. The tubes' buoyancy makes them almost unsinkable and extremely stable.

Regardless this boat has many advantages, this boat is more expensive than a normal boat because the material for the tube which are Hypalon are costly. So, this boat is not widely use among the people who in tight budget. Also, maintaining this boat will cost a lot of money if you want to take care of it properly. Because of that, the rigid inflatable boats are rarely used by the household even though their place are frequently being affect by flood.

There are not specific researched to change the tube material from Hypalon to PVC tube. So, the propose for this project are to help the people

The project's purpose is to modify the boat to become friendly user which is sold at reasonable price that people can buy it. A few parts will replace from the original rigid inflatable boat but will keep their purpose.

## 1.3 Objective

The main objective of this project is:

1. To analyze and design the rigid inflatable boat by using software.
2. To determine the most appropriate materials to replace the sponson material which is Hypalon and proper method to construct the boat.

## 1.4 Scope of Work

The scope of work of this project are:

1. To Determine which materials are appropriate for the construction of a boat.
2. To figure out what method will be used to build the boat.