

**UNIVERSITI TEKNOLOGI MARA**

**STRUCTURE DESIGN AND STRENGTH  
ANALYSIS OF GRP SWATH PASSENGER  
BOAT**

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## **ABSTRACT**

This research focuses on using the Fiber Reinforced Polymer (FRP) Construction Standard as a reference to carefully construct the passenger boat's structure for the SWATH (Small Waterplane Area Twin Hull) class. Ensuring the structure's strength and longevity is the main goal, especially while considering the possibility of wave impacts. One of the most important challenges is figuring out what safety factor is appropriate for the SWATH passenger boat. This requires careful planning for both the overall structure and the frame system. Strict adherence to the FRP building Standard's requirements is upheld during the whole building process, and thorough calculations are performed to assess the frame structure's strength. The results validate the correctness of the design by showing a satisfactory alignment with engineering safety factor requirements.

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