

DESIGN OF AN EMBARKATION LADDER FOR TANKERS/VESSELS IN THE PORT

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ABSTRACT

In Malaysia, walkway ladders used for ship personnel in ports are usually made up of timber. Some ports do not even have proper equipment for ship personnel. Therefore, the main purpose of this project is to design a tower complete with an embarkation ladder for ship personnel during loading and unloading of cargo in vessels in order to cater the needs in local ports. For a ship to undergo loading and unloading of cargo (liquid, solid or gas) the process may take up to one to two days. During the process, a particular vessel is constantly moving in 3 axis (x-y-z) due to the tidal difference, waves, and weight of cargo during loading and unloading.

In order to coordinate with the changes in displacement of the vessel or ship, the designed ladder will be self-adjusted independently to the positioning of the vessel/ship. A steel tower is designed to be connected to the ship or vessel by the embarkation ladder that can be extended or retracted and projected towards the ship. The structure of the embarkation ladder is designed to be lightweight and is able to withstand high tensile strength. This embarkation tower is equipped with innovative mechanisms which will be explained throughout this report.