



SHIP REPAIR GRAVING DOCK



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GRAVING DOCK

What is a graving dock and what is it used for? The word 'graving' is an obsolete nautical term for the scraping, cleaning, painting, or tarring of an underwater body. Combined with the word 'dock' a graving dock refers to an enclosed basin into which a ship is taken for underwater cleaning or repair.

Older graving docks were fitted with watertight entrance gates when closed permitted the dock to be pumped dry. However these gates, hinged on either side, restricted the size of vessels entering and the gates were also difficult to seal and to repair. Later designs of graving

docks incorporated the use of a caisson or pontoon that fitted closely into the entrance. The caisson is flooded and sunk in place and the water pumped out of the dock. Reversing the process the dock is flooded, the caisson pumped dry, floated and is warped away from the entrance to permit passage of vessels.

A graving dock is sometimes called a graving dry dock or just dry dock. It is, however, not a dock. A dock is an artificial basin provided with suitable installations for loading and unloading, close to the sea, where vessels can lie afloat. The dock area may communicate freely with the stream or harbour, or the entrance to it may be closed by a lock or gates.

CAISSON

The primary function of a caisson is a device used for repairing outside damage to the hull at, or below, the waterline while a vessel is afloat. In the case of a graving dock a caisson is an iron or steel structure used

for closing the entrance. It is constructed with buoyancy chambers and ballast tanks so that by means of valves and a pump or ejector the weight of the contained water ballast can be varied at will for floating or sinking the caisson into position.

DRY DOCKING OPERATION

Preparation

After completing all necessary preparatory work, the vessel arrives at the shipyard. On completion of port formalities, the vessel proceeds to the dry-dock with assistance from tug boats and shipyard personnel. Prior to this, the blocks are arranged by the shipyards as per each vessel's specific docking plan.

Pumping Down the Dock and Vessel "Rested" on the Blocks

The water is drained from the dry-dock (generally overnight) over the course of about 10 to 12 hours, depending on the size of the vessel. Before the vessel is rested on the block, specialized dive teams ensure the block structures are in the correct location.

Renewal or Repair of Vessels

Once Vessel is rested in the drydock, all necessary work can commence, such as bottom hull inspection, replating area deemed to be renew by vessel registered classification, washing, sand blasting and repainting of the hull, removal of rudder and propeller for inspection or repairs, renewal of zinc anodes, etc. After all planned work has been satisfactorily completed, the dock is flooded and prepared for the vessel's departure.

Departure and Trials

The flood gate is then open and allow the water outside the caisson to flood the drydock naturally and refloat the vessel. The vessel is then



towed out of the dry-dock with the assistance of tugs and shipyard personnel. Once the vessel reaches a safe anchorage area, sea trials are carried out to confirm the operation of all ship's machinery. On completion of sea trials, the vessel is commissioned back into service.

MY PERSONAL VIEW

With our graving dock located in Tanjung Manis, Sarawak, current largest in the state. We hope with this facility (previously not available in the state) we can offer service and support to large vessel operating in Sarawak water with a reasonable travel distance from vessel location to shipyard, instead of going to Peninsular or our neighbouring country. Hence reducing vessel downtime and saving the ship owner valuable time and resources. We hope by attracting these range of vessel, we can also increase works and jobs for other SBSR sector such as marine product manufacturing, maintenance, repair, and overhaul.

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