

ABSTRACT

Growth of making sea transportation in Indonesia is progressively mount. Because of that, PT. Adiluhung Sarana Segara Indonesia (PT. ASSI) doing development of shipyard to increase result and quality of production. One of way development of shipyard is by building CNC cutting workshop. The workshop build in area with 48 metre long and 14 metre wide. That used as place to cut plates which in form of sheet. In produce process, plate to be used have to be removed from one place to other place. To easier and quick that process, so hoisting equipment is needed. Considering of place for operational is inside a room, so type of hoist equipmet is an overhead crane.

Step of design this overhead crane is cover by election of hoist, girder design, endcarriage design, election of motor for long travel movement, making of detail drawing, and making of material list. This design is also adapted by condition at No. 5 year 1985 of labour minister regulation. Design an overhead crane influenced by some parameter, for example : span of gider, lifting capacity, and speed of motion. At Design process, Msc Nastran and Msc Patran used to facilitate calculation of finite element method.

The results of this design is the design of overhead cranes with a lifting capacity of 5 tons SWL with Top Running Single girder type. Construction on the overhead crane includes profiles WF600 x200 at the girder and Profiles UNP180 x75 on end truck. Long travel speed is 10m/ min with two unit of 1.1hp motor power. The total cost of material used is Rp. 98,886,992, -. This design is used as reference of design for building overhead crane at workshop cnc at PT. Adiluhung Sarana Segara Indonesia.

Keyword :

Overhead crane, girder, endcarriage, hoist, finite element method.