ABSTRACT

IACS (International Association of Classification Societies) has published new regulations for the construction of tankers and bulk carriers of the Common Structural Rules (CSR) since January 2006. In many ways these new regulations are enforced in the development of ship construction, including the loading which is applied more extreme than conventional regulations which exist since the regulation is a combination of regulations made by several classes. In this final task is used as a case study is a 42,000 DWT Bulk Carrier ship that was built using conventional regulations, for fatigue stress were analyzed using MSC Patran software as a preprocessor and software MSC Nastran as a processor. Damage Tolerance method used to calculate the fatigue life of the ship. The results of this study is the age of ship construction is less than 25 years in several parts of the construction. This is because the value of stress that occurs on larger plates were analyzed because the CSR enforced thickness reduction factor due to corrosion so that the thickness of the analyzed plate becomes thinner. In addition the vessel was built using conventional regulation, so the design of construction structures are not as strong as when using CSR regulation, for that there needs to be thickened of the plate and to be strengthened in some parts of the construction.

Keywords : Fatigue life use damage tolerance