

MID-SECTION STRUCTURE OPTIMIZATION OF OIL TANKER BASED ON CSR PRESCRIPTIVE ANALYSIS

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Abstract: Common Structural Rules for Bulk Carriers and Oil Tankers (CSR) issued by IACS provides requirements for loads, hull girder strength, hull local scantling, prescriptive buckling, etc. Literatures show that there are lots of studies on mid-section structure optimization of Oil tanker. However the design constraints in these studies are usually simple instead of considering a wide variety of requirements in CSR, thus the optimization results are not very practical for engineering applications. Since the requirements in CSR are complicated and updated continuously, software by classification societies is designed and used to assess the prescriptive requirements of the CSR. In this paper, MARS2000 by BV is integrated and combined with methods of design of experiment (DOE) and approximate model, to carry out a mid-section structure optimization of Oil tanker. The above strategy and procedure provide an available and effective method for the mid-section structure optimization of Oil tanker based on CSR prescriptive analysis.