

Selection of Composite Materials for the Construction of Large Ships

by

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ABSTRACT

During last decades the use of composite materials in the shipbuilding industry has increased significantly, but still there is not any ship over 130 ft in length built with composites. Moreover, the availability of composite materials has been increased, resulting a similar decrease in their cost, as well as an improvement in their properties. So, it is the time for shipbuilders to consider incorporating composite structural materials in the design of large ships..

In this analysis, an optimum combination of composite materials was selected as the initial baseline for designing a large ship. The analysis was based in similar design concepts as for steel ships, but a different design concept was also proposed for further analysis. For all these structural analysis, MAESTRO[®] software from Proteus Engineering was used.

The analysis showed that a combination of graphite and glass based composites have adequate structural properties for manufacturing large ships with the minimum cost increase.

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