Time for light weight composite materials to enter the commercial shipbuilding.

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ABSTRACT

For a long time the prescriptive rules for safety at sea in SOLAS have excluded other construction material than “steel or equivalent material”, which means that composite materials not could be used since they are combustible. The new code for high speed craft (HSC) does allow combustible materials, provided that they are fire restricting.

This new approach open up the possibility of using light weight composite material for other naval applications than the military where composite materials in ships have been used for more than 30 years. Earlier carried out studies have shown a large potential for light weight sandwich composite materials in commercial shipbuilding regarding the life cycle cost and fuel consumption. The cost break even for a composite ship versus a steel ship was only a few years. At the initial studies the fuel price was just above 30 $ per barrel and now when the fuel price is in a region of 75 $ per barrel the cost benefits are obvious.

The paper presents the resent gained experiences from the Swedish-led project LÄSS “Lightweight construction at sea”, where studies have been carried out on a variety of ship types and with different application of composite materials.