

# Save costs with lightweight ships

## Agenda:

1. Lightweight construction for lower energy consumption during ship operation
2. Cost-effective construction from prefabricated FRP parts without mould
3. Fire protection with the latest FR plastics are very good
4. Certification of complete composite ships as HSC is possible



Our first of 2009: CTV 20x7m / 22 tons / 27 knots / MCA approval

# Save costs with lightweight ships

## 1. Lightweight construction for lower energy consumption during ship operation



**Example 1 ELLEN: The most efficient fully electric lightweight steel ferry: 60x13m, 80% load with 900to displacement**

**Engine power at 14 knots = 1400 kW**



**Example 2 CF602: fully electric lightweight ferry made of composite: 60x18m, 80% load with 310to displacement**

**Engine power at 14 knots = 480 kW**

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## 2. Cost-effective construction from prefabricated FRP parts without mould



**Hot press as an industrial basis for the production of sandwich panels with prepreg cover layers and honeycomb or foam cores in FR quality.**



**With our self-developed bonding machine, ships can be manufactured very cost-effectively.**

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## 2. Cost-effective construction from prefabricated FRP parts without mould



**Bonding of frames, stringers, and outer skin of a 24m CTV**

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## 3. Fire protection with the latest FR plastics are very good

The latest epoxy prepreg resins with a very high proportion of ceramic nanoparticles ensure maximum fire safety.

## 4. Certification of complete composite ships as HSC is possible

Complete FRP ships are approved as HSC since 2000!

Our FRP ships can therefore be easily approved.

**Further details are available at our information desk!**