

Latest information about Nordic Kayaks new Fusion surfski 2009-09-21

First serial produced Fusion surfski in pre-preged carbon is now here! Here below is some pictures and updated information. Exact prices and weights are still not 100% set.

We are positively surprised of the high stability, for example more stable than a V10 but the speed is still very good.

This first ski was made in one piece, but we will start doing coming boats in two pieces so that we could mount reinforcement beams in the case we want that. Marströms (the manufacture) is putting the deck and hull together from the inside so there will be no trace of the joint on the outside.

The hardtop is just being tested and we will soon proceed with building the moulds. There will be a really big cockpit opening with a rim for a spray skirt. The ski cockpit has been proven very easy to remount, test persons that never practise before have easily climb back from the water the first time, this due to the lower rails. We believe that our design of the hardtop will still make it possible for a smooth and fast re entry.

We have had many inquiries from all over the world but we will have these on hold until we have established the first batch of production here in the Nordic region during October. Timing wise this means that we would probably start to export early next year.

/Fredrik Lindström & Peter Bringby, Nordic Kayaks



Fusion pre-preged carbon prototype

Our design thoughts about the Fusion

Fusion is designed and developed for the colder Nordic water and the weather conditions that are most common here. We wanted to have the benefit of a surfski, where you easily could climb back but also the possibility to sit dry when the water temperatures are below "comfort". In the fall '08 we contacted the Swedish kayak designer Björn Thomasson, Björn has a lot of experience from designing kayaks for ocean use, and asked him for help with the hull design and the hydrodynamic calculations. We started trying different surfskis on the market and came up with some parameters that we wanted to focus on for our Nordic surfski:

- High stability/speed ratio
- A positive seating position, meaning more forward leaned
- Sea worthy for our Nordic conditions (2 meter West coast waves)
- Less rocker, better tracking stability
- Lower front (less top volume), less exposed in windy conditions
- Possibility to use a spray skirt to sit dry in the cockpit
- Lower cockpit rails, easy to remount
- A draining system that could be closed and minimise the turbulence
- A solid foot plate that allows good leg drive
- Some storage compartments for light packing
- Easy to switch between ocean rudder and kick up type rudder

After a couple of month's computer calculations we built the first prototype hull that was tested during the winter 2008. With some more hydrodynamic tweaking in Björn's computer we were very satisfied with the combination of stability and surprisingly high speed. At the same time we were thinking of how to solve every other parameter and in particular the possibility to use a spray skirt and also make it smart and easy enough for a serial production.



During this process we got in contact with the well known Swedish boat builder Marström Composite, we quickly reached an agreement regarding building the Fusion. If Marström could manufacture parts for the "Volvo ocean race" boats, we thought that they would be skilled enough to build the Fusion. Together with them and their knowledge about carbon fabrics we found the final solution- a hardtop mounted over the surfski cockpit! This actually gave us two different boats out of one model, a regular surfski or a hybrid ski with a cockpit rim allowing you to be dry and safe all the year around. The opening on the hardtop is 110 cm long and designed so that it is easy to remount in to the cockpit.



The foot plate and steering system is something we have been testing a lot and we believe we have come up with an innovative new design! The hole foot plate is in one piece with the pedal section made in a thinner carbon laminate allowing them to flex, just so much you need to get full steering potential. Well fitted you can push hard with your legs without any unnecessary steering, the pedals will get back to be straight when not touching them, making it easy to hold the tracking.

We hope you will find our Fusion interesting, we believe it is a great boat with smart and innovated ideas that will make you a better and safer kayaker!

What is special with our building methods for the Fusion?

Marström Composite in Västervik Sweden, the builder of our Fusion ski, is the world leader of developing pre-preged carbon hulls and spare parts to the sailing and flight industry using autoclave technique. An autoclave is a big oven that heats up the pre-preged carbon fibers to an optimal temperature around 125 degrees under 6 bars vacuum pressure making the laminate harder and stronger than normal procedures.



Masrtröms autoclave, one of the biggest in Europe

Pre-preg carbon means that the carbon fiber is pre filled with epoxy to ensure the perfect mix of epoxy and carbon fiber, about 30% epoxy and 70% fibers. This makes the carbon extremely light and very strong compared with regular methods such as vacuum infused laminate where the mix of fibers and epoxy at the best is 60% epoxy and 40% fibers. It is comparable with building a house ground with less reinforcement and more concrete. You don't get the full potential out of the material!

Marström is using female moulds that are perfectly matched together allowing them to join the hull and deck together with a special and strong method that leaves no trace on the outside, only a flat surface of carbon laminate.

All kayaks are sprayed with transparent varnish that protects the fibers from UV light and ensure that the material stays the same true many, many years. It also gives it that cool jaded carbon look.



Fusion can be made in several different carbon options depending on how the ski is going to be used

Elite lay up

Pre- pregged carbon layers with the right mix of fibers in different directions to achieve the right stiffness at the right places with minimal weight. Core material of Nomex makes it possible to use less laminate and still get a very stiff hull. This is for race use only and should be handled with care and not hit hard sharp object. Weight... very light!

Standard lay up

Pre- pregged carbon layers with the right mix of fibers in different directions to achieve the right stiffness at the right places with minimal weight. Smart reinforcement stringer makes the hull stiff and strong. This lay-up is best suited for ocean kayaking. Weight around 11 kg.

Multi lay up

Pre- pregged carbon layers with the right mix of fibers in different directions to achieve the right stiffness at the right places with minimal weight. Extra laminate instead of stringers gives a very strong and flexible hull. Suits you who wants an all round kayak. Weight around 13 kg.

Facts Fusion

Producer: Nordic Kayaks www.nordickayaks.se

Design: Björn Thomasson & Fredrik Lindström www.thomassondesign.com

Manufacture: Marström Composite AB in Sweden www.marstrom.com

Length: 625 cm

Width: 43 cm

Rudder: hydrodynamic ocean rudder or /and kick up type

Steering: new innovative pedal steering, one piece plate

Hatches: 3- back deck, cockpit and front deck

Draining system: Andersen self bailer

Weight: 8- 13 kg

Material: pre- preg carbon in different laminate options

Options: regular surfski or hybrid ski with hardtop

Hardtop: opening 110 x 41 with cockpit rim for spray skirt (recommended to be permanent mounted)

Standard set up: as a surfski with self bailer, ocean rudder and one hatch in the cockpit

Price: approximately 3200 Euro, standard set up