What is it, “Ferrocement”?

Constructing a boat hull from ferrocement is a strong, flexible, and durable construction.

Ferrocement is a technical term that should not be confused with reinforced concrete. It can be defined as a composite material, which consists of a bond of wet cement mortar and a structure of continuous steel grid layers, which were sunk into the mortar mass, according to the classic principle of reinforced concrete. The basic parameters that characterize ferrocement are the clean steel mesh structure and its distribution sunk in the mortar, the steel mesh covered by the mortar and the relatively high quality of the mortar.

Ferrocement behaves in its load-bearing properties like reinforced concrete. The main difference is that with ferrocement, any crack formation is delayed by the fine distribution of the layers in the mortar. This makes the material attractive for shipbuilding and it has been found that if cracks occur, a large network of thread-like cracks is created which, in combination with the high alkalinity of the cement-rich mortar, prevents the cement from corroding. The main advantages of ferrocement are the low maintenance requirements due to the good resistance to rot and corrosion. In the case of yachts, weight is of little importance; for a boat over 15 m, the weight will hardly be higher than that of a steel boat of the same size.

One can therefore ask why the use of ferrocement is not more extensive. This is mainly due to three factors:

• bad advertising due to bad constructions by amateurs

• The publication of exceptional results in terms of the solidity and low price of the constructions in the early stages, which in some cases could not be proven

• The significant increase in labor costs in developed countries, which has an impact on what is generally considered to be labor intensive material. Nowadays, however, with the growing supply of ferrocement construction techniques, labor costs shouldn't be that important.

Except for the construction of yachts, many fishermen's ships were built with ferrocement hulls since the speed of the ship is not important for professional fishing.

Here is my view and experience.

When I was seeking to buy my new sailboat, building with ferrocement was an avant-garde practice.

Previously I had a 10m aluminum yacht. When I wanted a bigger yacht where I could stand upright inside, including comfort for my enlarged family, I didn't want it made of plastic (osmosis, too light and fragile) or wood (a lot of hull maintenance), but something very solid. The ferrocement yacht chosen was also suitable for me, as I knew that it was built by professionals at a shipyard.

Ferrocement boats were often built by people with little shipbuilding experience and in their garden because of cheaper material costs.

My yacht was built by a professional shipyard based on the project of an architect, model HORN 55.

The hull is certainly made of Ferrocement, but the entire upper structure, deck, etc. is made of wood, mostly teak, easy to maintain. The interior of the ship, on the other hand, is made of fine solid wood.

NEGATIVE

• Not easy, 35 tons for 18 m

• Not very quickly. I do a maximum of 8 knots with the engine and 10 with the sail

• When anchoring in rough seas, it is recommended to use 2 anchors because of the weight set. One person can perform the entire maneuver.

• Motor not very strong, only 90 HP and not too quiet, but tailored to the yacht.

POSITIVE

• Ocean-going yacht built for all seas

• Antifouling the hull like any other boat. We use “COPPERCOAT” that lasts up to 10 years

• If you ever run into a reef, seawater never gets in and the repair is done with either cement or epoxy. You can do it yourself, or any handyman.

• The hull is difficult to break due to the enormous resistance of the ferrocement.

• Very calm at anchor

• Pleasant navigation even in rough seas

• Classic Ford engine, marinated, easy to care for

Boat for sea lovers, alone or with family, even to live there permanently.