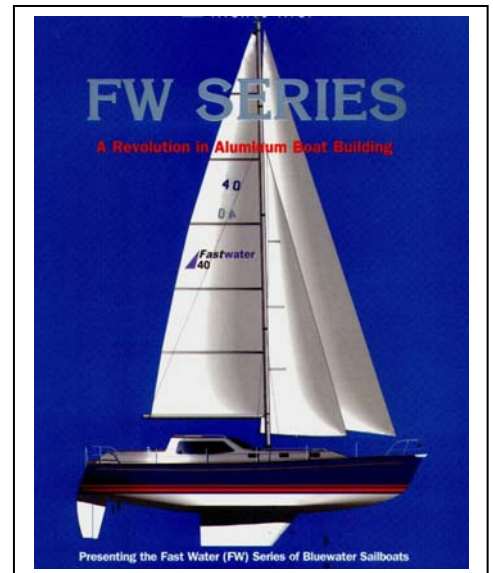


Computer Engineered to Exacting Standards for Superior Strength and Longevity

Since the 1930s, aluminum alloys have been used extensively in the construction of commercial vessels and warships. Over time, aluminum has proven to be a substantial improvement over all other boatbuilding materials.



The superiority of aluminum has become increasingly evident in recent years as stringent government environmental protection regulations, have been introduced in the U.S. due to toxic emissions released during fiberglass construction. Complying with the new rules has resulted in escalating costs of building in fiberglass.

Enter aluminum as the new construction material of choice for boatbuilding. Aluminum is many times stronger than fiberglass and up to 50% lighter than steel. However, prior to the introduction of the Eurotech construction technology, the complexity, labor, skill and tooling involved with aluminum boatbuilding have limited its wide scale usage.

Not since the introduction of fiberglass as a boat building material has a technology emerged with the market appeal and economy of production possible with Eurotech's construction methods. Utilizing Eurotech technology, durable, long-lasting aluminum boats can be constructed **rapidly** with dramatically **reduced** production costs.

The result of over five years and several million dollars in research and development, Eurotech technology focused on building Fast Water (FW) Series hulls in the largest sections possible, out of a single sheet of aluminum (**one sheet per half hull**).

Utilizing waterjet cutting methods and sophisticated computer software, Eurotech avoids the drawbacks entailed in the fitting and welding of numerous plates, including heat distortion, grinding marks and uneven surfaces.

This new system produces Power and Sail Yachts which are perfectly fair, accurate to within 1/16", and much stronger than those compromised by numerous joints and welds. And combines the superior strength and longevity of aluminum with exacting design and ergonomic deck and interior layouts, for a comfortable, safe and relaxed cruising experience.

Now Custom one-off Sail, Power, Gulets, Mega Yachts and Commercial, Military and Search & Rescue vessels can be built at a cost that equals or betters that of GRP production.



Aluminum versus GRP

Can aluminium complete with fiberglass as a production hull material

In terms of cost, aluminum construction is about equal to solid fiberglass construction – yet stronger, and is less costly than foam or balsa cored fiberglass construction. Therefore, as a material it can outperform fiberglass on a cost basis. In terms of weight, aluminum construction is lighter than solid fiberglass when comparing the materials on strength basis, and is about equal in weight to cored fiberglass construction. Thus, it is very competitive with advanced fiberglass laminates – yet at a substantially lower cost. Aluminum is not only an ideal material for building a lightweight boat, but it lends itself to new advanced computer aided design and manufacturing methods (CAD/CAM) of fabrication which reduce cost by simplifying construction and the elimination of excessive man-hours traditionally experienced with aluminum boat construction. Considering its strength and durability, an aluminum boat with correctly applied protective coatings, adequate zincs, a proper electrical system, and good care over time, will last indefinitely.

Furthermore, additional cost savings are realized in that aluminium manufacturing methods don't require the construction of plugs and molds, which are typically required by fiberglass boat builders. Therefore, both the high cost and long lead-time required to develop these tools are eliminated and the cost savings can be passed onto the consumer.

Durability and Repair

Aluminum has great toughness. It will survive impacts that neither steel nor fiberglass will survive. In cases of heavy impact, steel or fiberglass will rupture while aluminum will merely dent. Like steel, aluminum has considerable ductility, i.e. the ability to withstand permanent deformation without rupture. It is one-third the modulus of elasticity of steel, thus it absorbs the energy of any impact over a greater distance than steel.

Therefore material stress levels are considerably less than would be the case in steel. Fiberglass, on the other hand, is extremely brittle and thus is subject to cracking and fracture upon impact.

Aluminum boats are much easier to repair than fiberglass boats, particularly fiberglass boats with internal fiberglass liners. With aluminum, dents can often be pounded out with a hammer, but if necessary, sections of a plate can be cut out with a saw and simply replaced. Information was received of a repair that was carried out on a 50 foot aluminum boat that had been driven onto a rock at 18 knots in a matter of a couple of man-days of work. A similar fiberglass boat might well have sunk, and probably would have been damaged beyond economically feasible repair. Aluminum also presents the option of not having to paint the hull's topsides above the waterline, which eliminates the care and maintenance typically required of gel coated paint surfaces. This is not only of particular interest to the commercial market but to the experienced yachtsman as well.

AluminumNow - Custom Yachts, Commercial & Military Vessels

New Paint coatings using Ceramics are available using a positive charge systems for underwater areas (and indeed topsides and deck if so desired) with a molecular linked or bonding system which will allow the use of conventionally anti-fouling coatings and prevent damage from other vessels in a harbour or marina.

Flammability

Aluminum does not burn. Fiberglass boats contain petroleum-based resins, which burn energetically. Fire retardant resin makes them harder to "light", but nonetheless the burning is energetic once started.

Ease of Customization

Since aluminum boats are not built from molds as are fiberglass boats, changes in design, modification in the location of bulkheads, size of cabins, etc. are all accomplished much more readily than with fiberglass. Cutting and welding or drilling can relocate hardware with ease. With the advent of computer-aided design, custom hull shapes and arrangements can be provided at prices competitive with low-volume production runs.

Corrosion Resistance

The salt water corrosion resistance of 5000 series Aluminum alloys is excellent and has been demonstrated by the Aluminum Company of America (ALCOA) in a thirty year test from the mid 1930's to the mid 1960's at which time a section of an aluminum hull was retired from its test site in Narragansett Bay because so little was happening to it. Corrosion problems with aluminum boats can usually be traced to either the use of improper alloys or galvanic or electrolytic corrosion, all of which may be easily eliminated through proper material selection, proper wiring, bonding, and isolation procedures.

A new marine alloy has been developed in Germany that is 27% stronger than the 5086 alloy traditionally used in this industry. The alloy formulation also renders it much more resistant to a saltwater environment.

You may expressed your concern regarding the subject of electrolysis. This is deal with on three different levels.

- 1) Elimination of dissimilar materials under the waterline
- 2) Electrical systems engineering (isolation transformer/floating ground etc.).
- 3) Protective coatings (high adhesion ceramic)

New Technology

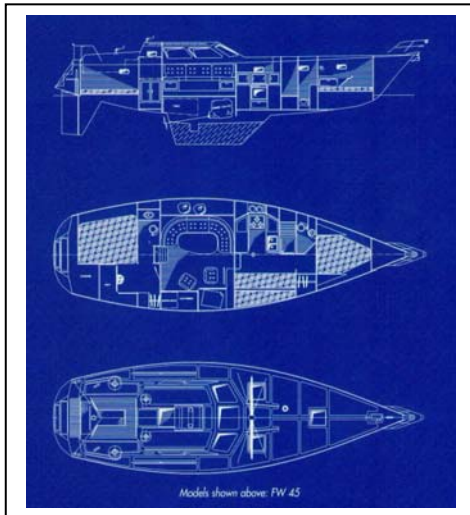
A new production process has been developed that revolutionizes the aluminum boat building industry. The process includes:

- Software that is able to cut the development time involved in moving from design to manufacturing.
- A production process that involves the cutting, welding and finishing of aluminum hulls in as few steps and pieces as possible.
- This process takes hundreds of man-hours off the post-production process of finishing the exterior of the boat by having less seams and weld marks to fair out of the hull.
- Vessel can be finished in Florida or shipped as complete kits ready to be constructed at any location in the world.

This new technique has been developed over the last six years and is considered to be a revolutionary aluminum boat building process. This process includes the use of purpose specific software, operating in tandem with a robotic cutting table in order to allow the

AluminumNow - Custom Yachts, Commercial & Military Vessels

fabrication of boat hulls that are optically perfect and accurate to within 1/16 of an inch, out of a single sheet of aluminum. Using this new innovative construction method, hull fabrication only takes approximately 3 days and with approximately 2000 labor hours less than conventional aluminum boat fabrication methods. Because the hull is pulled smoothly into shape from large sheets of aluminum, rather than welded together in multiple sections, enormous labor savings are realized over the conventional piecemeal welding method, where numerous seams as well as heat and bending distortions cause a necessity for time-consuming fairing in order to achieve an acceptable finished product. In this refined new method for instance, no filler is required for cosmetic purposes to finish the hull, compared to an average of 20 gallons of filler needed when using the conventional aluminum construction process for a 40' boat. The result is that this new method allows the building exceptionally durable pleasure yachts and commercial vessels at substantially lower costs than previously possible.



<<This is a sample of a stock design however all yachts are available in a custom format to our clients needs and desire for no extra cost.

The FW 45 above is an owners version with three guest cabins. A charter version can be provided with four(4) guest cabins likewise a owners version with main cabin, owner's cabin, study and forecabin can be offered. The prospects are unlimited.



AluminumNow is please to introduce the exciting world of the Ultimate Yacht based on the proven hull designs of Incat of Australia.



Designs in Power - Sail both Mono & Cat



Shipbuilding alloy AA5059 ALUSAR

A large research programme to develop advanced material for the shipbuilding industry has been established at Corus Research, Development and Technology. As a part of this programme a wrought Al-Mg alloy plate which is significantly stronger than AA5083 has been developed. Although stronger, this alloy has corrosion resistance and formability similar to those of AA5083. The Aluminium Association has given the alloy designation AA5059 for Alustar. The figure above summarises the improvements in minimum mechanical properties realised by Alustar and AA5383 alloys with AA5083 alloy's minimum values taken as the reference.

The most outstanding achievements are:

- a 26% increase in the yield strength before welding and
- a 28% increase in yield strength (with respect to AA5083) after welding of H321/H116 temper plates of the Alustar alloy.

Arguments for Alustar

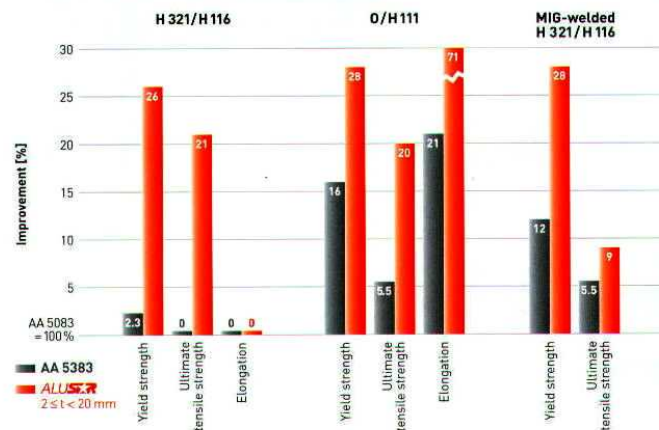
- **Safety aspect:** at least 20% stronger before and after welding than the common shipbuilding aluminium alloy AA5083.
- **Quality aspect:** bendability and weldability similar to AA5083.
- **Durability aspect:** high corrosion resistance.

Exciting options for ship design and construction.



Alustar AA5059 and AA5083, MIG-welded with AA5183 filler wire after ASSET test (ASTM E661).

Figure 4: Improvement of minimum mechanical properties of Alustar AA5059 in comparison to AA5083 (=100%) and AA5383 (thickness range: 2-40 mm).



For Further information on:-

The Fastwater Series of Sailing and Power designs.

The Ultimate Catamaran Mega Yachts.

Catamaran High & Medium Speed Ferries and Commercial Vessels.

SAR, Military & Patrol Vessels

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Note:- All vessels Commercial & Pleasure are semi-custom or custom designed to our client's requirements.