

Superior Stainless Supply Megayacht Swift 141



Megayacht Swift 141 built by ADMShipyards in Abu Dhabi and due for launch in late 2011

The Swift 141 is a Megayacht of epic proportions, due for launch in late 2011. At 141 metres it will immediately take its place among the elite of its kind, ranking as one of the largest private yachts in the world, the largest aluminium composite material substructure and 6th on the Top 100 Superyacht list.

The Vessel, styled by Paris-based Pierrejean Design Studio and built by ADMShipyards in Abu Dhabi, has been built off the hull of a former Royal Dutch Navy S Class Frigate sold to the United Arab Emirates in 2008.

New Plymouth based fabricators Superior Stainless have been contracted to supply a number of projects on the build such as the ships aluminium port hole spacer rings, two aluminium mooring doors, three mirror polished gangways, three aluminium gangway doors and 24 aluminium mooring rope reels. The components involved in excess of 12,000 production hours and will be shipped to Abu Dhabi later this month.

Derek Drinkwater General Manager believes New Zealand's reputation in the marine industry is synonymous with quality. "We were chosen for these various projects because of our highly skilled technical ability and late model production equipment. Our in-house CNC machine shop means very Continued on page 3..."



One of two Aluminium Mooring Doors produced by Superior Stainless In New Plymouth

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Considerations When Designing With Aluminium

Aluminium and its various alloys are truly versatile engineering materials. Their applications are as varied as electrical, packaging and transport to aviation, construction and whiteware. Without their existence many industries would not be economically viable, such as commercial aviation, where 70% of civil aircraft airframes are made from aluminium.

Aluminium's unique attributes such as its superior strength to weight ratio, ease of machining, corrosion resistance, low toxicity and high thermal and electrical conductivity are key to its commercial advantage over other metals. These unique characteristics should be taken into account when designing with aluminium.

Strength to Weight: Aluminium has a density of approximately one third that of steel, 2.700 kg/m³. Aluminium alloys typically have a tensile strength of 70 to 700 MPa, those used in extrusion are generally around 150 to 300 MPa.

While most aluminium alloys experience a greater elastic deformation than that of a steel part of identical size and shape. Aluminium can be extruded into more complex profiles, which enable stiffer and lighter designs to be achieved with aluminium alloys than with steel.

Temperature: At low temperatures, unlike steel, aluminium is not brittle, rather its strength increases. At high temperatures however aluminium's strength decreases, the impact of weakening should be taken into account when temperatures continuously exceed 100°C.

Expansion: Aluminium can have a relatively large coefficient of linear expansion compared to other metals. In some

applications this should be taken into account in the design.

Conductivity: Aluminium is an excellent conductor of heat and electricity. Aluminium can have a similar conductivity to copper at half the weight.

Fabrication: Aluminium is very easy to fabricate and requires a lower energy input compared to many other metals. Most machining methods can be used on aluminium such as drilling, cutting, punching, bending and milling.

Aluminium Tensile Strength (MPa)

Alloy & Temper	Thickness (mm)		Ultimate		Yield		Elongation % min in 50mm	
	Over	Up to	Min	Max	Min	Max	5005	5050A
6060 T5		12		150		110		8
	12.0	25		145		105		6
6063 T5		12		151		110		8
	12.0	25		144		103		6
6063 T6		25		205		170		8
	25.0	150		185		160		10
6106 T6		10		235		210		8
	10.0	25		205		170		8
	25.0	150		185		160		10
6261 T5 or T6		All		295		255		7
6061 T6		All		262		241		8
6061 T6511	175	All		260		240		10
6082 T6511	5.0	150		310		260		8

Meet The Team



O'Ryan Smith

O'Ryan joined NALCO Customer Services in early 2009, servicing the Auckland and Northland regions. If you reside anywhere near either of these and placed orders you'll likely have dealt with O'Ryan.

Having joined us from a similar role within the aluminium industry, he has a sound knowledge of aluminium and

enjoys finding the best solutions for his customers. O'Ryan loves the customer interaction, interesting and varied work his role brings, from quotes and sales to training and purchasing everyday holds something new.

O'Ryan joined the ranks of fatherhood in December and outside of work enjoys playtime with his daughter Savannah and when time permits cars, cooking, DVD collecting and Facebook games.



Superior Stainless cont..

little work is outsourced, keeping our costs down and maintaining quality control." Over the past three years, this has seen Superior Stainless build relationships with a number of the worlds largest super yacht designers and builders, supplying various components and projects.

NALCO supplied aluminium for the projects, providing some of the sections pre cut. "NALCO have been great in the fact that they have a CNC router and can supply our sheet pre cut, which saves us time and makes our job a lot easier" said Mr. Drinkwater.

Their facility in Bell Block New Plymouth, was purpose built to accommodate all types of industry from kitchen, marine and general fabrication through to dairy oil and gas industries. Their success in this sector is a result of their commitment to quality.



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