



# Marine Alloys

5059 5083 5086 5454 5456

Sheet, Plate, Rod, Bar, Pipe, Tubing & Extruded Shapes



Charleston Aluminum specializes in marine-grade alloys. Whether you are a builder or supplier of Navy ships, passenger ships, work boats, pleasure crafts or even submarines, we maintain an extensive inventory of sheets, plates and extrusions. We support a complete line of marine alloys, to meet your ongoing needs. Customers also have the option of certified and registered marine alloys through certification registrars such as, ABS, LLOYDS or DNV.

Charleston Aluminum has distribution centers in Gaston, South Carolina and Miami, Florida. We also offer a wide range of secondary processing services, with expeditious order fulfillment and competitive pricing.

Additionally, we present quick order fulfillment and in many cases, same day delivery via our company-owned fleet of vehicles. We deliver across the United States and Canada, while also providing global shipping options.

We also stock the following alloys for other applications and uses:  
5052, 5059, 5083, 5086, 5454, 5456, 6061, 6082

Stainless steel 316/316L, 321, 13-8, 15-5, 15-7, 17-4 & 17-7  
ABS Grade A, AH and DH carbon steel alloys.

Charleston Aluminum is a certified SBA Small Business, a Defense Logistics Agency (DLA) bulk-metals QSLD supplier (Cage Code 34FP9), and additionally, SAM registered and certified to ISO 9001:2008 - AS9100C.

## Charleston Aluminum provides:

- The highest quality metals, aluminum, brass, copper, stainless, alloy steel, carbon steel, titanium, and other hard-to-find materials.
- Sheet, plate, pipe, tube, bars, and structural shapes.
- Services such as, cutting to size, shearing, heat-treating, PVC and paper interleaving, and other specialized processes.
- Delivery throughout the country.
- Full product traceability.
- Competitive pricing and on-time delivery.

## Aluminum Alloys for Marine Applications

### 5059 Aluminum Alloy

A relatively new alloy similar to 5083 in corrosion resistance and weldability while providing superior strength and higher elongation.

### 5083 Aluminum Alloy

Sheets supplied in marine-grade tempers such as, H116, H321, and H323; to spec ASTM B928. Also offered in tempers O, H112, H32; to spec ASTM B209, with extrusion shapes available in various tempers and specifications. This is an excellent marine environment, corrosion-resistant, aluminum alloy, commonly used in Europe and Asia; becoming increasingly popular in North America. 5083 is used primarily for its corrosion-resistant and intergranular corrosion-resistance properties. The tensile and yield strength are higher than the 5086 alloy and is preferred by aluminum vessel designers, having superior welding capabilities. Additionally, 5083 is available in H32 temper, a standard engineering alloy; however, it lacks the corrosion resistance of the other special marine tempers.

### 5086 Aluminum Alloy

Supplied in marine-grade tempers H116 and H321; to spec ASTM B928 and offered in tempers O, H112, H32; to spec ASTM B209, with extrusion shapes available in various tempers and specifications. An excellent marine environment, corrosion-resistant, aluminum alloy, most commonly used in North America. It is also a marine-grade alloy used for its corrosion-resistant properties and intergranular corrosion resistance. Preferred over standard alloys such as, 5052 or 6061 is 5086, for its corrosion resistance, welding capabilities, and forming properties.

### 5454 Aluminum Alloy

Primarily used in areas where good formability is required, available in O, H112, H32, and H34; to specification ASTM B209. It is an excellent choice for large pressure vessels and specific marine fabricated products. The formability functions best in the soft O temper; however, it is also used in H32 or H34 tempers. The strength and corrosion-resistance properties of 5454 are lower than other alloys.

### 5456 Aluminum Alloy

This material is primarily used in areas where higher strength and welding parameters are required in marine vessel or engineering applications. Alloy 5456 stocking tempers are H116, H321; to spec ASTM B928. They are also offered in tempers O, H112, H32; to spec ASTM B209. This alloy has higher tensile strength than other marine alloys, such as 5083 or 5086, and offers excellent corrosion resistance in seawater environments; however, it lacks the formability and corrosion performance of the other alloys.

