

# Vandal - Aluminum

## Bill of Materials

**(scroll down for plywood BOM)**

ALUMINUM HULL MATERIAL LISTING: The following listing is to serve as a general guide only for hull cost estimating purposes; do not use for buying materials without first checking the instructions and plans for various options (such as differences due to changes in overall boat length and powering methods which will vary each boat), and to local suppliers for what material sizes may be available. In other words, each builder must make decisions as to how he will build the boat and use materials, and then take off a listing to suit. Thus the listing will vary and not all members are necessarily included - check the plans. Note that if tee's are not available, comparable sized angles can be used instead, or the builder can build up comparable members from flat bar (F.B.). Only marine alloy of the 5000- or 6000-series should be used. Common acceptable alloy designations include 5052, 5083, 5086, 5454, 5456, and 6061. For saltwater use, the 5086 is recommended except that extruded shapes can be 6000-series. While full-length hull plating panels can be formed by welding, single long panels are preferable to performing this procedure. In any case, the builder should check for plate or sheet size availability and plan the material utilization for minimum waste. While shorter members can always be butt welded to form long members, a doubler plate is usually advisable behind or on top of all such joints, lapping a considerable distance, and being welded all around.

Does not include variations required between inboard and outboard versions - see plans for options.

MEMBERS	SIZE/TYPE	AMT RQD
Round bars	3/4" 1"	160' 56'
Stiffeners - flat bar	1-1/2" x 1/4" 2" x 1/4"	245' 40
Keel/stem plate	3/8"	12 sq.ft.

Pipe	1-1/2" Sche. 40	25'
Carling	2" x 3/16"	22'
Bottom plating	3/16" x 4'	44'
Side/bulwark plating	1/8" x 4'	48'
Deck plating	1/8"	120 sq.ft.
Transom plating	1/4" x 4' x 9'	1
Frames	3" x 2" x 3/16" angle 2-1/2" x 1-1/2" x 3/16" angle 2" x 1-1/2" x 3/16" angle 3/16" sheet 1/4" plate	60' 60' 16' 14 sq.ft. 7 sq.ft.

## Vandal - Plywood Bill of Materials

**MATERIAL LISTING:** The listing is an approximation that can be used for basic hull cost estimates; it is not meant to be used for buying materials without first checking the instructions and plans for various options (especially regarding power) which will vary the listing, and to local suppliers for what material sizes may be available. The listings do not include cabin or interior members. Each builder should make decisions as to how he will build the boat and use materials, and then take off a listing to suit. As a cost savings, materials should be grouped for resawing to the sizes required. Materials are listed for the basic hull members only and do not include options, variations, interior members, etc.

**PLYWOOD:** All plywood should be at least AB Exterior or Marine grade; Interior plywood is not acceptable. Douglas fir or Mahogany-type panels will suffice. Plywood panel lengths are given to cover the length of the vessel as designed, although stock panels in these sizes may not always be available. Use shorter panels as available, either butt- or scarf-joined per previous information.

**LUMBER:** All lumber should be top quality, free from defects, and of types proven in use in boats. Suitable woods include Sitka spruce, vertical grain Douglas fir, mahogany (including Philippine, Honduras, and African types), and comparable woods of good quality. Thicknesses are nominal except as noted "net". Widths are net except 2" thick nominal members may be of nominal width also. Total lengths allow some overage for trimming, etc., but the breakdown for number of pieces should be checked to the plans and matched to lengths of stock available.

ITEM	SIZE	NO. PCS.	
<b>LUMBER:</b>			
Framing, beams	1-1/4" x 3" 1-1/4" x 4" 1-1/4" x 5" 1-1/4" x 6"	8' 22' 123' 7'	
Keel	1" x 4" x 17'	2	
Bottom battens	1" x 3" x 21' 1" x 3" x 19' 1" x 3" x 18'	2 2 2	
Outer chine logs	7/8" NET x 1-1/4" x 22'	2	
Inner chine logs	7/8" NET SQUARE x 22' 3/4" NET x 1" x 22'	6 2	
Sheer clamps	1/2" NET x 3" x 24'	6	
Rub rails	1/2" NET x 1-1/2" x 24'	4	
Cap rail clamps	1/2" NET x 1-1/4" x 24'	8	
Cap rail (saw to width from wider stock)	1" x 2-1/2"	56'	
Carlings (saw to width from wider stock)	1" x 3" x 22'	2	

Cockpit carlings	1" x 1-1/2"	26'	
Deck battens	1" x 2" 1" x 3"	12' 4'	
Stem/skeg cap	2" wide laminations to suit - see plans		
<b>PLYWOOD:</b>			
ITEM	SIZE	NO. PCS.	
Transom, stem, breasthook, floor timbers	3/4" x 4' x 8'	2	
Bottom planking (*)(**)	1/4" x 4' x 22'	4	
Side/bulwark planking (*)(**)	1/2" x 4' x 24'	2	
Decking	1/2" x 4' x 8'	3	
Gussets, floor timbers	1/2" x 4' x 8'	2	
Bulkheads	1/2" x 4' x 8'	4	
(*) See plans for size/thickness and other options (**) See plans for joining methods to permit standard panel lengths			
<b>Adhesives:</b> Epoxy adhesives are advised throughout the construction. These may be an epoxy adhesive or epoxy resin. Epoxy resins should be used with thickeners (silica or equal) per the instructions with the resin and/or thickening agent. Due to the noted options, the amount required is difficult to estimate. Start with a gallon container of epoxy and after use you will be better able to estimate the total amount required.			