

Carolina Angler

Bill of Materials

MATERIAL LISTING: The following is an approximation that can be used for hull cost estimates; it is not meant to be used for buying materials without first checking the instructions and plans for various options which will vary the listing (especially with regard to planking panel sizes, powering choices, laminated members, etc.), 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. As a cost savings, materials should be grouped for resawing to the sizes required. Plywood panel lengths are given to cover the length of the vessel although stock panels of the listed size may not be available. See previous herein for options and alternatives.

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.

LUMBER: All lumber should be top quality, free from defects, and of types proven in use in boats. Suitable woods include vertical grain Douglas-fir, Alaskan cedar, mahogany (including Philippine, Honduras, and African types), and good quality Southern pine. Lumber thicknesses are given as nominal except where noted "net" or those listed as less than 1". Do NOT custom mill any lumber except those noted "net" or less than 1". Purchase lumber as it comes from the lumberyard. The first dimension is the thickness, but true thickness will be somewhat less than nominal for 1" to thicker listings. For example, lumber listed 1" will actually be about 3/4", while 2" lumber will actually be about 1-1/2" net. The second dimension is the width - this is to be actual or "net" size except that members 2" thick can be nominal in BOTH thickness and width. In other words, a 2" x 4" member will actually be about 1-1/2" x 3-1/2" - buy it and use it this way. Such listed sizes are meant to save the builder money and work.

ITEM (DIMENSION = NET SIZE)	SIZE	NO. PCS.	
LUMBER:			
Frame members	3" wide	50'	

1-1/2" to 1-3/4" thick	5" wide 6" wide 7" wide 8" wide 9" wide 12" wide	20' 150' 60' 30' 40' 15'	
Keel (*) (see plans or heading for width)	3/4"	70'	
Bottom battens	1" x 2-1/2"	190'	
Side battens	1" x 1-1/2"	250'	
Chine logs	1-1/4" x 3"	60'	
Sheer clamp layers	3/4" x 2-1/4"	220'	
Motor stringers (*)	1-1/2" min x 6"	42'	
Motor stringer blocking	1-1/2" x 1-1/2"	30'	
Motor stringer uprights at transom	1-1/2" x 4"	7'	
Carlings	3/4" x 3"	42'	
Coaming (*)	3/4" x 5"	60'	
Deck battens	1" x 2" 1" x 3"	55' 22'	
Skeg (*) See plans	Thicknesses to suit x 2-1/2" wide (*)		
(*) SEE HEADING IN TEXT FOR VARIABLES AND OPTIONS			
PLYWOOD:			
ITEM	SIZE	NO. PCS.	
Transom (*)	1/2" x 4' x 10'	2	

Stem, breasthooks	3/4" x 4' x 8'	3	
Gussets, bulkheads, floor timbers	3/4" x 4' x 8'	6	
Decking	5/8" x 4' x 8' 5/8" x 4' x 10'	3 3	
Side planking	2 layers 3/8" sufficient to cover 280 sq.ft. per		
Bottom planking	2 layers 3/8" sufficient to cover 260 sq.ft. per 1 layer 1/4" sufficient to cover 260 sq.ft.		
(*) SEE HEADING IN TEXT FOR VARIABLES AND OPTIONS			

Adhesives: 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.

FASTENING SCHEDULE: The listing suggests the size, type, and spacing or number required of fastenings for various junctions of the basic hull. The listing can be varied by the builder as required to assure sound, strong junctions. Due to the variations and options available, it is not practical to list every junction for every option, especially since many fastenings, such as those used for portions of the planking application, can be of a temporary nature, or lesser non-marine quality (such as the finish nails used for strip planking) - these fastenings are not listed. However, from the listing, the builder should be able to make interpolations. Screws should be flat head wood types. In some cases, it will be desirable to counterbore these for greater holding power or for building convenience. Bolts should be carriage bolts or threaded rods with nuts jammed on for heads. Bolt lengths must be taken from the work. However, bolt heads and nuts can be counterbored and recessed somewhat to take advantage of shorter length bolts. Nails are ring-type boat nails with pilot holes pre-drilled first. Screws can be used in place of nails in all cases. Air-driven temporary staples may be used in the double diagonal planking installation for convenience, but if not of non-corrosive material, should be removed once the glue cures. Final fastenings should still be installed as listed.

JUNCTION	SIZE	TYPE	SPACING/NO.RQD.
----------	------	------	-----------------

Transom laminations	1" #12	Nails	4" apart
Transom to framing	2" #10	Screws	6" apart
Transom bottom frame lamination	3" #14	Screws	6" apart
Frames to wood floor timbers	3" #14	Screws	6 min. per junction
Ply floor timbers to frames/filler blocking	2" #10	Screws	6 min. per junction
Gussets to frames	1-1/2" #8	Screws	5 min. per junction
Sole beams at frame gussets	1-1/2" #8	Screws	2 per junction
Stem laminations	1-1/2"/2"	Nails	6" apart
Breasthook laminations	1-1/2"/2"	Nails	3"-4" apart
Breasthook to stem	3" #14	Screws	2 min.
Floor timbers to stem	3" #14	Screws	4 per junction
Beams to frames	3" #14	Screws	2 per junction
Bulkheads to frames	1-1/2" #8	Screws	3"-4" apart

Keel first layer to frames & stem	3" #14	Screws	2 min. per junction
Keel laminations	1-1/2" #8	Screws	6" apart
Keel to stem	3/8"	Bolts (*)	3 total
Keel to frames	3/8"	Bolts (*)	1 min. per frame
Battens to frames & transom	2-1/2" #12	Screws	2 per junction
Chine logs to stem/transom	3-1/2" #18	Screws	2 per junction
Chine logs to frames	3" #14	Screws	1 per junction
Sheer clamp - 1st layer @ breasthook	2-1/2" #12	Screws	3 per junction
Sheer clamp - 1st layer @ frames/transom	2-1/2" #12	Screws	2 per junction
Sheer clamp - 2nd to first layer	1-1/2" #8"	Screws	4"-6" apart
Sheer clamp - 3rd layer	2" #10	Screws	6" apart
Carling to frame junctions	2" #10	Screws	2 per junction
Coaming to carlings/frames	2" #10	Screws	2 per junction/6" apart

Motor stringer ply laminations	1-1/4"	Nails	4"-6" apart
Motor stringer laminations	1-1/2" #8	Screws	4"-6" apart
Motor stringer/blocking junctions	5/16"	Bolts (*)	2 per junction
Side planking - 1st layer at all points	1"	Nails	2"-6" apart
Side planking @ stem/transom	2" #10	Screws	2"-3" apart
Side planking @ sheer/chine	2" #10	Screws	3"-4" apart
Side planking @ battens/frames	1-1/2" #8	Screws	4"-6" apart
Bottom planking-1st/2nd layer all points	1" min.	Nails	2"-6" apart
Bottom planking @ stem & transom	2-1/2" #12	Screws	2" apart
Bottom planking @ chine & keel	2-1/2" #12	Screws	3"-4" apart
Bottom planking @ battens/frames	1-3/4" #8	Screws	2"-6" apart
Deck battens	2" #10	Screws	2 per junction

Decking perimeters	1-1/2" #8	Screws	3"-4" apart
Decking at inner members	1-1/4" #8	Screws	6" apart
Skeg to hull	3/8"	Bolts (*)	Per plans
Cockpit sole	1-1/2" #8	Screws	3"-6" apart
(*) Threaded rod with nuts jammed on to form heads optional; length to suit.			