

Bear-Cat Sport - Plywood Bill of Materials

LUMBER & PLYWOOD: All plywood must be intended for marine or exterior use; interior grades are not acceptable. The marine grade panel features higher grade inner ply cores, while the exterior plywood grade cores may have voids not apparent to the eye, and may also use cores made from woods not as suitable for marine applications. In most cases, the glues used in both the marine and exterior panels are the same waterproof type, however, the decision to use exterior panels in lieu of marine panels must lie with the builder, considering the particular use of the panel in the boat and the expected service. The letters A, B and C designate the grade of the exterior veneers with A grade the best, etc. Douglas-fir plywood is acceptable for all plywood, although mahogany or other attractive veneers are preferable in many instances as described in these instructions.

All lumber used should be first grade, free from knots, shakes, checks, or other defects. All *widths are actual size except for lumber 2" in thickness where widths are also nominal*. All thicknesses are standard finished sizes, with *1" lumber being four quarters material, usually finished to about 3/4"*. Grouping lumber and purchasing "random-random" material to resaw to the required size will result in considerable savings. All lumber sizes should be checked to the work before purchasing wherever possible. Lumber typical to the locale and proven in use in boats of similar type can be used as long as the weight, strengths, and characteristics are similar. Suitable boatbuilding woods include white oak, mahogany (Mahog.- Philippine dark red, American, or African types commonly used in boats), Sitka spruce (SSP), Alaskan cedar, Port Orford cedar, Douglas-fir (DF), longleaf yellow pine, apitong, and teak.

HULL MATERIAL LISTING: The following material listing is an estimate of the materials required to build the basic hull. The material listing is intended to serve as a general guide only and should not be used to purchase materials until the various options and alternatives have been checked to the plans, to the work, and to the materials which may be available in the area in which the hull will be built. The listing may vary due to the amount of waste and other variables that cannot be controlled.

<p>BEAR-CAT SPORT - See instructions for options and methods for joining shorter members.</p>	
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ITEM	SIZE	QUANTITY	
LUMBER:			
Frame cross beams	2" x 8" x 10'0"	6	
Framing	1" NET x 8" 1" NET x 6" 1" NET x 4" 3/4" NET x 8" 1-1/4" x 8" 1-1/4" x 6" 1-1/4" x 5" 1-1/4" x 4"	10' 8' 8' 10' 18' 16' 65' 80'	
Keels	2" x 4" x 18'	2	
Chine logs	1" NET x 2" x 24'	4	
Sheer clamps	1-1/4" NET x 2-1/2" 26'	2	
Outer deck cleats	1" x 1-1/4" x 26'	2	
Inner deck cleats	1" x 1-1/4" x 21'	2	
Tunnel side clamps	1" NET Square x 27'	2	
Side battens	1-1/4" x 2" x 25'	2	
Spray rails	1" x 2" x 24'	4	
Sole clamps	1" x 1-1/2" x 18'	2	
Sole blocking	1" x 2-1/2" x 21'	2	

Deck battens	1" x 2" x 4'	2	
Web cleats	1" x 1" MIN.	250'	

(*) See instructions - varies with option.

PLYWOOD:

ITEM	SIZE	QUAN.	MIN. GRADE
Transom	1/2" x 4' x 10'*	1	AB MAR
Aft cockpit bulkhead	3/4" x 4' x 10'*	1	AB MAR
Frames #1 thru #6	5/8" x 4' x 8'	4	AB EXT
Frames #7 & #8	5/8" x 4' x 10'*	2	AB MAR
Stems/breastplates	3/4" x 4' x 8'	3	AB EXT
Stem/keel layer	3/8" x 4' x 8'	1	AB EXT
Bottom planking	1/4" x 4' x 23'* 1/4" x 2' x 23'* 3/8" x 4' x 23'* 3/8" X 2' X 23'*	1 1 1 1	AB MAR AB MAR AB MAR AB MAR
Tunnel planking	1/2" x 4' x 8'	5	AB MAR
Tunnel side planking	3/8" x 4' x 26'*	1	AB EXT
Tunnel side clamps	3/4" x 3" x 26'*	2	AB EXT
Side planking	1/2" x 4' x 26'*	2	AB EXT

Upper side, sidedeck, cockpit siding	3/8" x 4' x 26'*	2	AB EXT
Foredeck	3/8" x 4' x 10'*	1	AB EXT
Webs	3/8" x 4' x 8'	6	AB EXT
Dive step/motor wells	5/8" x 4' x 10'*	1	AB EXT
Cockpit sole & seat/step	5/8" x 4' x 10'	5	AB EXT
Transom knees	3/4" x 4' x 8'	1	AB EXT
Transom gusset/siding	3/4" x 4' x 4'	1	AB EXT

* It is unlikely that you will find plywood longer than 10'. In all cases standard 4' x 8' sheets can be used in lieu of longer sheets.

FASTENINGS:

- **Screws:** Flathead wood type, bronze or hot dipped galvanized
- 1 1/4" #8 = 2700 (19 gross)
- 1 1/2" #8 = 800 (6 gross)
- 2" #10 = 100 (1 gross)
- 2-1/2" #10 = 200* (1 gross)
- (*) If not available, use 3" screws alternately.
- 3" #14 = 100 (9 doz.)
- Nails:** Ring type boat nails, bronze or Monel
- 1" #12 = 4 lbs.
- 1-1/4" #12 = 1 lbs.
- 1-1/2" #12 = 4 lbs.

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.

Bear-Cat Cuddy - Plywood Bill of Materials

LUMBER & PLYWOOD: All plywood must be intended for marine or exterior use; interior grades are not acceptable. The marine grade panel features higher grade inner ply cores, while the exterior plywood grade cores may have voids not apparent to the eye, and may also use cores made from woods not as suitable for marine applications. In most cases, the glues used in both the marine and exterior panels are the same waterproof type, however, the decision to use exterior panels in lieu of marine panels must lie with the builder, considering the particular use of the panel in the boat and the expected service. The letters A, B and C designate the grade of the exterior veneers with A grade the best, etc. Douglas-fir plywood is acceptable for all plywood, although mahogany or other attractive veneers are preferable in many instances as described in these instructions.

All lumber used should be first grade, free from knots, shakes, checks, or other defects. All *widths are actual size except for lumber 2" in thickness where widths are also nominal*. All thicknesses are standard finished sizes, with *1" lumber being four quarters material, usually finished to about 3/4"*. Grouping lumber and purchasing "random-random" material to resaw to the required size will result in considerable savings. All lumber sizes should be checked to the work before purchasing wherever possible. Lumber typical to the locale and proven in use in boats of similar type can be used as long as the weight, strengths, and characteristics are similar. Suitable boatbuilding woods include white oak, mahogany (Mahog.- Philippine dark red, American, or African types commonly used in boats), Sitka spruce (SSP), Alaskan cedar, Port Orford cedar, Douglas-fir (DF), longleaf yellow pine, apitong, and teak.

HULL MATERIAL LISTING: The following material listing is an estimate of the materials required to build the basic hull. The material listing is intended to serve as a general guide only and should not be used to purchase materials until the various options and alternatives have been checked to the plans, to the work, and to the materials which may be available in the area in which the hull will be built. The listing may vary due to the amount of waste and other variables that cannot be controlled.

<p>BEAR-CAT SPORT - See instructions for options and methods for joining shorter members.</p>	
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ITEM	SIZE	QUANTITY	
LUMBER:			
Frame cross beams	2" x 8" x 10'0"	7	
Framing	1" NET x 8" 1" NET x 6" 1" NET x 4" 3/4" NET x 8" 1-1/4" x 8" 1-1/4" x 6" 1-1/4" x 5" 1-1/4" x 4"	10' 8' 8' 10' 18' 16' 65' 80'	
Keels	2" x 4" x 21'	2	
Chine logs	1" NET x 2" x 27'	4	
Sheer clamps	1-1/4" NET x 2-1/2" 29'	2	
Outer deck cleats	1" x 1-1/4" x 29'	2	
Inner deck cleats	1" x 1-1/4" x 24'	2	
Tunnel side clamps	1" NET Square x 30'	2	
Side battens	1-1/4" x 2" x 28'	2	
Spray rails	1" x 2" x 27'	4	
Sole clamps	1" x 1-1/2" x 21'	2	
Sole blocking	1" x 2-1/2" x 24'	2	

Deck battens	1" x 2" x 4'	2	
Web cleats	1" x 1" MIN.	260'	
PLYWOOD:			
ITEM	SIZE	QUAN.	MIN. GRADE
Transom	1/2" x 4' x 10'*	1	AB MAR
Aft cockpit bulkhead	3/4" x 4' x 10'*	1	AB MAR
Frames #1 thru #6	5/8" x 4' x 8'	4	AB EXT
Frames #7 & #8	5/8" x 4' x 10'*	2	AB MAR
Stems/breastplates	3/4" x 4' x 8'	3	AB EXT
Stem/keel layer	3/8" x 4' x 8'	1	AB EXT
Bottom planking	1/4" x 4' x 26'* 1/4" x 2' x 26'* 3/8" x 4' x 26'* 3/8" X 2' X 26'*	1 1 1 1	AB MAR AB MAR AB MAR AB MAR
Tunnel planking	1/2" x 4' x 8'	6	AB MAR
Tunnel side planking	3/8" x 4' x 29'*	1	AB EXT
Tunnel side clamps	3/4" x 3" x 29'*	2	AB EXT
Side planking	1/2" x 4' x 29'*	2	AB EXT
Upper side, sidedeck,	3/8" x 4' x 29'*	2	AB EXT

cockpit siding			
Foredeck	3/8" x 4' x 10'*	1	AB EXT
Webs	3/8" x 4' x 8'	7	AB EXT
Dive step/motor wells	5/8" x 4' x 8'	1	AB EXT
Cockpit sole & seat/step	5/8" x 4' x 10'	5	AB EXT
Transom knees	3/4" x 4' x 8'	1	AB EXT
Transom gusset/siding	3/4" x 4' x 4'	1	AB EXT

* It is unlikely that you will find plywood longer than 10'. In all cases standard 4' x 8' sheets can be used in lieu of longer sheets.

FASTENINGS:

- **Screws:** Flathead wood type, bronze or hot dipped galvanized
- 1 1/4" #8 = 3000 (21 gross)
- 1 1/2" #8 = 900 (6 gross)
- 2" #10 = 100 (1 gross)
- 2-1/2" #10 = 200* (1 gross)
- (*) If not available, use 3" screws alternately.
- 3" #14 = 100 (9 doz.)

Nails: Ring type boat nails, bronze or Monel

- 1" #12 = 5 lbs.
- 1-1/4" #12 = 1 lbs.
- 1-1/2" #12 = 4 lbs.

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.