

# Glen-L 25 Fiberglass Bill of Materials

All lumber used should be first grade free from knots, shakes, or other defects. Lumbers typical to the locale and proven in use on boats in the locale may be used. Suitable woods include white oak, mahogany (both Philippine and Honduras types), Sitka spruce, Douglas-fir, longleaf yellow pine, Port Orford cedar, apitong, and teak. All lumber thickness specified is standard lumberyard stock finished as full as possible except for stock noted "net". For example, stock listed 1" is purchased as "four quarters" stock which will finish from 3/4" to 7/8" in net thickness. All widths are noted as net. An exception is material which is listed 2" or thicker, which will usually finish less in both thickness and width dimensions. Grouping lumber and purchasing random-random material to resaw to the required size will result in considerable savings. All wood must be checked to the work for accuracy. All plywood must be intended for marine or exterior use. Interior grades are not acceptable. The marine grade core features solid inner plies, while exterior plywood cores may have inner voids not apparent to the eye. In most cases, the glues used in both types are the same waterproof variety. All plywood is preferably five ply type if available with the best face being used for the exposed surface. Douglas-fir plywood is acceptable for all plywood, although various hardwood veneer types can be used alternately.

**MATERIALS-FASTENINGS & METALS:** All fastenings should be non-corrosive type. Screws as noted are the flat head type, while nails should be the annular ring shank nail commonly used in boatbuilding. Screws should be hot dipped galvanized or silicon bronze, while nails can be Monel or bronze type. Electroplated steel which will rust and low strength brass fastenings should not be used. For a boat which will remain in salt or brackish water for a considerable length of time, bronze fastenings are recommended. For a boat which will not remain in salt water or will be trailered, hot dipped galvanized fastenings can be used. Stainless steel can be used for the various sail hardware items although some grades of stainless steel are not highly corrosion resistant. Dissimilar metals (such as bronze and aluminum) should not come in contact with one another, especially where they will be immersed in salt water.

**HULL CONSTRUCTION MATERIALS:** The following list of materials used in the construction of the basic hull is based on the square footage of the actual hull. It is not possible to accurately calculate the materials that will be required when building a hull using fiberglass materials. There are several reasons for this limitation. First, fiberglass materials come in not only varying weights but also various widths which will vary not only the lengths of a given width that will be required, but also how the widths of material will be utilized in the actual lay-up in the construction. Also, the fact that joints in the material will require

staggering in many cases will vary the amount used. Another nuance is the fact that additional layers of material will be required in some areas and not in others. Of course, there is the chance that some material will be wasted as well. Also, it is not possible to accurately determine how much resin will be required. It is possible to accurately determine how much resin SHOULD be used to obtain the ideal resin/glass content, but this figure will not include lost resin from running off during application, or wasted resin which can set up before being used. The figures listed for both fiberglass material and resin take these factors into consideration and allow some degree of extra material, however, it is highly probably that the builder will require more materials than listed due to these variables. For these reasons, it is recommended that the builder use the list as a general guide only. Resin is best purchased in bulk quantities for a boat this size, starting off with one drum of resin initially and using this amount before buying more resin. Similar statements are applicable to the fiberglass planking and the foam material, although to a lesser degree. The figures listed include an overage factor, however, much will depend on how the builder utilizes the material as well as the sizes purchased. The listing includes materials for the basic hull only and does not include any material used for the internal cabin structure or joinery work due to the possible variations which may be desired by the builder. In many instances, a portion of the laminate will state "or equivalent". This statement means that any combination of fiberglass material may be used as long as the total weight of fiberglass material used is the same.

### **HULL MATERIAL LISTING - FIBERGLASS PLANKING METHOD:**

- Fiberglass planking 12" wide: 360 lineal feet
- Fiberglass mat 1 oz per square foot: 1400 square feet or approximately 88 lbs of width to suit
- Fiberglass cloth (optional) 7 to 10 oz per square yard: 36 yds. 38" cloth, or approximately 36 square yards of width to suit
- Fiberglass woven roving 18 oz per square yard: 120 square yards or approximately 135 lbs of width to suit
- Polyester resin: 1 drum (55 gal size or approximately 500 lbs net) plus 12 gal non-thixotropic resin for fiberglass planking (initial coat).

### **HULL MATERIAL LISTING - FOAM SANDWICH METHOD:**

- Foam material (PVC) 1/2" thick x 3' x 6': 22 sheets
- Fiberglass mat 1 oz per square foot: 900 square feet or approximately 56 lbs of width to suit
- Fiberglass cloth (optional) 7 to 10 oz per sq yd: 36 yds 38" cloth, or approximately 36 square yards of width to suit

- Fiberglass woven roving 18 oz per square yard: 80 square yards or approximately 90 lbs of width to suit
- Polyester resin: 1 drum (55 gal size or approximately 500 lbs net)