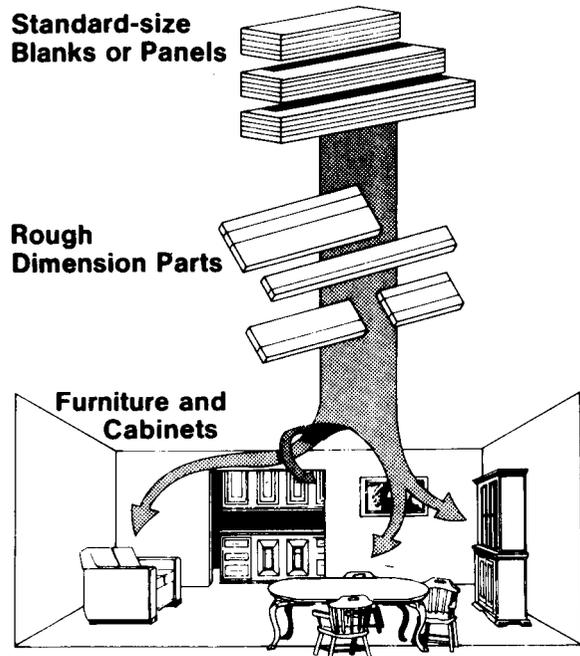


# Standard-Size Blanks for Furniture and Cabinets



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## **Standard-size Blanks for Furniture and Cabinets**

by Philip A. Araman

### **What Are Blanks?**

Blanks are rough-dimension parts of a specific size. They may be solid or glued up; quality depends on the final use of the material.

### **What Are Standard-Size Blanks?**

Standard-size blanks are blanks made to standard thicknesses, lengths, and widths for each desired quality.

### **How Are Blanks Used?**

Blanks in a few standard sizes can be used to make the thousands of different size rough-dimension parts needed by a furniture or cabinet manufacturer.

Blanks can be made from lower grade mixes of lumber or other material that results in lower costs and plentiful sources of material.

### **Who Can Use Blanks?**

Blanks can be used by manufacturers of solid, veneered, or upholstered furniture, recliners, and kitchen cabinets plus other users of furniture-grade material.

### **Who Can Make Blanks?**

Blanks can be made by a dimension manufacturer; a saw-miller-lumber drier who will add the necessary equipment to make the blanks; and a furniture or cabinet manufacturer for internal use or outside sales, or both.

### **How Blanks Are Manufactured**

Blanks are manufactured with log-run or better lumber by crosscutting, ripping, and edge-gluing, or ripping, crosscutting, and edge gluing.

Also, they are manufactured with small-diameter, low-grade logs by System 6 methods, or bolter sawing followed by conventional methods.

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*Philip A. Araman is a forest products technologist at the Northeastern Forest Experiment Station, Forestry Sciences Laboratory, P.O. Box 152, Princeton, WV 24740.*

## Recommended Sizes

Recommended hardwood blank standard sizes for furniture and cabinet manufacturers (inches)

Nominal thickness	Intended product finish thickness	Actual blank thickness	Blank lengths											
			13	15	17	18	22	26	31	36	42	47	58	86
Clear Quality/26-Inch-Wide Blanks														
5/8	3/8	1/2	13	15	17	18	22	26	31	36	42			
3/4	1/2	5/8	14	17	19	22	25	29	31	35	41	47	58	86
4/4	3/4	7/8	15	18	21	25	29	33	38	45	50	60	75	100
1 1/4	1	1 1/8	15	18	21	25	29	33	38	45	50	60	75	100
1 1/2	1 1/4	1 3/8	15	18	21	25	28	32	35	40	45	50	60	70 85
2	1 5/8	1 3/4	15	18	21	25	28	32	35	40	45	50	60	70 90
Core Quality/26-Inch-Wide Blanks														
1	3/4	7/8	15	18	21	23	26	29	34	40	50	60	70	95
1 1/4	1	1 1/8	15	18	21	23	26	29	34	40	50	60	70	85
Sound Quality (for upholstered frames)/20-Inch-Wide Blanks														
1	3/4	7/8	13	17	19	22	24	27	29	33	44	54	70	80 100
1 1/4	1	1 1/8	15	18	20	23	25	28	33	45	55	65	80	90 100
1 1/2	1 1/4	1 3/8	14	18	21	24	28	31	34	40				
2	1 5/8	1 3/4	12	16	19	21	24	28	30	34				
Sound Quality (for case goods)/20-Inch-Wide Blanks														
1	3/4	7/8	15	18	21	25	29	34	40	50	60	70	95	

These are the recommended sizes, but individual companies could decide to use more or different sizes. Our recommended sizes are for the combined needs of the 32 companies that supplied the rough-part size data.

Sizes from which needed furniture and cabinet part requirements could be ripped (from edge-glued wide panels) and then crosscut into specific lengths with only small material losses determined blank specifications.

### Why Only Wide-Panel Blanks?

Only wide-panel blanks are used because this decreases the number of standard sizes required and permits better utilization of the material used to make the blanks. Random-width cuttings can be used to make wide, edge-glued blanks.

### Advantages of Making Blanks

When making blanks, a producer can achieve high yields from abundant low-grade material because:

- Up to 12 lengths are cut at one time by the longest length first cut-off technique.
- Random-width cuttings are edge-glued into wide panels.
- Panels are produced to fill and maintain an inventory. Therefore, undercutting and overcutting of requirements can be tolerated.
- Costly drying defects are minimized through pre-drying, kiln drying, and protected storage.

The high yield will help lower costs.

### **Advantages of Buying Blanks**

A purchaser of blanks will not have to purchase, grade, sort, and stack lumber; air dry, predry, kiln dry and store lumber; or process lumber into dimension parts in a rough mill. Rather, the purchaser only has to purchase standard-size, edge-glued blanks; store the blanks; and cut them to specific-dimension parts when needed.

Other advantages are reduced shipping volume, reduced waste disposal problems, and lower raw material inventory costs.

### **Advantages of Using Blanks**

Standard-size blanks are advantageous because the sizes were established with the user's needs in mind. Yields will be high, and part costs will be easier to determine. Needs can be determined in advance, and blanks ordered to maintain inventories. Closer rough-dimension tolerances and minor design changes that improve blanks-to-parts yields are also possible.

### **Will Blanks Meet the Needs of My Company?**

To answer how well and at what cost blanks will meet the needs of a company a computer program called BLANKS can be used. The program determines the number of edge-glued, standard-size blanks required for each species-thickness-quality combination of rough parts specified by a company. Parts needs can be for a piece of furniture, any number of pieces in a suite or group of furniture, or for any combination of pieces of furniture. The results from program BLANKS provide the number of standard-size blanks needed, yield information, and cost information for any production period.

The results can be used by a manufacturer to:

- Evaluate standard-size blanks as a solid wood input material.
- Consider a blanks inventory system.
- Decide what to make or buy and inventory as standard-size blanks.
- Decide what to make or buy in exact rough-part dimension if total adoption of the standard sizes is not desired.
- Decide which low-demand, species-thickness parts should be made with a more highly demanded species-thickness.

## What Are the General Industry Needs?

percentage of rough dimension furniture and cabinet requirements by product type<sup>a</sup>

Quality	Nominal thickness	Solid furniture	Veneered furniture	Upholstered furniture	Recliners furniture	Kitchen cabinets
Clear (C1F and C2F)	5/8	5	10			
	3/4					19
	4/4	44	14	3		70
	5/4	16	15		4	5
	6/4	7	9	5		
Core	8/4	7	8	3	2	
	4/4		24			
Sound interior (for case goods) and sound frame (for upholstered frame)	5/4		5			
	4/4	15	11			5
	4/4			59	53	
	5/4			22	28	
Other thickness/quality combinations	6/4			3	2	
	8/4			4	8	
		6	4	1	3	1
Total		100	100	100	100	100

<sup>a</sup>Based on surface area of required parts. Percent of requirements less than 1 percent that fit in one of the thickness/quality categories were placed in the "other thickness/quality combinations."

## Blanks Are Economical to Produce and Sell

We recently evaluated the potential of producing blanks from log-run lumber (No. 2 Common and Better) in a conventionally equipped plant capable of processing 16 Mbf (thousand board feet) into 9.6 Mbf of 4/4 or 5/4 blanks per shift. The proposed plant requires an investment of over \$3 million and if the average market price for mixed 4/4 and 5/4 clear-quality red oak blanks is \$1.80 per square foot, the promised return is 26 to 40 percent with one or two shifts, respectively.

We also have evaluated the potential for producing blanks from low-grade, small-diameter bolts with System 6. Sawmillers would make two-sided cants from 6- and 8-foot bolts 8 to 12 inches in diameter for sale to the System 6 blank producer (\$150 per Mbf mill run). Blanks would be produced at approximately 45 percent yield for C1F blanks (\$1.70 per square foot) and 35 percent yield for C2F blanks (\$1.95 per square foot) on a 4/4 red oak basis. A System 6 blank mill with 16 Mbf input

per shift that uses purchased cants and requires an investment of approximately \$2 million promises returns of 20 to 30 percent.

These rates of return indicate that it is economically advantageous to produce and sell blanks.

## Blanks Are Economical to Produce and Use

Accounting-based cost estimates for blanks range from \$0.89 to \$1.07 per square foot depending on the amount of new investment required and level of operation. Estimates are for a conventional plant that uses 70 percent 4/4 and 30 percent 5/4 log-run red oak lumber mix when making clear blanks.

Accounting-based cost estimates for blanks produced for internal use in a System 6 blank mill that uses red oak cants

were: \$0.90 to \$1.02 per square foot for C1F blanks and \$1.20 to \$1.33 per square foot for C2F blanks. These estimates are for a 4/4 blank basis.

These material costs are probably lower than material costs for existing internally produced parts. You should investigate these opportunities.

#### **Where to Get the Computer Program and More Information**

The computer program described in this leaflet is available on request with the understanding that the U.S. Department of Agriculture cannot assure its accuracy, completeness, reliability, or suitability for any other purpose than that reported. The recipient may not assert any proprietary rights thereto nor represent it to anyone as other than a Government-produced computer program. For a copy of the program or more information about standard-size blanks, write: Northeastern Forest Experiment Station, Forestry Sciences Laboratory, P.O. Box 152, Princeton, WV 24740.

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The standard-size blanks concept is depicted on the cover. Standard-size blanks are processed to rough-dimension parts that are used to make furniture and cabinets.