

Appendix E

Amounts and Cost of Composite Wood Products in New Site-built Homes

Methodology: Two home plans were accessed from the Dream House Source website (www.dreamhousesource.com) serving as examples of a small (800 ft²) or large (2,000 ft²) home. Assuming that the major portion of composite wood products used in a new home are used in the fabrication of countertops, cabinets, shelving, doors, baseboards, and a built-in home entertainment (large home only), a commercially available software program (Cabnetware) was used to calculate the amount composite wood materials that would be used to build the proposed items in the two homes. Detailed materials lists and cost estimates are provided below. The incremental cost of a home is calculated by multiplying the area for each composite wood product subject to the regulation by the incremental production price of the corresponding regulated composite wood product.

A. Amount of Wood Products Used in a New Site-built Home

1. New 800 ft² Home (Home Plan 9802; Dream House Source)

Table F-1. Estimated Amount of Wood Products for Cabinets, Countertops, Shelving, and Doors in a New 800 ft ² Site-built Home ¹		
Wood Material (Where Used)	----- Amount -----	
	ft ²	m ²
1" Solid Oak (Kitchen/Bath Cabinet)	129.2	11.9
3/4" Particleboard (Kitchen/Bath Cabinet)	330.0	30.4
5/8" Particleboard (Kitchen/Bath Cabinet)	28.8	2.7
3/4" Hardwood Plywood (Kitchen/Bath Cabinet)	97.9	9.0
5/8" Hardwood Plywood (Kitchen/Bath Cabinet)	45.5	4.2
1/4" Medium Density Fiberboard (Kitchen/Bath Cabinet)	152.2	14.0
3/4" Particleboard (Kitchen Countertop)	35.5	3.3
3/4" Particleboard (Bathroom Countertop)	10.0	0.9
1/2" Medium Density Fiberboard (Baseboards)	33.5	3.1
2' 8" x 6' 8" Door (6-total)	107.0	9.8
1/4" Hardwood Plywood (Small Closet Shelving)	105.0	9.7
3/4" Particleboard (Small Closet Shelving)	14.0	1.3
Total Surface Area	1,088.5	100.1
(1) Amount of materials estimated with Cabnetware (Planit Solutions, Inc., 2004).		

2. New 2,000 ft² Home (Home Plan 18401; Dream House Source)

Table F-2. Estimated Amount of Wood Products for Cabinets, Countertops, Shelving, Doors, and an Entertainment Center in a New 2,000 ft ² Site-built Home ¹		
Wood Material (Where Used)	----- Amount -----	
	ft ²	m ²
1" Solid Oak (Kitchen/Bath Cabinet)	211.2	19.4
3/4" Particleboard (Kitchen/Bath Cabinet)	461.2	42.4
5/8" Particleboard (Kitchen/Bath Cabinet)	64.5	5.9
3/4" Hardwood Plywood (Kitchen/Bath Cabinet)	85.9	7.9
5/8" Hardwood Plywood (Kitchen/Bath Cabinet)	74.5	6.9
1/4" Medium Density Fiberboard (Kitchen/Bath Cabinet)	273.4	25.2
3/4" Particleboard (Kitchen Countertop)	54.5	5.0
3/4" Particleboard (Bathroom Countertop)	22.0	2.0
1/2" Medium Density Fiberboard (Baseboards)	72.0	6.6
2' 8" x 6' 8" Door (13-total)	231.0	21.3
3/4" Particleboard (Large Closet Shelving)	21.5	2.0
1/4" Hardwood Plywood (Small Closet Shelving)	157.5	14.5
3/4" Particleboard (Small Closet Shelving)	21.0	1.9
3/4" Hardwood Plywood (Built-in Entertainment Center)	167.1	15.4
1/4" Hardwood Plywood (Built-in Entertainment Center)	36.8	3.4
1" Solid Maple (Built-in Entertainment Center)	11.7	1.1
Total Surface Area	1,965.8	180.9
<p>(¹) Amount of materials estimated with Cabnetware (Planit Solutions, Inc., 2004).</p>		

B. Cost of Wood Products Used in a New Site-built Home

1. Panel Cost basis

To estimate the incremental cost of new home construction, staff calculated the incremental cost of materials based on the incremental per board costs due to the regulation. Table F-3 summarizes the incremental costs shown in Table VIII-17, calculated on a per square foot basis (a std. composite wood panel equals 32 square feet (4'x8')).

Table F-3. Estimated Incremental (Δ) Cost of Particleboard, Medium Density Fiberboard, and Hardwood Plywood Panels (cost per square foot) ¹				
	----- Board Thickness -----			
	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
Particleboard	\$0.09	\$0.09	\$0.10	\$0.11
Medium Density Fiberboard	\$0.12	\$0.14	\$0.16	\$0.18
	$\frac{1}{2}$ " Birch	$\frac{3}{4}$ " Birch	$\frac{3}{4}$ " Oak	$\frac{3}{4}$ " Maple
Hardwood Plywood	\$0.16	\$0.19	\$0.20	\$0.18

(¹) Dollar values are incremental costs for a standard 4' x 8' panel; taken from Table VIII-17.

2. New 800 ft² Home (Home Plan 9802; Dream House Source)

Table F-4. Estimated Incremental Cost of Wood Materials Used in a New Site-built 800 ft ² House ¹			
Wood Material (Where Used)	ft ²	Δ Price/ft ²	Total
1" Solid Oak (Cabinet)	129.2	\$0.00	\$0.00
$\frac{3}{4}$ " Particleboard (Cabinet)	330.0	\$0.11	\$36.30
$\frac{5}{8}$ " Particleboard (Cabinet)	28.8	\$0.10	\$2.88
$\frac{3}{4}$ " Hardwood Plywood (Cabinet)	97.9	\$0.20	\$19.58
$\frac{5}{8}$ " Hardwood Plywood (Cabinet)	45.5	\$0.16	\$7.28
$\frac{1}{4}$ " Medium Density Fiberboard (Cabinet)	152.2	\$0.12	\$18.26
$\frac{3}{4}$ " Particleboard (Kitchen Countertop)	35.5	\$0.11	\$3.91
$\frac{3}{4}$ " Particleboard (Bathroom Countertop)	10.0	\$0.11	\$1.10
$\frac{1}{2}$ " Medium Density Fiberboard (Baseboards)	33.5	\$0.14	\$4.69
2' 8" x 6' 8" Door (6-total) ²	107.0	4 @ \$12.9 2 @ \$19.5	\$90.60
$\frac{1}{4}$ " Hardwood Plywood (Shelving)	105.0	\$0.16	\$16.80
$\frac{3}{4}$ " Particleboard (Shelving)	14.0	\$0.11	\$1.54
Total Surface Area	1,088.5	-----	\$202.94

(¹) Cost of materials estimated with Cabnetware (Planit Solutions, Inc., 2004); assumes the use of four interior and two exterior doors.
(²) Assumed 10% incremental door price due to regulation for 4 doors at \$129 and 2 doors at \$195.

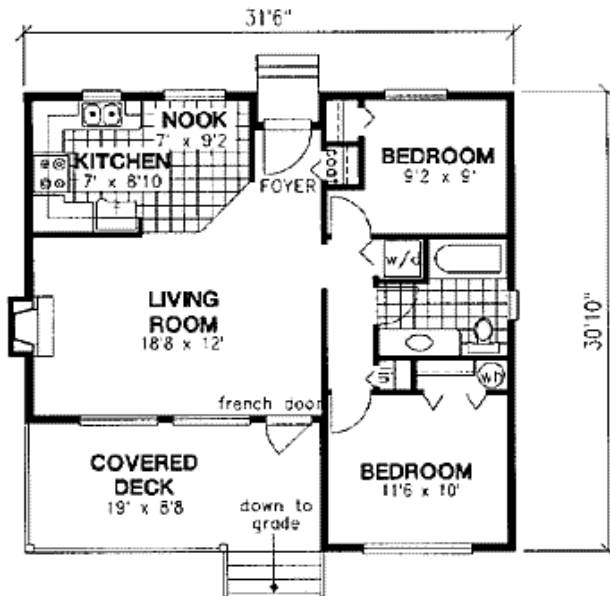
2. New 2,000 ft² Home (Home Plan 18401; Dream House Source)

Table F-5. Estimated Cost of Wood Materials Used in a New Site-built 2,000 ft ² House ¹			
Wood Material (Where Used)	ft ²	ΔPrice/ft ²	Total
1" Solid Oak (Cabinet)	211.2	\$0.00	\$0.00
3/4" Particleboard (Cabinet)	461.2	\$0.11	\$50.73
5/8" Particleboard (Cabinet)	64.5	\$0.10	\$6.45
3/4" Hardwood Plywood (Cabinet)	85.9	\$0.20	\$17.18
5/8" Hardwood Plywood (Cabinet)	74.5	\$0.16	\$11.92
1/4" Medium Density Fiberboard (Cabinet)	273.4	\$0.12	\$32.81
3/4" Particleboard (Kitchen Countertop)	54.5	\$0.11	\$6.00
3/4" Particleboard (Bathroom Countertop)	22.0	\$0.11	\$2.42
1/2" Medium Density Fiberboard (Baseboards)	72.0	\$0.14	\$10.08
2' 8" x 6' 8" Door (13-total)	231.0	11 @ \$12.9 2 @ \$19.5	\$180.90
3/4" Particleboard (Shelving)	21.5	\$0.11	\$2.37
1/4" Hardwood Plywood (Shelving)	157.5	\$0.16	\$25.20
3/4" Particleboard (Shelving)	21.0	\$0.11	\$2.31
3/4" Hardwood Plywood (Entertainment Center)	167.1	\$0.20	\$33.42
1/4" Hardwood Plywood (Entertainment Center)	36.8	\$0.16	\$5.89
1" Solid Maple (Entertainment Center)	11.7	\$0.00	\$0.00
Total Surface Area	1,965.8	-----	\$387.68

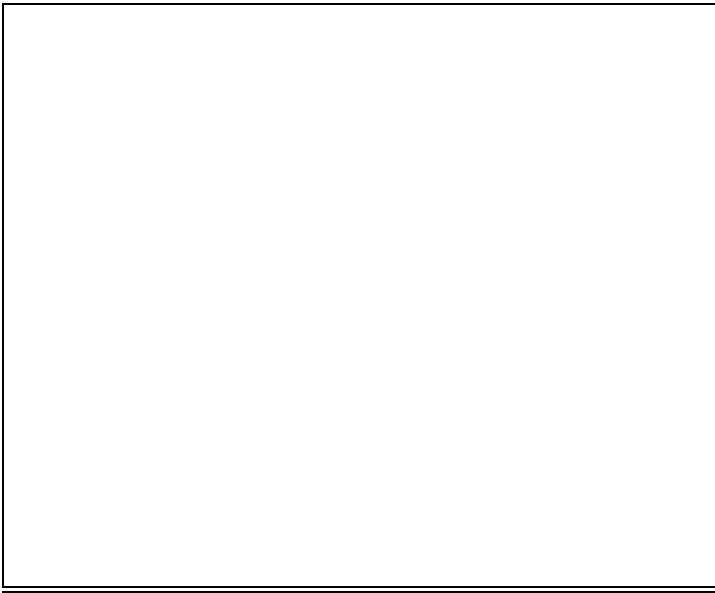
(1) Cost of materials estimated with Cabnetware (Planit Solutions, Inc., 2004); assumes the use of 11 interior doors and two exterior doors.
(2) Assumed 10% incremental door price due to regulation for 11 doors at \$129 and 2 doors at \$195.

C. Design Plans

1. 800 ft² Home (Home Plan 9802; Dream House Source)



2. 2,000 ft² Home (Home Plan 18401; Dream House Source)



References

Dream House Source. Not Dated. Home Plan 9802. Downloaded: 20 July 2006.
From: <http://www.dreamhomesource.com/Plan.asp?PlanID=9802>

Dream House Source. Not Dated. Home Plan 18401. Downloaded: 20 July
2006. From: <http://www.dreamhomesource.com/Plan.asp?PlanID=18401>

Planit Solutions, Inc. 2004. Cabnetware. From: <http://www.planitsolutions.com>.
Downloaded: 29 August 2006.