# Wood & Other Materials Used to Construct Nonresidential Buildings

**UNITED STATES**

**2011**

**A Cooperative Study Sponsored by Industry and Government**

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# Wood and Other Materials Used to Construct Nonresidential Buildings in the United States 2011


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# Wood and Other Materials Used to Construct Nonresidential Buildings in the United States 2011

## EXECUTIVE SUMMARY

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## ABSTRACT

The construction of low-rise nonresidential buildings is an important market for lumber, engineered wood products, and structural and nonstructural wood panels in the United States. This report examines low-rise nonresidential buildings of six or fewer stories. Those with more than six stories are normally severely restricted by building codes from being wood framed.

The value of all low-rise nonresidential buildings constructed in 2011 totaled $208 billion. Construction in 2011 was still being severely impacted by the lingering recession of the late 2000s, and when measured in inflation adjusted dollars, was 35 percent below the high reached in 2008. Total floor area constructed was also impacted. The 733 million $ft^2$ built in 2011 was just under two-thirds of that built in 2008. This value of construction and floor area resulted in the consumption of 627 million board feet (bf) of lumber, 27 million linear feet of wood I-joists, 67 million bf of glulam timber, 6 million cubic feet of structural composite lumber, 1 million square feet, 3/8-in. basis ($ft^2$) of engineered rim boards, and small amounts of cross- laminated timber, as well as 712 million $ft^2$ of structural panels, and 19 million $ft^2$ of nonstructural panels. When converted to board feet equivalents [1](bfe), total wood products consumption was estimated to be 1,214 million bfe. These volumes were used to construct nearly 10,500 new buildings and major additions and for alterations and renovations to numerous existing buildings. Volumes include allowances for onsite waste and loss. Not included are the amounts of wood used for interior finishing, outdoor structures, and facilitation (temporary uses such as concrete forms, shoring, etc.)

Keywords: Nonresidential construction, wood products consumption, value of new construction, lumber, structural panels, nonstructural panels, engineered wood products, wood I-joists, glulam timber, structural composite lumber, engineered rim boards, cross-laminated timber.

[1] Board foot equivalents (bfe) are the amounts of non-lumber wood products converted to equivalent board foot volume based on the following conversions: 1 lf (I-joist) = 2 bfe; 1 $ft^3$ = 16 bfe, and, 1 $ft^2$, 3/8-in. basis = 0.5 bfe.

## EXECUTIVE SUMMARY

The construction of low-rise nonresidential buildings (buildings with six or fewer stories above ground level) is an important market for lumber, engineered wood products, and structural and nonstructural wood panels, as well as a promising market for newly developed wood products such as cross-laminated timber. Annual consumption of wood products is dependent on many factors, including the number, types, and geographical locations of new buildings started, building size and height, architectural characteristics, and principal framing type. The extent of alterations, renovations, and remodeling to existing buildings also affects wood products consumption. In a study conducted in conjunction with the USDA Forest Service and others in 2003 and updated with new construction value and wall-framing incidence data in 2008, low-rise nonresidential buildings were defined to be buildings with four or fewer stories. A re-evaluation of the International Building Code suggested that a sizeable number of buildings with five or six stories could readily be constructed of wood with minor design changes. For this reason, this study was based on buildings with six or fewer stories. Also, the 2003 and 2008 studies were based on a limited number of buildings in which the quantities of specified wood products in the blueprints were used to develop factors of wood use. The current study is based on a much larger sample and with a detailed database of buildings currently or soon to be under construction. For these and other reasons, consumption values from the current study are not strictly

### CONSTRUCTION VALUE AND FLOOR AREA

In 2011, all types of construction activity in the United States were still being severely impacted by the continuing economic recession that began in the late 2000's. Total value of all construction in the United States was valued at $778 billion (USDC 2013) (Fig. ES-1). Residential and nonresidential buildings were nearly equal in value at 36 percent and 35 percent of total construction, respectively. Other nonresidential construction accounted for the remaining 29 percent of total value. Other nonresidential includes all construction that is not buildings, such as bridges, highways, dams, etc.

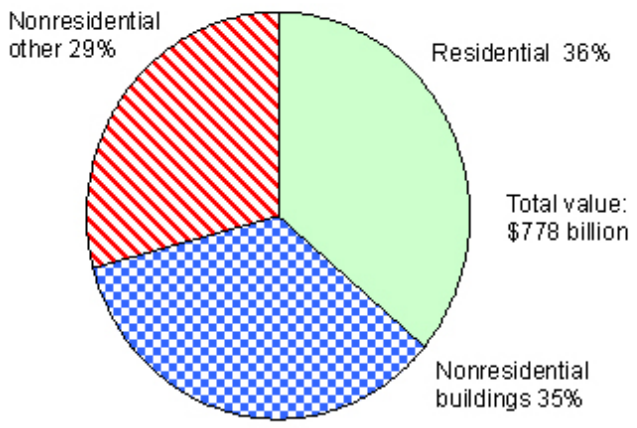



**Figure ES-1. Value of construction in the U.S., by type, 2011.**

The construction of all nonresidential buildings in 2011 was valued at $289 billion current dollars or $228 (inflation-adjusted constant 2005 dollars), about 54 percent of all nonresidential construction (Fig. ES-2). This level of nonresidential buildings was at its lowest mark since 2002, nearly 35 percent below the high of $355 billion reached in 2008. The gap between buildings and other nonresidential construction was also at its low mark over the 10-year period. The construction of low-rise nonresidential buildings (buildings with six or fewer stories) was estimated to be $164 billion (2005 $) in 2011, about 72 percent of all nonresidential buildings.

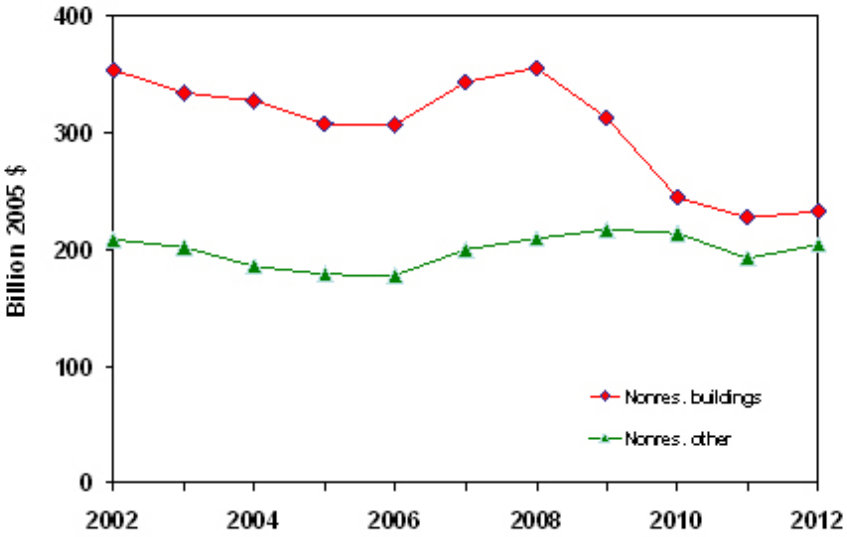



Figure ES-2. Value of nonresidential construction in the U.S., by type, 2002-2012.

Total floor area in new and major additions to low-rise nonresidential buildings totaled 733 million $ft^2$ in 2011, which was less than two-thirds of the area built in 2008 (Reed Construction Data 2013). The use of wood and other building products is ultimately dependent on new floor area added. Changes in floor area will be reflected in changes in building product consumption.

In 2011, total low-rise nonresidential building construction was $208 billion current dollars (Table ES-1). Figure ES-3 shows the value of construction by building type. Schools and Public buildings had the highest value of construction at approximately $47 billion each, or a combined 45 percent of total construction. This is a dramatic change from 2008 when

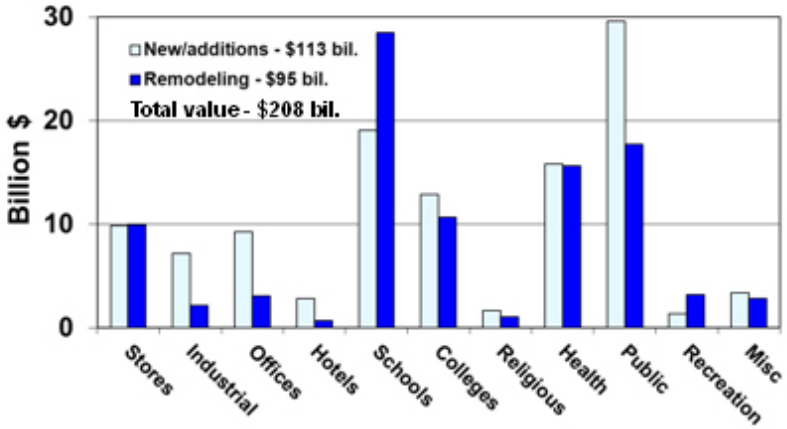



Figure ES-3. Value of new/additions vs. remodeling in low-rise nonresidential buildings in the U.S., 2011.

Schools and Public buildings accounted for just 19 percent of all construction. The value of buildings publically financed as a percentage of total value in 2011 stood at 42 percent, 7 percent above the 10-year average. This increase may be partially attributable to the The American Recovery and Reinvestment Act of 2009[2]. Religious and Hotels were the two lowest valued building types at under $4 billion each, for a combined 3 percent of total low-rise nonresidential construction.

The continuing economic recession also affected the mix of new construction (new buildings and major additions) to remodeling (alterations and renovations) in low-rise nonresidential buildings. During times of slow economic growth, new construction tends to fall while remodeling of existing structures tends to increase as a proportion of total construction value. Older buildings are refurbished in favor of new construction. The same is evident in residential construction. In 2003, new construction accounted for 82 percent of all construction (McKeever, Adair, O'Connor 2006) but fell to 54 percent of all construction in 2011. Some building types, such as Public were much less affected by this drop in new construction to remodeling than other buildings type such as Schools (Fig. ES-3).

## WOOD PRODUCTS CONSUMPTION

In 2011, the construction of new and major additions to low-rise nonresidential buildings and alterations, renovations, and remodeling of existing buildings required 627 million board feet (million bf) of lumber, 222 million board feet equivalents (million bfe) of engineered wood products, 712 million square feet, 3/8-in. basis (million $ft^2$), of structural panels, and 19 million $ft^2$ of nonstructural panels (Table ES-1, Fig. ES-4). Engineered wood includes 27 million linear feet (million lf) of wood I-joists, 67 million bf of glulam timber, 6 million cubic feet (million $ft^3$) of structural composite lumber (SCL), 1 million $ft^2$ of rim boards, and small amounts of newly certified cross-laminated timber. When converted to board feet equivalents, a combined 1,214 million bfe of wood was consumed for low-rise nonresidential construction in 2011. Included in

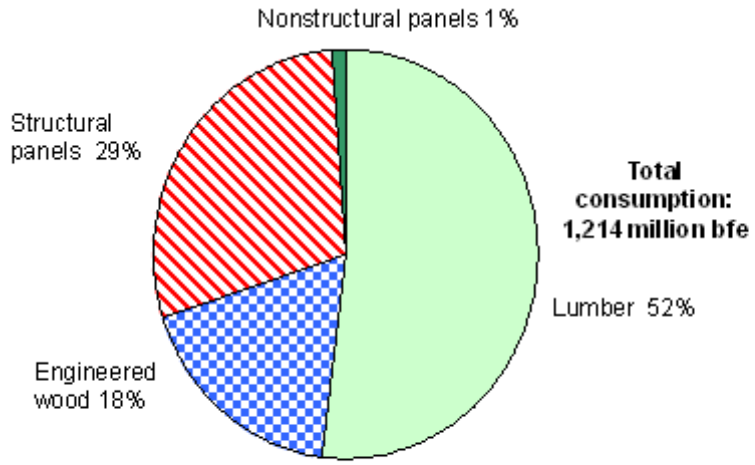



**Figure ES-4. Wood products consumption for low-rise nonresidential construction in the U.S., by type, 2011.**

[2] http://www.recovery.gov/About/Pages/The_Act.aspx *(Accessed March 24, 2013)*

this figure are framing, columns, stairs, siding, soffit, fascia, exterior trim, sheathing, and underlayment, as well as allowances for onsite waste and loss. Just 1 percent of the 1,214 million bfe was for nonstructural type uses (siding, soffit, fascia, exterior trim). Total volumes represent about 1 percent of total U.S. lumber consumption, 3 percent of total structural panel consumption, and 15 percent of engineered wood products consumption in 2011. Not included are amounts of wood used principally for interior finishing, outdoor structures, and for facilitation (temporary uses such as concrete forms, shoring, etc.).

The South was by far the region with the highest level of wood products consumption in 2011, at 531,120 bfe (Tables ES-1, ES-2). Each other region consumed less than half as much as the South. Regional wood consumption patterns follow closely regional population patterns with the exception of the West. The Northeast and Midwest each consumed wood at about the same proportion as their population, while the South consumed about 7 percent more wood than their population, and the West 7 percent less. Consumption by divisions within regions generally reflect use patterns of their respective region. The South Atlantic and West South Central were the top two consuming divisions with combined lumber, engineered wood, and wood panels, accounting for about 38 percent of total consumption. This percentage is the same as the bottom five divisions, which also consumed 38 percent. The Pacific and East North Central divisions were intermediate in consumption.

Wood products consumption is dependent not only on the overall extent of construction, but also on the types of buildings being constructed. Health, Schools, and Stores ranked first, second, and third in total wood products consumption in 2011. Combined, they accounted for nearly one-half (47 percent) of all wood consumption—569 million bfe (Table ES-2). High levels of construction of Hotels and Offices in 2008, and to a lesser extent in 2003, helped to reduce their overall construction levels in 2011, dropping them from first and second ranking in 2008 to seventh and sixth, respectively. Health buildings were not only ranked first overall in 2011, but were also first in lumber and structural panel use, and third in engineered wood and nonstructural panel use.

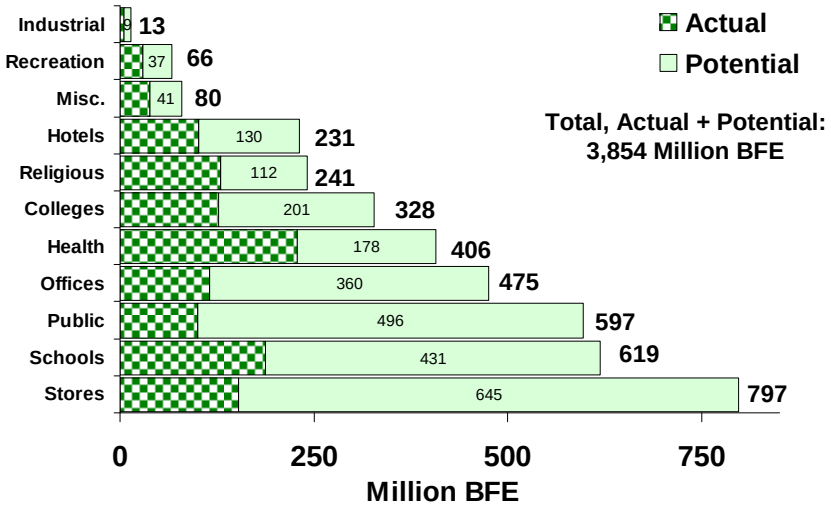



**Figure ES-5. Actual and incremental potential wood products use in low-rise nonresidential buildings in the U.S., 2011.**

Conversely, Misc., Recreation, and Industrial were the lowest wood product-using building types, accounting for a combined 72 million bfe, just 6 percent of all wood consumption.

## POTENTIAL WOOD PRODUCTS CONSUMPTION

Great potential exists for increasing the amounts of wood products used for low-rise nonresidential building construction. Potential is defined as the incremental amounts of wood that could be used if all major building applications (framing, columns, stairs, siding, soffit, fascia, exterior trim, sheathing and underlayment) in concrete or steel- framed buildings were built entirely with wood, and if all major building applications in wood-framed buildings that were not wood were converted to wood. However, not all buildings and applications can be built from wood. To qualify for wood construction, specific characteristics of the building must meet the International Building Code standards for allowable wood construction. Potential applies only to new construction and major additions. Alterations and renovations are typically too varied and not so dependent on building codes as new construction to reliably estimate incremental potential. Wall-framing type is a key determinant of wood potential. In 2011, an estimated 12 percent of all nonresidential low-rise buildings were categorized as wood framed, based on principal exterior wall framing material (Table ES-3). This is a small increase from 10 percent in 2003 and 11 percent in 2008. Most building types exhibited modest changes of plus or minus 7 percentage points in wood-framed share between 2011 and previous years with the exception of Religious and Misc. buildings, which increased their wood shares by more than 12 percentage points each. Conversely, Stores, Industrial and Public buildings had the lowest at 7 percent each. This would suggest that Religious and Misc buildings should have lower incremental wood potential, while Stores, Industrial, and Public should have higher incremental potential. This is in fact the case for all of these building types with the exception of Industrial buildings which have the lowest incremental potential (Table ES-4). Many Industrial buildings do not meet the building code criteria needed to be a candidate for wood framing.

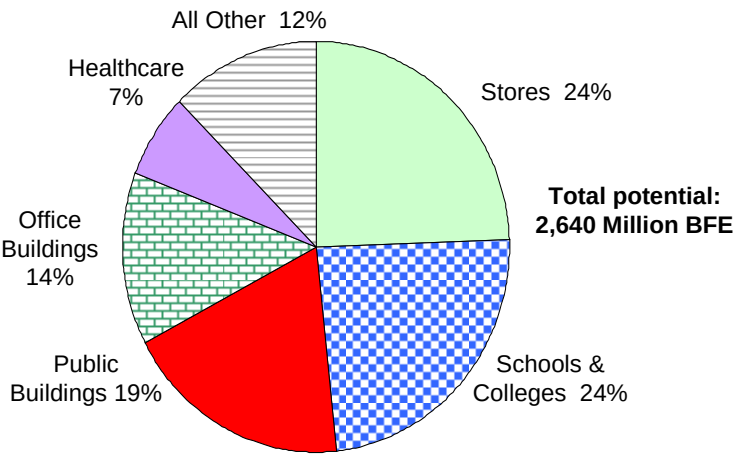



**Figure ES-6. Wood potential for new low-rise nonresidential buildings in the U.S., by principal building groups, 2011.**

In 2011, an additional 2,640 million bfe of wood products could have been used in low-rise nonresidential buildings if all low-rise concrete and steel-framed buildings had been built entirely from wood, and if nonwood components of wood framed buildings were built with wood (Table ES-4). This potential consisted of 1,253 million bf of lumber, 700 million bfe of engineered wood, 1,298 million $ft^2$ of structural panels, and 78 million $ft^2$ of nonstructural panels. The combined additional volumes represent more than a two-fold increase in wood use. If all of the incremental potential were to be achieved, total consumption would increase from 1,214 million bfe to 3,854 million bfe (Figs. ES-5, ES-6).

The South was not only the region with the highest level of actual wood products consumption in 2011, but was also the region with the highest potential to incrementally increase consumption. Nearly 47 percent of the total 2,640 million bfe of potential wood consumption was in the South (Table ES-4). Each other region accounted for about 18 percent. Regional wood potential patterns follow closely regional patterns of actual consumption. Potential consumption by divisions within regions generally reflect use patterns of their respective region. The South Atlantic division had by far the highest potential with combined lumber, engineered wood, and wood panels accounting for about 27 percent of total potential. The bottom two divisions (Mountain and East South Central) each accounted for less than 7 percent of total potential.

**COMPARING 2011 TO A TYPICAL YEAR**

The continuing U.S. economic recession that began in the late 2000's started to negatively impact low-rise nonresidential building construction in 2009, continued through 2011 and into 2012 and 2013. Based on information from Reed Construction Data (2013), floor area added for new and major additions to low-rise (six and fewer stories above ground) nonresidential buildings during the 2009 through 2011 period averaged just 735 million square feet ($ft^2$). Prior to 2009, floor area added during the more typical construction period 2005 through 2008 averaged in excess of 1,300 million $ft^2$. This 44 percent reduction in floor area from typical, coupled with other recession related changes, was responsible for dramatically reduced levels of building products consumption.

To answer concerns about the effects of the current recession ion nonresidential construction, and the potential for volume growth, we remade 2011 into a more typical "normal" nonresidential construction year. The assumptions used were: (Tables ES-5, ES-6).

1. Assume a total of 1,300 million $ft^2$ of new floor area added.
2. Assume the same distribution of floor area to building types in 2011 as in a more typical year to avoid recession related effects. Since 2003 was more typical than 2011, and since it's the only non-recession year for which we have building type distributions, the 2003 distribution was used.
3. Assume the same ratio of new and major additions construction to alterations, renovations and remodeling (R&R) as in 2003. This will help negate any shifts to R&R caused by a recession as in 2011.

4. Use 2011 framing type distributions because they reflect recent shifts between wood, concrete and steel framing preferences.
5. Use 2011 wood use factors (use per $ft^2$ of floor area) because they reflect current building practices.

Based on these assumptions, total wood use for all new and major additions construction increased from 786 million board feet equivalents (bfe) in 2011 to 1,411 million bfe in a more typical year, a 1.8 fold increase. (Table ES-7). Wood use for alterations, renovations and remodeling fell from 429 to 379 million bfe (Table ES-8). This reduction was based largely on lower rates of R&R activity in a typical "good" year as compared to a "bad" recession year.

Overall, total wood use for all low-rise nonresidential construction increased from 1,214 in 2011 to 1,790 million bfe in a typical year. This was a 1.5 fold increase (Table ES-9). It may take three to five years for nonresidential construction to return to a typical year. When it does, wood use will be much higher than in 2011, which was influenced by recession.

The potential incremental volume gained by converting concrete and steel buildings and buildings with less than 100% wood construction was 2,640 million bfe in 2011. In the typical year, with more overall construction, the potential increase was 4,508 million bfe (Table ES-10). This represents a 1.7 fold increase from 2011.

**SUMMARY AND CONCLUSIONS**

Nonresidential building construction is an important market for wood products, but one that should not be taken for granted. Nonwood building products are continually challenging wood in many nonresidential building applications. But at the same time, new wood products and innovative building practices are working to increase the use of wood. The acceptance by code and consumers of cross-laminated timber building systems, for example, could substantially increase wood use in the future.

In 2011, Health and Schools were the building types with the highest wood use. Combined, they accounted for more than one third of total consumption. Industrial and Recreation buildings were the lowest, using just under 3 percent of all wood. Stores and Public were the building types with greatest potential, while Industrial and Recreation were the lowest. Schools had much of their potential attributable to very high levels of nonstructural panels. Schools accounted for more than 90 percent of nonstructural panel potential.

The South consistently used more wood in total than any other region, and also used more of each product group. Two divisions in the South, South Atlantic, and West South Central, led all divisions in total wood use, and in all product groups except for engineered wood. The South and its divisions consistently led all other regions and divisions in potential wood consumption.

A large unfulfilled potential exists to greatly increase wood products consumption in nonresidential construction. While the strategies needed to fill this potential were not a part of

this study, the data here may provide clues and approaches for the wood products industry as it plans for the future. One such approach would be the development of new wood-based products that are competitive in performance and value to concrete and steel, thereby creating an advantage for wood. Wood is, must remain, and must become even more competitive in order to maintain and increase its share of the low-rise nonresidential building market.

TABLE ES-1: CONSTRUCTION VALUE, AND LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION IN THE U.S., BY BUILDING TYPE AND GEOGRAPHIC AREA, 2011.

| | | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | | | |
| | | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | | | |
| Characteristic | Construction value Mil. $ | Lumber[1] Th. bf | I-Joist Th. lf | Glulam Th. bf | SCL[2] Th. ft$^3$ | Rim Board[3] Th. ft$^2$ 3/8" | CLT[4] Th. ft$^3$ | Total[5] Th. bfe | TOTAL Th. bfe | Softwood Plywood Th. ft$^2$ 3/8" | OSB Th. ft$^2$ 3/8" | Total Th. ft$^2$ 3/8" | Panels[6] Th. ft$^2$ 3/8" | TOTAL Th. ft$^2$ 3/8" | TOTAL Th. bfe[7] | TOTAL Th. bfe |
| Building type | | | | | | | | | | | | | | | | | |
| Stores | 19,796 | 71,281 | 0 | 3,398 | 250 | 51 | 0 | 7,432 | 78,712 | 147,847 | 351 | 148,198 | 0 | 148,198 | 74,099 | 152,811 |
| Industrial | 9,377 | 3,084 | 12 | 2 | 20 | 0 | 0 | 353 | 3,437 | 2,500 | 0 | 2,500 | 0 | 2,500 | 1,250 | 4,687 |
| Offices | 12,294 | 63,606 | 96 | 396 | 389 | 53 | 0 | 6,835 | 70,442 | 63,652 | 25,517 | 89,169 | 0 | 89,169 | 44,584 | 115,026 |
| Hotels | 3,542 | 40,262 | 7,646 | 2 | 1,567 | 199 | 0 | 40,468 | 80,730 | 41,254 | 0 | 41,254 | 0 | 41,254 | 20,627 | 101,357 |
| Schools | 47,511 | 105,232 | 6,528 | 19,999 | 1,502 | 342 | 5 | 57,339 | 162,571 | 28,446 | 3,612 | 32,058 | 17,719 | 49,776 | 24,888 | 187,459 |
| Colleges | 23,547 | 68,510 | 529 | 325 | 779 | 104 | 0 | 13,901 | 82,412 | 88,095 | 0 | 88,095 | 173 | 88,268 | 44,134 | 126,546 |
| Religious | 2,709 | 88,674 | 4,388 | 2,257 | 297 | 123 | 0 | 15,845 | 104,519 | 50,777 | 53 | 50,830 | 0 | 50,830 | 25,415 | 129,934 |
| Health | 31,465 | 112,537 | 3,634 | 6,797 | 1,143 | 167 | 0 | 32,433 | 144,970 | 135,995 | 30,249 | 166,244 | 767 | 167,011 | 83,506 | 228,475 |
| Public | 47,302 | 47,237 | 1,734 | 18,252 | 132 | 206 | 0 | 23,936 | 71,173 | 56,494 | 977 | 57,470 | 810 | 58,280 | 29,140 | 100,313 |
| Recreation | 4,584 | 11,559 | 0 | 8,284 | 25 | 8 | 0 | 8,686 | 20,245 | 18,124 | 0 | 18,124 | 0 | 18,124 | 9,062 | 29,308 |
| Misc. | 6,251 | 14,772 | 2,367 | 7,370 | 144 | 111 | 0 | 14,460 | 29,232 | 17,932 | 0 | 17,932 | 0 | 17,932 | 8,966 | 38,198 |
| All buildings | 208,380 | 626,755 | 26,935 | 67,082 | 6,249 | 1,364 | 5 | 221,689 | 848,443 | 651,115 | 60,759 | 711,874 | 19,468 | 731,343 | 365,671 | 1,214,114 |
| Region | | | | | | | | | | | | | | | | |
| Northeast | 39,480 | 108,719 | 3,483 | 12,572 | 1,345 | 250 | 0 | 41,175 | 149,894 | 113,095 | 13,693 | 126,788 | 2,976 | 129,764 | 64,882 | 214,776 |
| New England | 13,051 | 41,059 | 1,050 | 5,366 | 646 | 99 | 0 | 17,860 | 58,918 | 38,762 | 3,144 | 41,906 | 1,243 | 43,149 | 21,575 | 80,493 |
| Mid Atlantic | 26,429 | 67,660 | 2,432 | 7,206 | 698 | 151 | 0 | 23,315 | 90,976 | 74,333 | 10,549 | 84,881 | 1,733 | 86,614 | 43,307 | 134,283 |
| Midwest | 36,135 | 126,683 | 5,727 | 16,663 | 1,747 | 316 | 0 | 56,221 | 182,904 | 132,212 | 12,157 | 144,369 | 4,718 | 149,087 | 74,543 | 257,447 |
| E N Central | 22,222 | 73,317 | 2,900 | 11,204 | 1,160 | 206 | 0 | 35,670 | 108,986 | 75,335 | 7,982 | 83,317 | 3,247 | 86,564 | 43,282 | 152,268 |
| W N Central | 13,914 | 53,367 | 2,827 | 5,459 | 586 | 110 | 0 | 20,551 | 73,918 | 56,877 | 4,175 | 61,052 | 1,470 | 62,522 | 31,261 | 105,179 |
| South | 79,268 | 284,991 | 12,556 | 25,627 | 2,226 | 543 | 0 | 86,628 | 371,619 | 285,024 | 25,532 | 310,557 | 8,446 | 319,002 | 159,501 | 531,120 |
| South Atlantic | 40,284 | 149,584 | 5,980 | 15,071 | 1,256 | 302 | 0 | 47,272 | 196,856 | 156,188 | 14,797 | 170,984 | 3,542 | 174,526 | 87,263 | 284,119 |
| E S Central | 10,861 | 40,034 | 1,928 | 3,734 | 328 | 71 | 0 | 12,875 | 52,910 | 40,742 | 3,599 | 44,341 | 1,351 | 45,691 | 22,846 | 75,755 |
| W S Central | 28,123 | 95,373 | 4,648 | 6,822 | 642 | 170 | 0 | 26,481 | 121,854 | 88,095 | 7,137 | 95,231 | 3,554 | 98,785 | 49,393 | 171,246 |
| West | 53,497 | 106,361 | 5,169 | 12,220 | 931 | 255 | 5 | 37,665 | 144,026 | 120,784 | 9,377 | 130,161 | 3,329 | 133,490 | 66,745 | 210,771 |
| Mountain | 15,393 | 37,195 | 1,836 | 2,350 | 295 | 75 | 5 | 10,852 | 48,047 | 40,293 | 2,997 | 43,290 | 1,176 | 44,466 | 22,233 | 70,280 |
| Pacific | 38,104 | 69,166 | 3,334 | 9,870 | 637 | 180 | 0 | 26,814 | 95,980 | 80,491 | 6,380 | 86,871 | 2,153 | 89,024 | 44,512 | 140,492 |
| U.S. | 208,380 | 626,755 | 26,935 | 67,082 | 6,249 | 1,364 | 5 | 221,689 | 848,443 | 651,115 | 60,759 | 711,874 | 19,468 | 731,343 | 365,671 | 1,214,114 |

[1]Includes framing lumber, boards, wood trusses, and shakes, shingles and siding.

[2]Structural composite lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross-laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent of engineered wood (1 lf I-joist = 2 BF equivalents; 1 ft$^3$ SCL and CLT = 16 BF equivalents, 1 ft$^2$, 3/8" basis = 0.5 BF equivalent).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 ft$^2$, 3/8" basis = 0.5 BF equivalents.

**Table ES- 1: Construction Value, & Lumber, Engineered Wood, & Wood Panels Used by Building Type & Geography**

TABLE ES-2: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION[1] IN THE U.S., BY BUILDING TYPE AND GEOGRAPHIC AREA, RANKED HIGH TO LOW, 2011.

| | Lumber[2] | | Engineered Wood[3] | | Structural Panels[4] | | Non-Structural Panels[5] | | All Wood Products[6] | |
|---|---|---|---|---|---|---|---|---|---|---|
| Rank | Building Type | Th. bf | Building Type | Th. bfe | Building Type | Th. ft$^2$ 3/8" | Building Type | Th. ft$^2$ 3/8" | Building Type | Th. bfe |
| 1 | Health | 112,537 | Schools | 57,339 | Health | 166,244 | Schools | 17,719 | Health | 228,475 |
| 2 | Schools | 105,232 | Hotels | 40,468 | Stores | 148,198 | Public | 810 | Schools | 187,459 |
| 3 | Religious | 88,674 | Health | 32,433 | Offices | 89,169 | Health | 767 | Stores | 152,811 |
| 4 | Stores | 71,281 | Public | 23,936 | Colleges | 88,095 | Colleges | 173 | Religious | 129,934 |
| 5 | Colleges | 68,510 | Religious | 15,845 | Public | 57,470 | Stores | 0 | Colleges | 126,546 |
| 6 | Offices | 63,606 | Misc. | 14,460 | Religious | 50,830 | Industrial | 0 | Offices | 115,026 |
| 7 | Public | 47,237 | Colleges | 13,901 | Hotels | 41,254 | Offices | 0 | Hotels | 101,357 |
| 8 | Hotels | 40,262 | Recreation | 8,686 | Schools | 32,058 | Hotels | 0 | Public | 100,313 |
| 9 | Misc. | 14,772 | Stores | 7,432 | Recreation | 18,124 | Religious | 0 | Misc. | 38,198 |
| 10 | Recreation | 11,559 | Offices | 6,835 | Misc. | 17,932 | Recreation | 0 | Recreation | 29,308 |
| 11 | Industrial | 3,084 | Industrial | 353 | Industrial | 2,500 | Misc. | 0 | Industrial | 4,687 |
| | All buildings | 626,755 | All buildings | 221,689 | All buildings | 711,874 | All buildings | 19,468 | All buildings | 1,214,114 |
| Rank | Region | Th. bf | Region | Th. bfe | Region | Th. ft$^2$ 3/8" | Region | Th. ft$^2$ 3/8" | Region | Th. bfe |
| 1 | South | 284,991 | South | 86,628 | South | 310,557 | South | 8,446 | South | 531,120 |
| 2 | Midwest | 126,683 | Midwest | 56,221 | Midwest | 144,369 | Midwest | 4,718 | Midwest | 257,447 |
| 3 | Northeast | 108,719 | Northeast | 41,175 | West | 130,161 | West | 3,329 | Northeast | 214,776 |
| 4 | West | 106,361 | West | 37,665 | Northeast | 126,788 | Northeast | 2,976 | West | 210,771 |
| | All regions | 626,755 | All regions | 221,689 | All regions | 711,874 | All regions | 19,468 | All regions | 1,214,114 |
| Rank | Division | Th. bf | Division | Th. bfe | Division | Th. ft$^2$ 3/8" | Division | Th. ft$^2$ 3/8" | Building Type | Th. bfe |
| 1 | South Atlantic | 149,584 | South Atlantic | 47,272 | South Atlantic | 170,984 | W S Central | 3,554 | South Atlantic | 284,119 |
| 2 | W S Central | 95,373 | E N Central | 35,670 | W S Central | 95,231 | South Atlantic | 3,542 | W S Central | 171,246 |
| 3 | E N Central | 73,317 | Pacific | 26,814 | Pacific | 86,871 | E N Central | 3,247 | E N Central | 152,268 |
| 4 | Pacific | 69,166 | W S Central | 26,481 | Mid Atlantic | 84,881 | Pacific | 2,153 | Pacific | 140,492 |
| 5 | Mid Atlantic | 67,660 | Mid Atlantic | 23,315 | E N Central | 83,317 | Mid Atlantic | 1,733 | Mid Atlantic | 134,283 |
| 6 | W N Central | 53,367 | W N Central | 20,551 | W N Central | 61,052 | W N Central | 1,470 | W N Central | 105,179 |
| 7 | New England | 41,059 | New England | 17,860 | E S Central | 44,341 | E S Central | 1,351 | New England | 80,493 |
| 8 | E S Central | 40,034 | E S Central | 12,875 | Mountain | 43,290 | New England | 1,243 | E S Central | 75,755 |
| 9 | Mountain | 37,195 | Mountain | 10,852 | New England | 41,906 | Mountain | 1,176 | Mountain | 70,280 |
| | All divisions | 626,755 | All divisions | 221,689 | All divisions | 711,874 | All divisions | 19,468 | All divisions | 1,214,114 |

[1]Includes new construction, major additions, and alterations, renovations, & remodeling.

[2]Includes framing lumber, boards, wood trusses, and shakes, shingles and siding.

[3]Includes I-joists, glulam, structural composite lumber, engineered rim boards, and cross-laminated timber.

[4]Includes softwood plywood and OSB.

[5]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[6]Includes lumber, and board foot equivalent of engineered wood and wood panels. See Table ES-1 for conversion factors.

**Table ES- 2: Lumber, Engineered Wood, & Wood Panels Used by Building Type, Ranked High to Low**

## TABLE ES-3: WALL FRAMING TYPE INCIDENCE IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION[1] IN THE U.S., BY BUILDING TYPE, 2003, 2008 & 2011.

| Building and framing type | Percentage of buildings | | | Building and framing type | Percentage of buildings | | |
|---|---|---|---|---|---|---|---|
| | 2003[2] | 2008[2] | 2011[3] | | 2003[2] | 2008[2] | 2011[3] |
| STORES | | | | RELIGIOUS | | | |
| Wood | 7% | 13% | 7% | Wood | 22% | 27% | 34% |
| Concrete | 29% | 26% | 20% | Concrete | 21% | 21% | 19% |
| Steel | 63% | 62% | 73% | Steel | 58% | 52% | 47% |
| INDUSTRIAL | | | | HEALTH | | | |
| Wood | 2% | 1% | 7% | Wood | 25% | 30% | 18% |
| Concrete | 38% | 39% | 47% | Concrete | 16% | 14% | 17% |
| Steel | 61% | 60% | 46% | Steel | 59% | 56% | 65% |
| OFFICES | | | | PUBLIC | | | |
| Wood | 12% | 12% | 12% | Wood | 7% | 2% | 7% |
| Concrete | 33% | 32% | 23% | Concrete | 39% | 11% | 23% |
| Steel | 55% | 57% | 65% | Steel | 55% | 88% | 69% |
| HOTELS | | | | RECREATION | | | |
| Wood | 59% | 58% | 54% | Wood | 12% | 10% | 13% |
| Concrete | 11% | 19% | 17% | Concrete | 29% | 23% | 26% |
| Steel | 30% | 23% | 28% | Steel | 60% | 67% | 62% |
| SCHOOLS | | | | MISC. | | | |
| Wood | 11% | 6% | 9% | Wood | 6% | 7% | 29% |
| Concrete | 26% | 24% | 23% | Concrete | 22% | 20% | 35% |
| Steel | 63% | 71% | 68% | Steel | 72% | 72% | 36% |
| COLLEGES | | | | ALL BUILDINGS | | | |
| Wood | 15% | 17% | 18% | Wood | 10% | 11% | 12% |
| Concrete | 21% | 16% | 23% | Concrete | 29% | 26% | 25% |
| Steel | 64% | 67% | 59% | Steel | 61% | 63% | 63% |

[1]New construction and additions only.

[2]Based on low-rise buildings with four or fewer stories.

[3]Based on low-rise buildings with six or fewer stories.

Sources: 2003 and 2008: McKeever 2010.

**Table ES- 3: Wall Framing Type Incidence by Building Type (2003, 2008 & 2011)**

TABLE ES-4: NET POTENTIAL CHANGE IN LUMBER, ENGINEERED WOOD, & WOOD PANEL VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION[1] IN THE U.S., BY BUILDING TYPE AND GEOGRAPHIC AREA, RANKED HIGH TO LOW, 2011.

| | Lumber[2] | | Engineered Wood[3] | | Structural Panels[4] | | Non-Structural Panels[5] | | All Wood Products[6] | |
|---|---|---|---|---|---|---|---|---|---|---|
| Rank | Building type | Th. bf | Building type | Th. bfe | Building type | Th. ft$^2$ 3/8" | Building type | Th. ft$^2$ 3/8" | Building type | Th. bfe |
| 1 | Stores | 392,261 | Public | 284,837 | Stores | 463,124 | Schools | 49,960 | Stores | 644,636 |
| 2 | Schools | 218,009 | Schools | 156,706 | Offices | 198,991 | Public | 26,872 | Public | 496,487 |
| 3 | Offices | 178,775 | Offices | 81,706 | Public | 152,441 | Health | 822 | Schools | 431,457 |
| 4 | Public | 121,994 | Hotels | 46,311 | Colleges | 131,256 | Colleges | 463 | Offices | 359,976 |
| 5 | Colleges | 106,576 | Health | 36,676 | Health | 104,752 | Stores | 0 | Colleges | 201,038 |
| 6 | Health | 88,512 | Colleges | 28,603 | Hotels | 90,107 | Industrial | 0 | Health | 177,975 |
| 7 | Religious | 68,804 | Stores | 20,813 | Schools | 63,525 | Offices | 0 | Hotels | 130,030 |
| 8 | Hotels | 38,665 | Religious | 20,387 | Religious | 44,744 | Hotels | 0 | Religious | 111,563 |
| 9 | Misc | 21,030 | Recreation | 12,737 | Recreation | 21,548 | Religious | 0 | Misc | 41,483 |
| 10 | Recreation | 13,354 | Misc | 11,002 | Misc | 18,904 | Recreation | 0 | Recreation | 36,865 |
| 11 | Industrial | 4,532 | Industrial | 53 | Industrial | 8,437 | Misc | 0 | Industrial | 8,803 |
| | All buildings | 1,252,512 | All buildings | 699,829 | All buildings | 1,297,828 | All buildings | 78,115 | All buildings | 2,640,314 |
| Rank | Region | Th. bf | Region | Th. bfe | Region | Th. ft$^2$ 3/8" | Region | Th. ft$^2$ 3/8" | Region | Th. bfe |
| 1 | South | 631,296 | South | 286,052 | South | 596,069 | South | 32,876 | South | 1,231,820 |
| 2 | Midwest | 251,445 | Midwest | 167,982 | Midwest | 295,713 | Northeast | 17,789 | Midwest | 574,227 |
| 3 | Northeast | 196,145 | Northeast | 125,102 | Northeast | 212,869 | Midwest | 13,888 | Northeast | 436,576 |
| 4 | West | 173,626 | West | 120,694 | West | 193,177 | West | 13,563 | West | 397,690 |
| | All buildings | 1,252,512 | All buildings | 699,829 | All buildings | 1,297,828 | All buildings | 78,115 | All buildings | 2,640,314 |
| Rank | Division | Th. bf | Division | Th. bfe | Division | Th. ft$^2$ 3/8" | Division | Th. ft$^2$ 3/8" | Division | Th. bfe |
| 1 | S Atlantic | 377,618 | S Atlantic | 160,531 | S Atlantic | 350,429 | S Atlantic | 17,432 | S Atlantic | 722,080 |
| 2 | W S Central | 159,314 | E N Central | 113,304 | E N Central | 180,213 | New England | 14,467 | E N Central | 362,611 |
| 3 | E N Central | 154,138 | W S Central | 98,561 | W S Central | 155,162 | W S Central | 10,533 | W S Central | 340,723 |
| 4 | Mid Atlantic | 111,914 | New England | 71,982 | Mid Atlantic | 141,892 | E N Central | 10,126 | Mid Atlantic | 237,641 |
| 5 | W N Central | 97,307 | Pacific | 70,422 | W N Central | 115,501 | Pacific | 9,575 | Pacific | 219,674 |
| 6 | E S Central | 94,364 | W N Central | 54,678 | Pacific | 103,812 | E S Central | 4,910 | W N Central | 211,617 |
| 7 | Pacific | 92,558 | Mid Atlantic | 53,120 | E S Central | 90,478 | Mountain | 3,988 | New England | 198,935 |
| 8 | New England | 84,231 | Mountain | 50,273 | Mountain | 89,364 | W N Central | 3,762 | Mountain | 178,017 |
| 9 | Mountain | 81,068 | E S Central | 26,960 | New England | 70,977 | Mid Atlantic | 3,322 | E S Central | 169,018 |
| | All divisions | 1,252,512 | All divisions | 699,829 | All divisions | 1,297,828 | All divisions | 78,115 | All divisions | 2,640,314 |

[1]New construction and major additions only.

[2]Includes framing lumber, boards, wood trusses, and shakes, shingles and siding.

[3]Includes I-joists, glulam, structural composite lumber, engineered rim boards, and cross-laminated timber.

[4]Includes softwood plywood and OSB.

[5]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[6]Includes lumber, and board foot equivalent of engineered wood and wood panels. See Table ES-1 for conversion factors.

**Table ES- 4: Net Potential Change in Lumber, Engineered Wood, & Wood Panel Volume Ranked High To Low**

TABLE ES-5: 2003 BUILDING TYPE DISTRIBUTION, 2011 FRAMING TYPE DISTRIBUTION, AND 2011 WOOD USE FACTORS USED TO ESTIMATE TYPICAL YEAR WOOD USE FOR NEW AND MAJOR ADDITIONS.

| Building type | Building type distri-bution, 2003 % | Framing type distribution, 2011 | | | Use per $ft^2$ of floor area, 2011 | | | |
|---|---|---|---|---|---|---|---|---|
| | | Wood % | Concrete % | Steel % | Lumber $Bf/ft^2$ | Eng Wood $Bf/ ft^2$ | Structural Panels $Ft^2/ft^2$ | Non-Str. panels $Ft^2/ft^2$ |
| Stores | 37% | 7% | 20% | 73% | 0.324 | 0.037 | 0.680 | 0.000 |
| Industrial | 15% | 7% | 47% | 46% | 0.033 | 0.004 | 0.027 | 0.000 |
| Offices | 12% | 12% | 23% | 65% | 0.607 | 0.065 | 0.852 | 0.000 |
| Hotels | 3% | 54% | 17% | 28% | 1.611 | 1.621 | 1.715 | 0.000 |
| Schools | 12% | 9% | 23% | 68% | 0.358 | 0.184 | 0.109 | 0.060 |
| Colleges | 5% | 18% | 23% | 59% | 0.739 | 0.145 | 0.963 | 0.002 |
| Religious | 3% | 34% | 19% | 47% | 4.600 | 0.814 | 2.643 | 0.000 |
| Health | 6% | 18% | 17% | 65% | 0.953 | 0.264 | 1.411 | 0.007 |
| Public | 1% | 7% | 23% | 69% | 0.426 | 0.219 | 0.524 | 0.008 |
| Recreation | 4% | 13% | 26% | 62% | 0.417 | 0.291 | 0.663 | 0.000 |
| Misc | 1% | 29% | 35% | 36% | 0.683 | 0.780 | 0.979 | 0.000 |
| All buildings | 100% | 12% | 25% | 63% | 0.551 | 0.189 | 0.649 | 0.014 |

**Table ES- 5: 2003 Building Type Distribution, 2011 Framing Type Distribution & Wood Use Factors Used To Estimate Typical Year Wood Use For New & Major Additions**

TABLE ES-6: ESTIMATED FLOOR AREA BY FRAMING TYPE FOR NEW AND MAJOR ADDITIONS, TYPICAL YEAR AND 2011.

| Building type | Floor area, typical year | | | | Reported floor area, 2011 | | | |
|---|---|---|---|---|---|---|---|---|
| | Wood Mil. $ft^2$ | Concrete Mil. $ft^2$ | Steel Mil. $ft^2$ | Total Mil. $ft^2$ | Wood Mil. $ft^2$ | Concrete Mil. $ft^2$ | Steel Mil. $ft^2$ | Total Mil. $ft^2$ |
| Stores | 34.2 | 98.8 | 353.5 | 486.4 | 10.7 | 31.0 | 110.8 | 152.5 |
| Industrial | 14.7 | 91.4 | 90.3 | 196.4 | 6.4 | 40.0 | 39.5 | 85.8 |
| Offices | 18.8 | 34.8 | 98.3 | 151.9 | 10.7 | 19.9 | 56.0 | 86.6 |
| Hotels | 20.3 | 6.5 | 10.5 | 37.3 | 11.5 | 3.7 | 6.0 | 21.2 |
| Schools | 13.1 | 34.7 | 103.6 | 151.3 | 13.1 | 34.9 | 104.1 | 152.0 |
| Colleges | 12.5 | 16.0 | 41.7 | 70.2 | 9.2 | 11.9 | 30.9 | 52.1 |
| Religious | 15.3 | 8.7 | 21.3 | 45.2 | 4.4 | 2.5 | 6.2 | 13.2 |
| Health | 13.1 | 12.9 | 48.2 | 74.1 | 12.4 | 12.3 | 45.8 | 70.4 |
| Public | 1.2 | 4.0 | 11.7 | 16.9 | 5.2 | 16.8 | 49.7 | 71.7 |
| Recreation | 6.8 | 13.9 | 33.1 | 53.8 | 2.4 | 4.8 | 11.6 | 18.8 |
| Misc | 4.7 | 5.8 | 6.0 | 16.5 | 2.5 | 3.1 | 3.2 | 8.8 |
| All buildings | 154.5 | 327.4 | 818.1 | 1,300.0 | 88.7 | 180.8 | 463.7 | 733.1 |

**Table ES- 6: Estimated Floor Area By Framing Type For New & Major Additions, Typical Year & 2011**

## TABLE ES-7: ESTIMATED WOOD USE FOR NEW AND MAJOR ADDITIONS, TYPICAL YEAR AND 2011.

| | Estimated actual wood use, typical year | | | | | Reported wood use, new & additions, 2011 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Building type | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf |
| Stores | 157.6 | 17.9 | 330.7 | 0.0 | 340.9 | 49.4 | 5.6 | 103.7 | 0.0 | 106.9 |
| Industrial | 6.4 | 0.7 | 5.3 | 0.0 | 9.8 | 2.8 | 0.3 | 2.3 | 0.0 | 4.3 |
| Offices | 92.2 | 9.9 | 129.5 | 0.0 | 166.8 | 52.5 | 5.6 | 73.8 | 0.0 | 95.1 |
| Hotels | 60.1 | 60.5 | 64.0 | 0.0 | 152.5 | 34.1 | 34.3 | 36.3 | 0.0 | 86.6 |
| Schools | 54.1 | 27.9 | 16.5 | 9.1 | 94.8 | 54.4 | 28.0 | 16.5 | 9.2 | 95.2 |
| Colleges | 51.8 | 10.2 | 67.6 | 0.1 | 95.9 | 38.5 | 7.6 | 50.1 | 0.1 | 71.1 |
| Religious | 207.9 | 36.8 | 119.5 | 0.0 | 304.5 | 60.5 | 10.7 | 34.8 | 0.0 | 88.7 |
| Health | 70.6 | 19.6 | 104.6 | 0.5 | 142.7 | 67.1 | 18.6 | 99.4 | 0.5 | 135.6 |
| Public | 7.2 | 3.7 | 8.8 | 0.1 | 15.4 | 30.5 | 15.7 | 37.6 | 0.5 | 65.3 |
| Recreation | 22.4 | 15.7 | 35.7 | 0.0 | 56.0 | 7.8 | 5.5 | 12.5 | 0.0 | 19.5 |
| Misc | 11.3 | 12.9 | 16.1 | 0.0 | 32.2 | 6.0 | 6.9 | 8.6 | 0.0 | 17.2 |
| All buildings | 741.7 | 215.6 | 898.3 | 9.9 | 1,411.4 | 403.7 | 138.8 | 475.6 | 10.3 | 785.5 |

**Table ES- 7: Estimated Wood Use For New & Major Additions, Typical Year & 2011**

## TABLE ES-8: ESTIMATED WOOD USE FOR ALTERATIONS, RENOVATIONS AND REMODELING (R&R), TYPICAL YEAR AND 2011.

| | Estimated R&R wood use, typical year | | | | | Reported R&R wood use, 2011 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Building type | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf |
| Stores | 12.7 | 0.2 | 43.1 | 0.0 | 34.5 | 21.9 | 1.8 | 44.5 | 0.0 | 46.0 |
| Industrial | 0.4 | 0.0 | 0.1 | 0.0 | 0.5 | 0.3 | 0.0 | 0.2 | 0.0 | 0.4 |
| Offices | 44.0 | 8.3 | 88.2 | 0.0 | 96.4 | 11.1 | 1.2 | 15.3 | 0.0 | 19.9 |
| Hotels | 1.1 | 0.6 | 1.0 | 0.0 | 2.2 | 6.2 | 6.2 | 5.0 | 0.0 | 14.8 |
| Schools | 6.7 | 3.8 | 5.7 | 12.4 | 19.5 | 50.9 | 29.3 | 15.5 | 8.5 | 92.2 |
| Colleges | 9.3 | 1.3 | 14.7 | 0.8 | 18.4 | 30.1 | 6.3 | 38.0 | 0.1 | 55.4 |
| Religious | 30.6 | 9.4 | 18.7 | 0.0 | 49.4 | 28.1 | 5.1 | 16.0 | 0.0 | 41.3 |
| Health | 12.9 | 2.8 | 29.1 | 4.6 | 32.6 | 45.4 | 13.8 | 66.8 | 0.3 | 92.8 |
| Public | 2.8 | 1.1 | 5.4 | 11.6 | 12.3 | 16.7 | 8.2 | 19.9 | 0.3 | 35.0 |
| Recreation | 6.8 | 1.1 | 6.9 | 0.0 | 11.4 | 3.7 | 3.2 | 5.7 | 0.0 | 9.8 |
| Misc | 4.6 | 83.4 | 26.7 | 0.0 | 101.3 | 8.7 | 7.6 | 9.3 | 0.0 | 21.0 |
| All buildings | 131.9 | 112.0 | 239.7 | 29.5 | 378.5 | 223.0 | 82.9 | 236.2 | 9.2 | 428.6 |

**Table ES- 8: Estimated Wood Use For Alterations, Renovations & Remodeling (R&R), Typical Year & 2011**

## TABLE ES-9: ESTIMATED WOOD USE FOR ALL NONRESIDENTIAL CONSTRUCTION, TYPICAL YEAR AND 2011.

| | Estimated actual wood use, typical year | | | | | Reported actual wood use, 2011 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Building type | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf |
| Stores | 170.4 | 18.1 | 373.8 | 0.0 | 375.4 | 71.3 | 7.4 | 148.2 | 0.0 | 152.8 |
| Industrial | 6.8 | 0.7 | 5.4 | 0.0 | 10.2 | 3.1 | 0.4 | 2.5 | 0.0 | 4.7 |
| Offices | 136.2 | 18.2 | 217.7 | 0.0 | 263.2 | 63.6 | 6.8 | 89.2 | 0.0 | 115.0 |
| Hotels | 61.1 | 61.1 | 65.0 | 0.0 | 154.8 | 40.3 | 40.5 | 41.3 | 0.0 | 101.4 |
| Schools | 60.8 | 31.7 | 22.2 | 21.5 | 114.3 | 105.2 | 57.3 | 32.1 | 17.7 | 187.5 |
| Colleges | 61.2 | 11.5 | 82.3 | 1.0 | 114.3 | 68.5 | 13.9 | 88.1 | 0.2 | 126.5 |
| Religious | 238.5 | 46.2 | 138.2 | 0.0 | 353.8 | 88.7 | 15.8 | 50.8 | 0.0 | 129.9 |
| Health | 83.6 | 22.4 | 133.7 | 5.1 | 175.4 | 112.5 | 32.4 | 166.2 | 0.8 | 228.5 |
| Public | 9.9 | 4.8 | 14.2 | 11.7 | 27.7 | 47.2 | 23.9 | 57.5 | 0.8 | 100.3 |
| Recreation | 29.3 | 16.8 | 42.6 | 0.0 | 67.3 | 11.6 | 8.7 | 18.1 | 0.0 | 29.3 |
| Misc | 15.9 | 96.2 | 42.8 | 0.0 | 133.5 | 14.8 | 14.5 | 17.9 | 0.0 | 38.2 |
| All buildings | 873.6 | 327.6 | 1,137.9 | 39.3 | 1,789.9 | 626.8 | 221.7 | 711.9 | 19.5 | 1,214.1 |

**Table ES- 9: Estimated Wood Use For All Nonresidential Construction, Typical Year & 2011**

## TABLE ES-10: ESTIMATED POTENTIAL WOOD USE FOR NEW AND MAJOR ADDITIONS, TYPICAL YEAR AND 2011.

| | Estimated potential wood use, typical year | | | | | Reported potential wood use, 2011 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Building type | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf | Lumber Mil bf | Eng Wood Mil bf | Structural Panels Mil $ft^2$ | Non-Str. Panels Mil $ft^2$ | Total Mil bf |
| Stores | 1,251.5 | 66.4 | 1,477.6 | 0.0 | 2,056.7 | 392.3 | 20.8 | 463.1 | 0.0 | 644.6 |
| Industrial | 10.4 | 0.1 | 19.3 | 0.0 | 20.1 | 4.5 | 0.1 | 8.4 | 0.0 | 8.8 |
| Offices | 313.5 | 143.3 | 349.0 | 0.0 | 631.3 | 178.8 | 81.7 | 199.0 | 0.0 | 360.0 |
| Hotels | 68.1 | 81.6 | 158.8 | 0.0 | 229.1 | 38.7 | 46.3 | 90.1 | 0.0 | 130.0 |
| Schools | 217.0 | 156.0 | 63.2 | 49.7 | 429.5 | 218.0 | 156.7 | 63.5 | 50.0 | 431.5 |
| Colleges | 143.7 | 38.6 | 177.0 | 0.6 | 271.0 | 106.6 | 28.6 | 131.3 | 0.5 | 201.0 |
| Religious | 236.3 | 70.0 | 153.7 | 0.0 | 383.1 | 68.8 | 20.4 | 44.7 | 0.0 | 111.6 |
| Health | 93.2 | 38.6 | 110.2 | 0.9 | 187.3 | 88.5 | 36.7 | 104.8 | 0.8 | 178.0 |
| Public | 28.7 | 67.1 | 35.9 | 6.3 | 116.9 | 122.0 | 284.8 | 152.4 | 26.9 | 496.5 |
| Recreation | 38.2 | 36.5 | 61.7 | 0.0 | 105.5 | 13.4 | 12.7 | 21.5 | 0.0 | 36.9 |
| Misc | 39.2 | 20.5 | 35.3 | 0.0 | 77.4 | 21.0 | 11.0 | 18.9 | 0.0 | 41.5 |
| All buildings | 2,439.8 | 718.6 | 2,641.6 | 57.5 | 4,508.0 | 1,252.5 | 699.8 | 1,297.8 | 78.1 | 2,640.3 |

**Table ES- 10: Estimated Potential Wood Use For New & Major Additions, Typical Year & 2011**

# INTRODUCTION

## BACKGROUND

Nonresidential building construction continues to be an important segment in the consumption of lumber and wood products in the United States. This is especially true now since the new residential construction industry—traditionally the primary user of structural softwood lumber and panels—has only recovered slightly from its market collapse which began in 2006. Traditionally, nonresidential buildings are much more likely than residential buildings to use steel and concrete above-grade structural elements despite the freedom that architects have to specify or recommend lumber and wood-based panels on many types of buildings.

The wood products industry sees greater penetration into nonresidential buildings as a prime growth opportunity. In order to best understand opportunities for wood products in nonresidential building construction, industry and government have joined together to study materials usage in nonresidential buildings in 2011.

Similar studies were conducted in 2003 and 2008 (McKeever, Adair, O'Connor 2006, McKeever 2010). The current study is based on approximately 10,000 building specifications distributed among nine Census divisions, and unlike earlier studies, includes five and six story buildings due to favorable code changes in recent years which allow more opportunities for structural wood products in taller buildings. Product categories now include not only primarily structural wood building materials, but also several categories of interior and exterior finish materials. For these and other reasons, consumption values from the current study are not strictly comparable to earlier studies, although relative measures of activity are still appropriate.

## STUDY OBJECTIVES

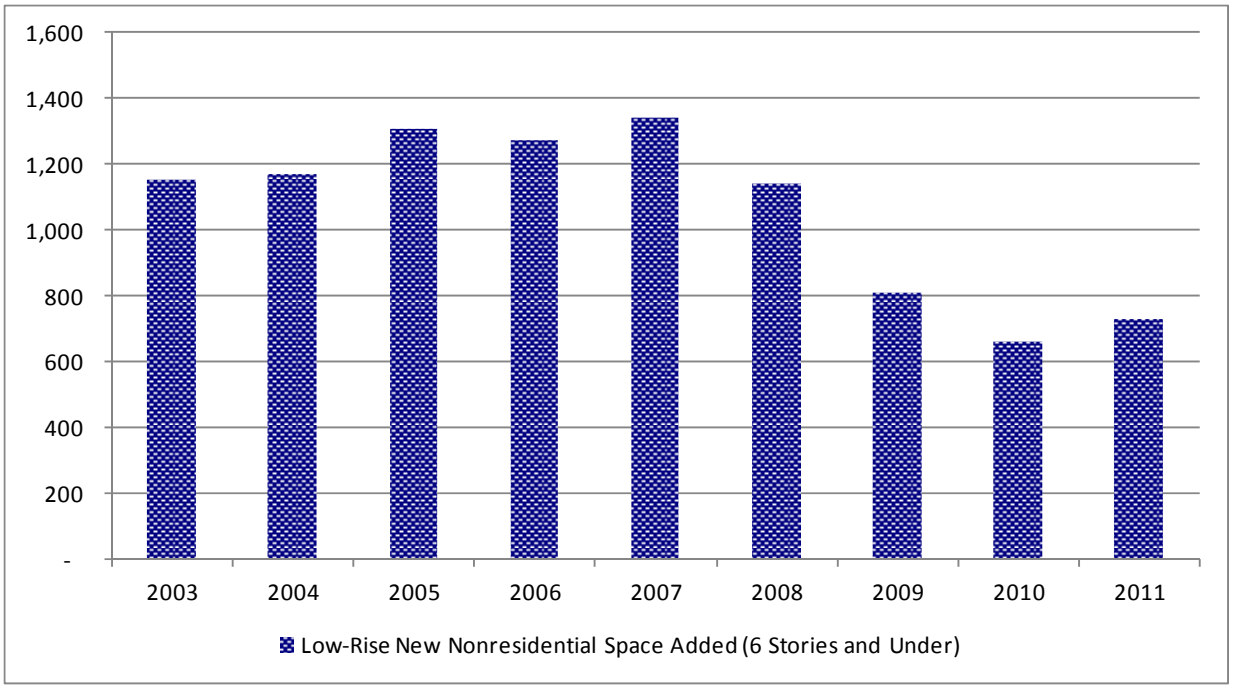
This study has two primary objectives. The first is to characterize nonresidential building construction markets in the U.S. by building type, building characteristics, primary structural material types, and volumes and shares of materials used in their construction in 2011. Included are both nonresidential building space added for new buildings and for major additions to existing buildings, and for alterations, renovations, and remodeling of existing buildings where no new space is added. The second objective is to quantify incremental wood potential for each building type, geographical area, and wood product. Potential is defined to be the incremental amounts of wood which could be used if all major building applications were built entirely with wood. This applies only to new and major addition construction to buildings which meet the International Building Code standards for allowable wood construction.

## NONRESIDENTIAL BUILDING CONSTRUCTION ACTIVITY AND VALUE

Based on U.S. Department of Commerce, Bureau of the Census Value Put In Place (Value In Place) data, the total value of all U.S. construction in 2011 was about $778 billion (USDC 2013). Residential construction represented about $246 billion; non-building construction about $244 billion, and nonresidential building construction about $289 billion. Of that $289 billion, about $208 billion was for low-rise nonresidential building construction and of that, $113 billion was for new low-rise non-residential buildings and additions (six or fewer stories) with the remaining 95 billion alterations, renovations and remodeling (Table 1).

According to Reed Construction Data[3], there were about 1.2 billion square feet of new low-rise (6 stories and under) nonresidential building added in the United States in 2003 (Figure 1). In 2007, towards the end of the peak economic expansion period, the amount of low-rise nonresidential building added increased to 1.3 billion square feet. By 2011, the effects of the 2008 – 2009 recessions had rippled through the construction industry, and the total area of new low-rise nonresidential building space had fallen to 733 million square feet. This decline had a larger effect on new space added than on remodeling and renovation expenditures. Overall in 2011, about 61 percent of all building construction value was for new space added while the remaining 39 percent was for alterations and renovations. In 2003, 76 percent of value was for new space added while 24 percent was for remodeling and renovations.

**Figure 1. New Nonresidential Building Space Added in the U.S. (Millions of Square Feet)**




**Source: Reed Construction Data**

[3] http://www.reedconstructiondata.com *(Accessed April 16, 2013)*

Considering only buildings of six stories and less, the square feet of floor, wall and roof area added in 2011 was 733 million, 239 million, and 566 million square feet, respectively. Below is a summary of area added by Census Division and building type.

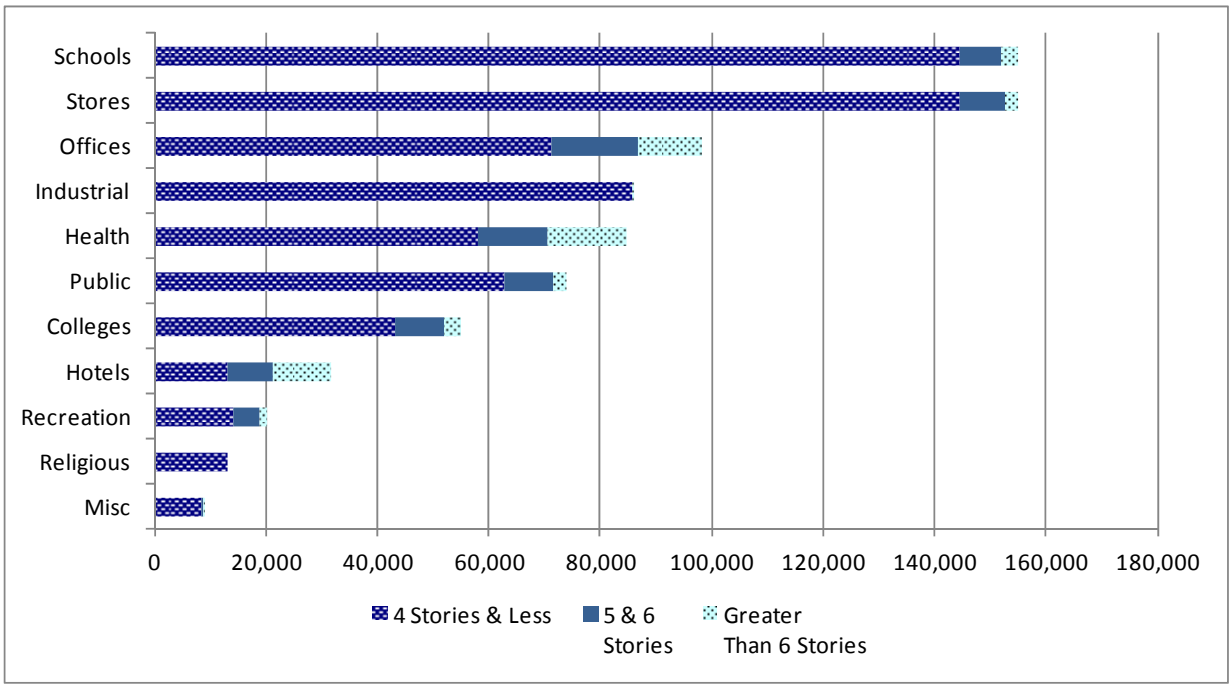
| | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | US TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| FLOOR AREA | *Thousands of Square Feet* | | | | | | | | | |
| Stores | 15,786 | 10,715 | 23,011 | 16,280 | 39,299 | 4,907 | 15,033 | 8,559 | 18,864 | 152,454 |
| Industrial | 3,551 | 4,424 | 12,529 | 9,144 | 27,628 | 7,030 | 7,054 | 2,993 | 11,480 | 85,833 |
| Offices | 3,615 | 23,497 | 10,783 | 2,079 | 20,115 | 7,804 | 6,061 | 4,313 | 8,346 | 86,613 |
| Hotels | 242 | 1,780 | 1,452 | 2,626 | 5,202 | 1,467 | 3,122 | 2,803 | 2,474 | 21,167 |
| Schools | 7,623 | 7,546 | 22,154 | 9,700 | 33,683 | 10,543 | 31,261 | 9,883 | 19,652 | 152,045 |
| Colleges | 2,788 | 5,332 | 5,189 | 2,784 | 12,195 | 3,176 | 7,523 | 2,503 | 10,569 | 52,060 |
| Religious | 68 | 695 | 751 | 1,168 | 2,935 | 1,035 | 4,097 | 1,120 | 1,292 | 13,162 |
| Health | 4,091 | 7,740 | 9,285 | 6,562 | 12,332 | 3,266 | 12,229 | 4,177 | 10,763 | 70,446 |
| Public | 1,864 | 3,847 | 5,580 | 5,384 | 28,135 | 3,259 | 9,900 | 6,037 | 7,699 | 71,705 |
| Recreation | 1,278 | 2,696 | 2,023 | 3,146 | 2,943 | 1,425 | 2,780 | 1,388 | 1,114 | 18,793 |
| Misc | 427 | 977 | 744 | 543 | 1,175 | 133 | 748 | 203 | 3,882 | 8,832 |
| All Buildings | 41,335 | 69,250 | 93,501 | 59,416 | 185,642 | 44,046 | 99,808 | 43,978 | 96,135 | 733,110 |
| WALL AREA | *Thousands of Square Feet* | | | | | | | | | |
| Stores | 2,653 | 3,152 | 8,630 | 5,818 | 12,273 | 2,187 | 5,304 | 2,649 | 5,255 | 47,920 |
| Industrial | 1,062 | 1,850 | 2,969 | 1,404 | 3,935 | 1,623 | 2,060 | 1,253 | 2,391 | 18,547 |
| Offices | 1,115 | 3,369 | 2,451 | 748 | 3,688 | 1,108 | 1,769 | 1,014 | 1,170 | 16,433 |
| Hotels | 90 | 653 | 357 | 863 | 1,818 | 525 | 1,053 | 746 | 769 | 6,874 |
| Schools | 3,000 | 3,487 | 9,482 | 4,934 | 14,351 | 4,619 | 13,962 | 4,301 | 7,916 | 66,054 |
| Colleges | 650 | 1,755 | 1,705 | 1,029 | 3,487 | 1,221 | 2,419 | 1,064 | 3,460 | 16,789 |
| Religious | 55 | 571 | 627 | 754 | 2,390 | 722 | 2,617 | 825 | 1,064 | 9,625 |
| Health | 1,035 | 2,329 | 2,767 | 1,778 | 3,188 | 954 | 2,671 | 1,037 | 2,955 | 18,715 |
| Public | 803 | 1,185 | 1,930 | 1,762 | 5,988 | 1,244 | 2,421 | 1,915 | 2,300 | 19,549 |
| Recreation | 668 | 704 | 1,097 | 1,664 | 1,467 | 1,211 | 1,380 | 470 | 773 | 9,434 |
| Misc | 147 | 167 | 206 | 235 | 461 | 65 | 326 | 86 | 836 | 2,530 |
| All Buildings | 11,279 | 19,222 | 32,221 | 20,989 | 53,048 | 15,479 | 35,983 | 15,359 | 28,890 | 232,469 |
| ROOF AREA | *Thousands of Square Feet* | | | | | | | | | |
| Stores | 10,242 | 9,608 | 22,400 | 15,857 | 31,621 | 4,813 | 14,455 | 8,335 | 17,734 | 135,063 |
| Industrial | 2,193 | 4,273 | 12,097 | 9,144 | 24,847 | 5,603 | 6,510 | 2,810 | 11,417 | 78,894 |
| Offices | 1,864 | 21,113 | 8,744 | 1,265 | 15,220 | 7,465 | 4,803 | 2,550 | 7,369 | 70,393 |
| Hotels | 82 | 417 | 606 | 711 | 1,642 | 309 | 890 | 1,630 | 645 | 6,933 |
| Schools | 3,833 | 4,337 | 13,169 | 7,126 | 23,438 | 7,387 | 24,571 | 8,230 | 13,008 | 105,100 |
| Colleges | 1,340 | 3,652 | 2,098 | 2,119 | 5,624 | 1,734 | 4,424 | 1,822 | 7,278 | 30,091 |
| Religious | 60 | 435 | 595 | 958 | 2,275 | 845 | 3,587 | 1,073 | 1,049 | 10,877 |
| Health | 1,537 | 4,809 | 7,268 | 4,878 | 7,641 | 2,121 | 6,970 | 2,982 | 5,269 | 43,476 |
| Public | 1,379 | 3,373 | 4,197 | 4,816 | 17,986 | 2,981 | 8,519 | 5,568 | 6,534 | 55,353 |
| Recreation | 1,121 | 1,532 | 1,845 | 2,033 | 1,916 | 1,273 | 2,526 | 1,205 | 1,112 | 14,563 |
| Misc | 328 | 530 | 734 | 457 | 982 | 133 | 662 | 195 | 2,606 | 6,626 |
| All Buildings | 23,977 | 54,080 | 73,755 | 49,364 | 133,192 | 34,662 | 77,916 | 36,399 | 74,022 | 557,369 |

## BUILDING TYPES AND ACTIVITY

Nonresidential buildings are a diverse mixture of structures often categorized by intended use. In this study, the eleven building types reported correspond to those used in the 2003 and 2008 nonresidential wood products studies. These are Stores, Industrial, Offices, Hotels, Schools, Colleges, Religious, Health, Public, Recreation, and Misc. Table 2 summarizes Value in Place and square feet of building constructed, or "added," by building category.

The vast majority of new nonresidential building construction value in 2011 was for low-rise buildings—true for all categories of buildings. Figure 2 summarizes total floor area added for buildings with four or fewer stories, five and six stories, and greater than six stories.

**Figure 2. Nonresidential Floor Area Added by Stories & Building Type in the U.S., 2011 (Thousands of Square Feet)**




**Source: Table 18**

## PRINCIPAL STRUCTURAL MATERIALS TYPES

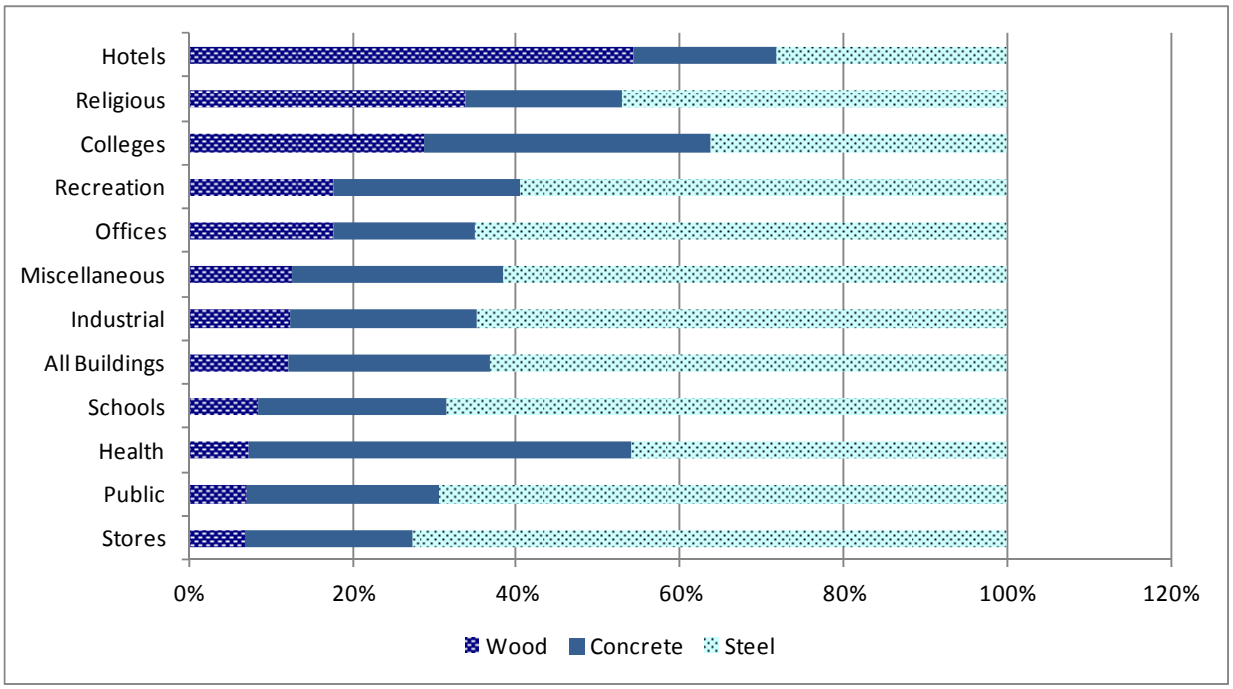
Most building assemblies—floors, walls and roofs—are a composite of multiple materials types in multiple layers. Wood, concrete, steel, plastics, mineral wool, and gypsum are often used in a single assembly. Each material is used to impart a functional characteristic to the assembly such as tensile strength, compressive strength, thermal insulation, moisture resistance, sound resistance, vibration damping, and durability when exposed to the elements. The choice of materials and construction methods in a new nonresidential building is typically influenced by architect, building owner, and general building contractor who evaluate alternatives in light of architectural design, intended use, building site conditions and political jurisdiction, and many others. Factors in the decision may include local acceptance of materials, treatment by building codes, perceived performance and durability, cost, and ease at adapting the material into the architectural design.

To simplify categorizing buildings by materials types, this study identifies the principal structural material as the main type that supports the building loads or is the support for attaching finish materials. Three distinct materials categories—wood, concrete and steel (excludes steel reinforcing rod in concrete)—account for virtually all nonresidential load-supporting construction.

Common types of wood structural materials are light frame studs, joists and rafters (2x materials); heavy timber or beams; and wood panels. Concrete is commonly used as poured in place, site-built masonry units (includes stone and brick), factory precast panels and beams, or site-cast tilt-up. Steel can be galvanized light-gauge or “cold-rolled” for load-bearing or curtain wall applications; and heavy gauge or “hot-rolled” steel for load-bearing columns and beams.

Each of the three materials can be used as the primary structural material in floors, walls, and roof structures. For this study, as in past studies, the “building exterior wall primary structure material” defines the primary framing type. Figure 3 summarizes primary framing types in 2011 by building category.

**Figure 3. Percentage of Primary Building Structure Material for Low-Rise Nonresidential Buildings in the U.S., 2011**




**Source: Table 2**

Overall, steel was found to be the most common exterior wall material type with about 63 percent. Concrete was second most popular with 25 percent, while wood was about 12 percent of new building space added in 2011. Primary wall material seems to be highly influenced by building type. Wood is the most popular primary wall material for Hotels. Steel is the most common type for Stores, Public, Schools, Health, Recreation, Offices, Colleges, and Religious buildings. Concrete is most popular the Industrial buildings (Table 2).

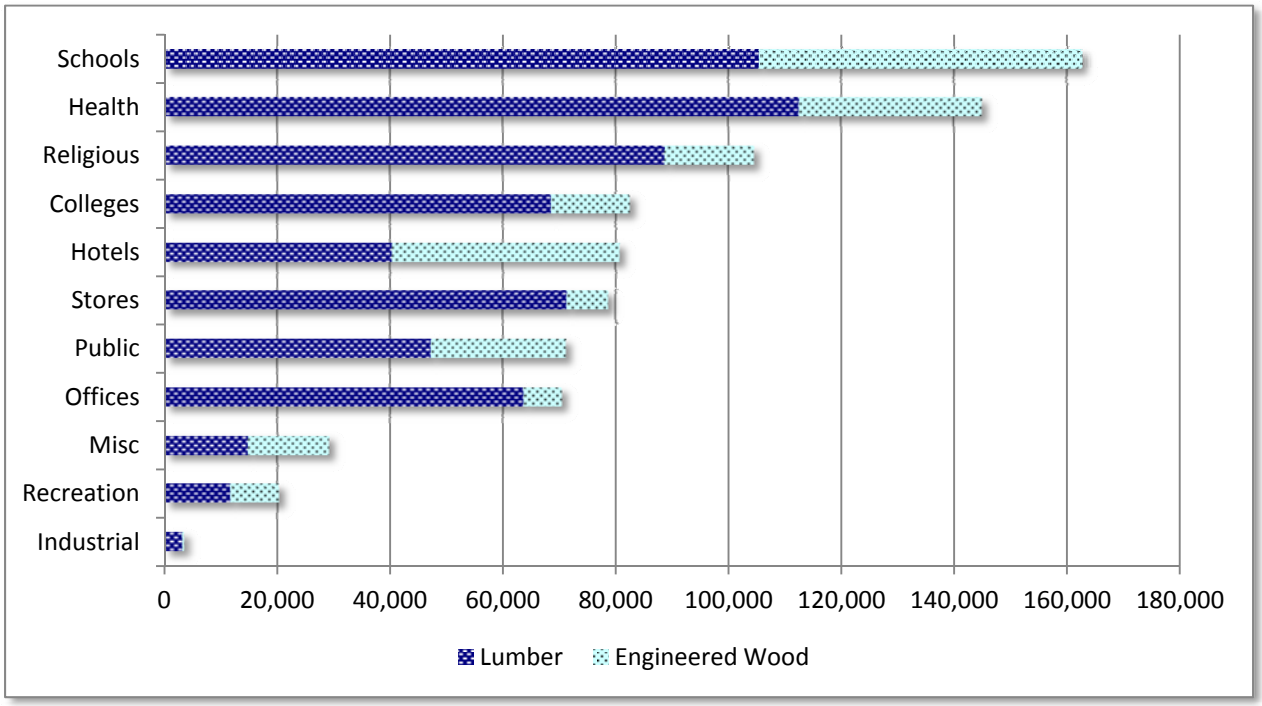
While wood may not be a primary structural material in the majority of nonresidential buildings, it may nonetheless be used throughout the construction project in secondary roles: facilitating uses (scaffolding, concrete formwork, etc.), minor structural elements (blocking), or finished molding and millwork.

## SUMMARY OF WOOD PRODUCTS USED

In 2011 1,214 million board feet equivalent[4] (bfe) of wood products were used for the construction of low-rise nonresidential buildings (Table 4). The definition of board feet equivalent is provided in Table 21 in the Appendix. Included are wood products used for framing, columns, stairs, siding, soffit, fascia, and exterior trim. Of the 848 million bfe of non-panel wood products used, lumber represented about three-quarters and engineered wood the remaining one-quarter. Of all panel products, structural panels represented the vast majority with only small amounts of nonstructural panels being used.

Total lumber and engineered wood usage varies substantially by building type in 2011 (Table 4, Figure 4). Schools used the highest volume, about 163 million bfe in 2011, followed by Health at 145 million bfe and Religious buildings at 105 million bfe. Engineered wood has substantially higher acceptance in the Hotels and Misc. building categories with about 50 percent of total lumber and engineered wood usage. In Industrial buildings and Stores, engineered wood was only about 10 percent.

**Figure 4. Total Lumber & Engineered Wood Used in Low-Rise Nonresidential Buildings in the U.S. by Building Type (Thousands of bfe)**




**Source: Table 4**

[4] Board foot equivalents (bfe) are the amounts of non-lumber wood products converted to equivalent board foot volume based on the following conversions: 1 lf (I-joist) = 2 bfe; 1 $ft^3$ = 16 bfe, and, 1 $ft^2$, 3/8" basis = 0.5 bfe.

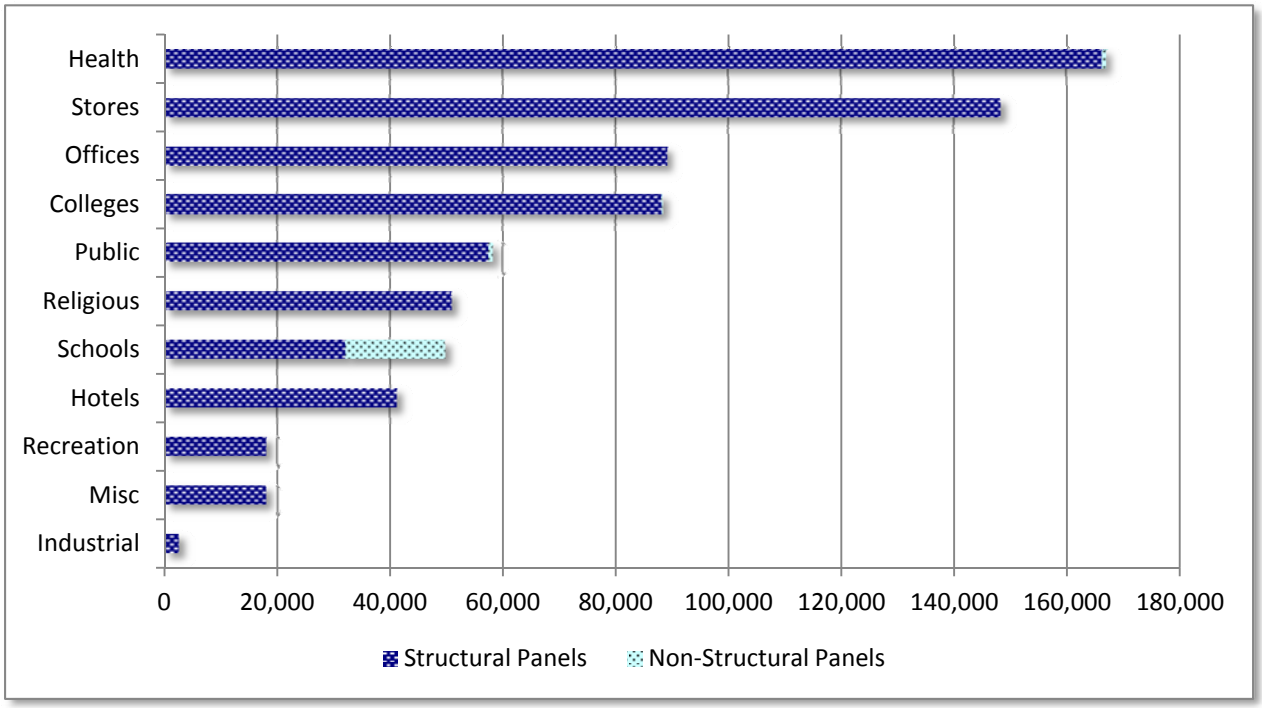
Lumber and engineered wood usage volume varied greatly by Census division—the South Atlantic had nearly 200 million bfe in low-rise nonresidential buildings, while the Mountain division had less than 50 million. Shares of lumber and engineered wood varied much less—the highest usage rate of engineered wood was 33 percent in the East North Central while the West South Central was lowest at 22 percent.

**Figure 5. Total Lumber & Engineered Wood Used in Low-Rise Nonresidential Buildings in the U.S. by Census Division (Thousands of bfe)**

**Source: Table 4**

Panel usage in this study is reported as structural and non-structural products in industry standard square feet on a 3/8-inch basis ($ft^2$). In total, 731 million $ft^2$ of panel products were used in floors, walls, and roofs. Of this, approximately 712 million $ft^2$ were structural panels used for sheathing in sheathing, underlayment, columns, stairs, siding, soffit, fascia, and exterior trim (Table 4). A large share of the non-structural panel products were used in finished flooring and built-in shelving applications.

**Figure 6. Total Panels Used in Low-Rise Nonresidential Buildings in the U.S. by Building Type, 2011 (Thousands of $ft^2$)**

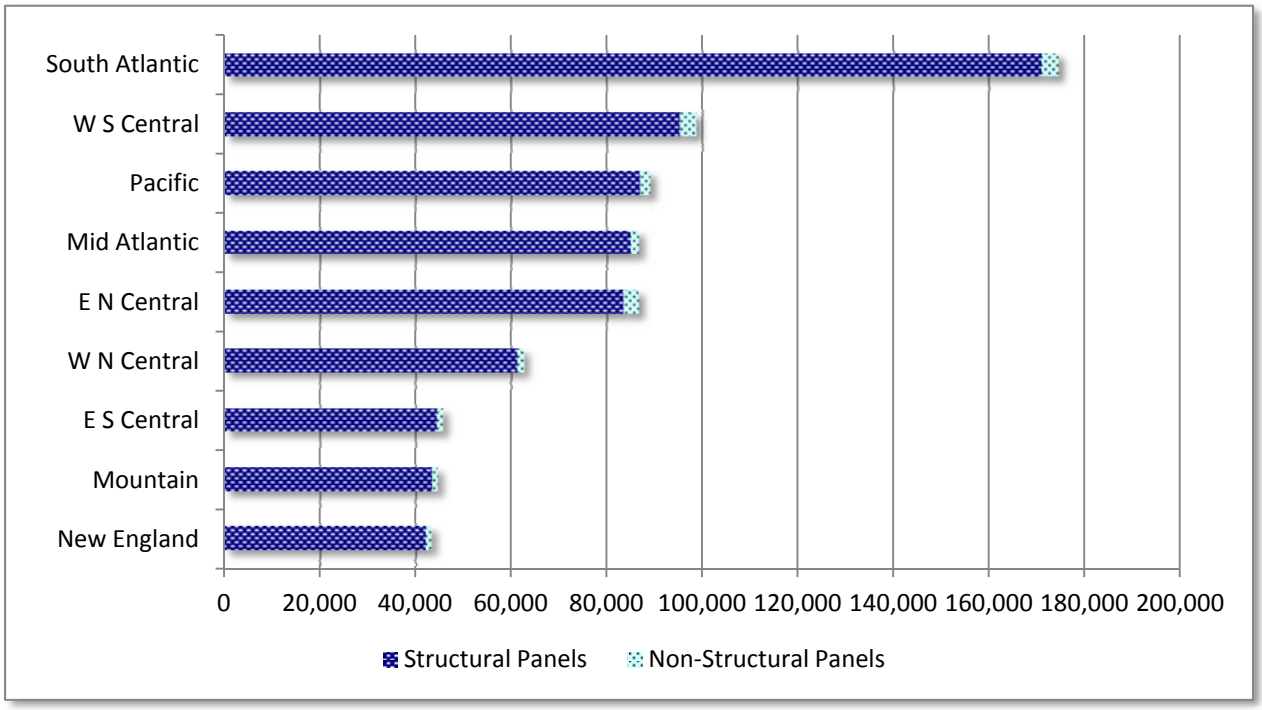



**Source: Table 4**

Health buildings and Stores had the highest total usage of panel products in 2011. OSB was only represented in substantial amounts in the Health and Offices building categories. Non-structural panels were only used in substantial amounts in Schools in 2011.

The South Atlantic Census Division led in wood panel usage in low-rise nonresidential buildings with about 175 million square feet in 2011. Following were the West South Central, Pacific, Mid Atlantic, and East North Central Divisions, all with 2011 usage volumes between 87 and 99 million square feet.

**Figure 7. Total Panels Used in Low-Rise Nonresidential Buildings in the U.S. by Census Division, 2011 (Thousands of ft$^2$)**



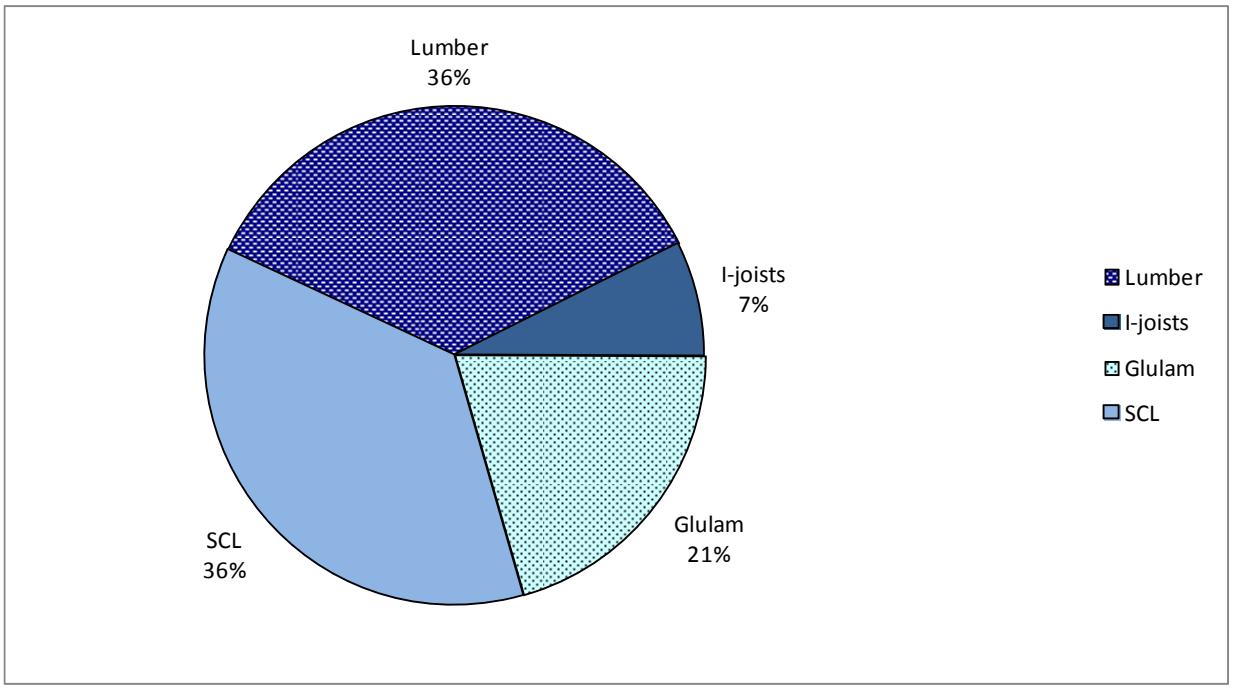

**Source: Table 4**

## LUMBER & ENGINEERED WOOD USED IN FLOORS, WALLS & ROOFS

Floors, walls and roofs in low-rise nonresidential buildings used a total of 823 million bfe of lumber and engineered wood, or about 97 percent total use (Tables 5, 6 and 7). Overall, walls and roofs used considerably more wood framing material than floors—nearly 80 percent combined—due largely to the popularity of concrete slab-on-ground floors in nonresidential buildings. Lumber is by far the most popular choice of wood material for walls and roofs. In floors, engineered wood is substantially more popular than lumber. These wood usage patterns are similar to those seen in new single-family residential construction.

**FLOORS:** Of the 185 million bfe of lumber and engineered wood used in floors, lumber comprised about 39 percent while engineered wood comprised the remainder (Figure 8). The largest engineered wood category is structural composite lumber (SCL) at about 30 percent, which primarily consists of laminated veneer lumber (LVL), parallel strand lumber (PSL), and laminated strand lumber (LSL). Following SCL is glulam beams with about 23 percent of the share in floors. SCL and glulam beams are typically used for mid-span floor joist support for lumber and wood I-joist floors. They are also used as the primary load-bearing member when joist or beam spacing exceeds 32 inches. I-joists were only about 8 percent of engineered wood used in floors. This contrasts with residential floor construction where I-Joists now have the dominant share. OSB rim board comprises only about 2/10$^{th}$ percent of materials used in floors and is therefore omitted from Figure 8.

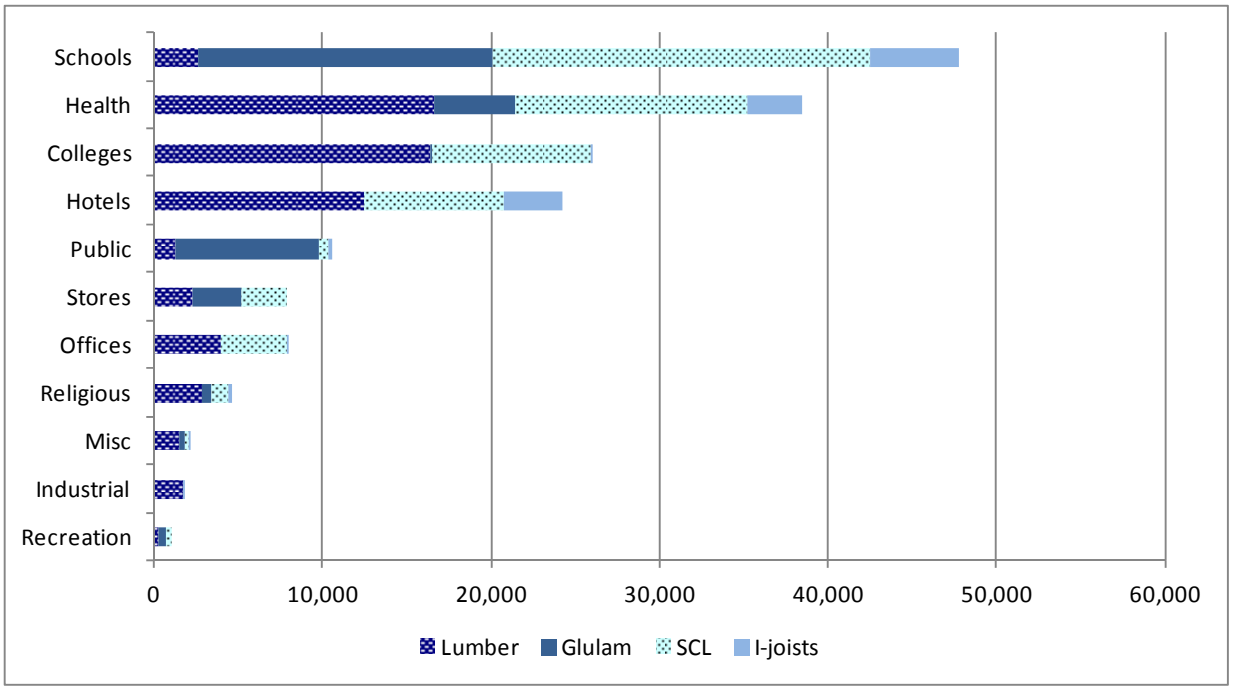
**Figure 8. Shares of Lumber & Engineered Wood Materials Used in Low-Rise Nonresidential Floors in the U.S., 2011**




**Source: Table 5**

Figure 9 shows lumber and engineered wood used in floors by material category and building type. Schools and Health used more lumber and engineered wood in floors than all other building types combined (Table 5). Engineered wood represented more than half of all lumber and engineered wood used in Schools, Public, and Recreational buildings, while lumber represented the majority in Health, Hotels, Colleges, Offices, Misc. and Religious buildings.

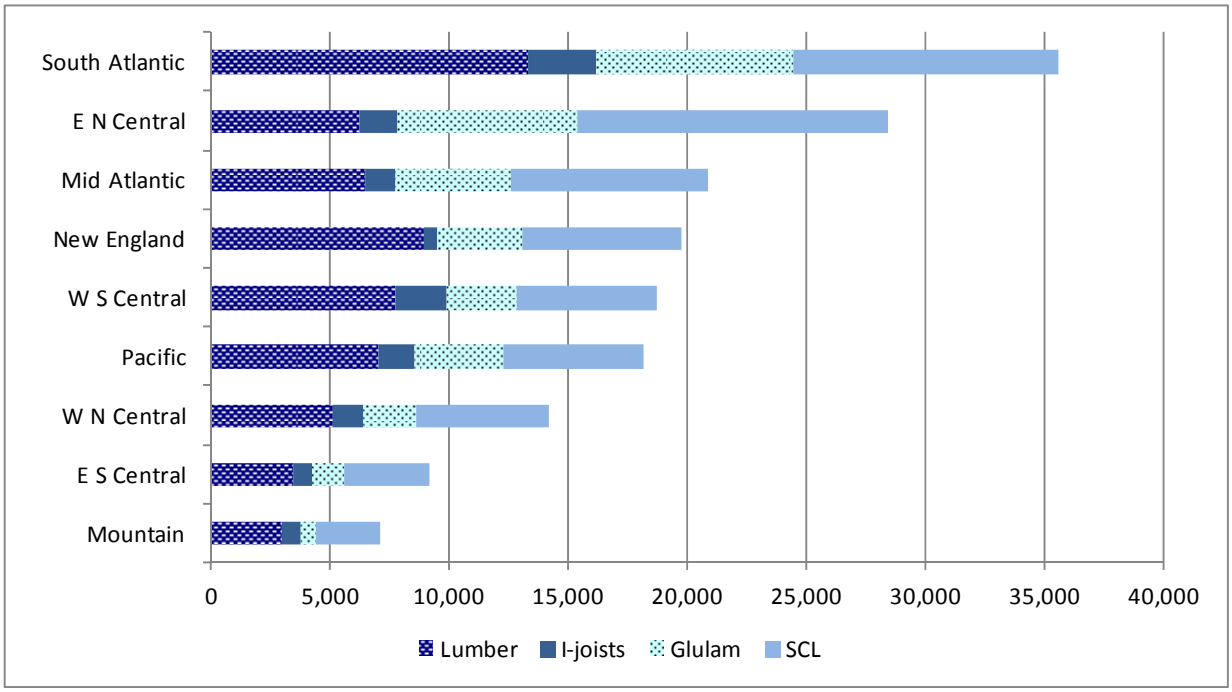
**Figure 9. Lumber & Engineered Wood Used in Low-Rise Nonresidential Floors in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source: Table 5**

Figure 10 is a summary of lumber and engineered wood usage for floors by Census division. The highest volume was in the South Atlantic region. SCL usage rate (46%) was greatest in the East North Central division (Table 5).

**Figure 10. Lumber & Engineered Wood Used in Low-Rise Nonresidential Floors in the U.S. by Census Division, 2011 (Thousands of bfe)**

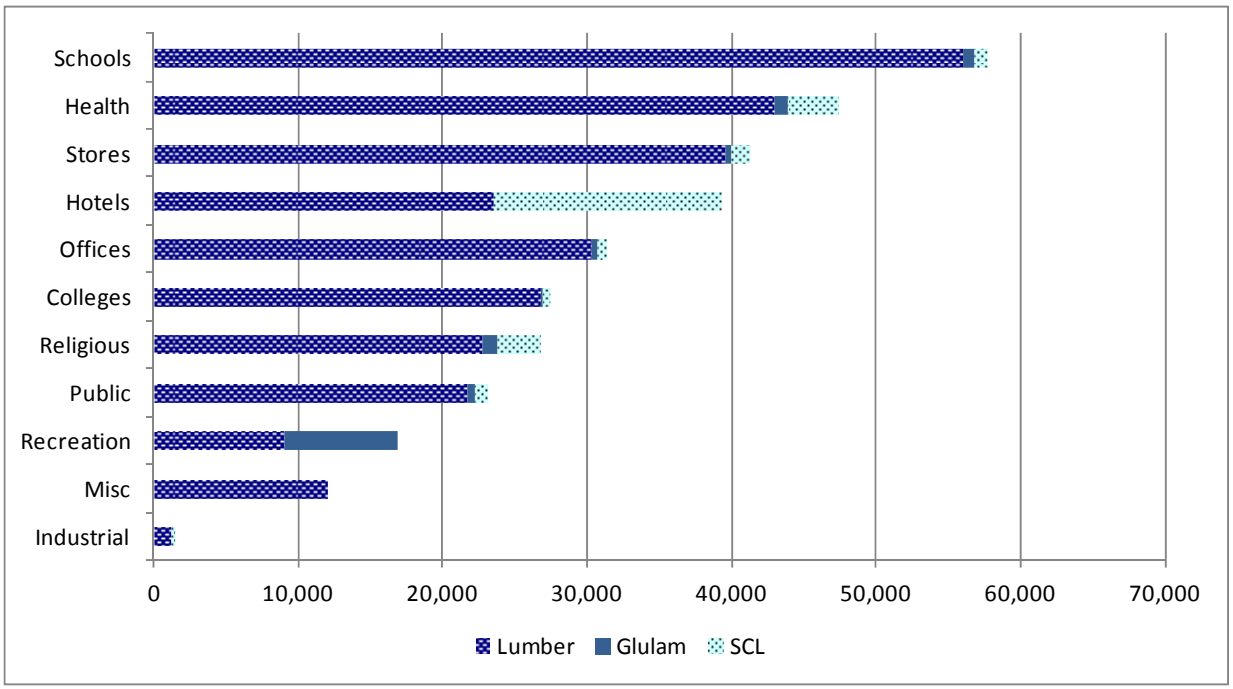



**Source: Table 5**

**WALLS:** In 2011, an estimated 324 million bfe of lumber and engineered wood were used for exterior walls in low-rise nonresidential buildings (Table 6). Lumber was the dominant material, representing 88 percent of the total. The primary lumber products used were 2 x 4, 2 x 6, and 2 x 8 dimension lumber for studs and dimension lumber headers. The remaining 12 percent lumber and engineered wood used in walls was glulam and SCL, used primarily for load-bearing header materials that span wall openings.

The highest volume of lumber and engineered wood in walls was in Schools, followed by Health, Stores and Hotels. In all categories of building, lumber was the most popular material type. SCL was most popular in Hotels and glulam in Recreation buildings.

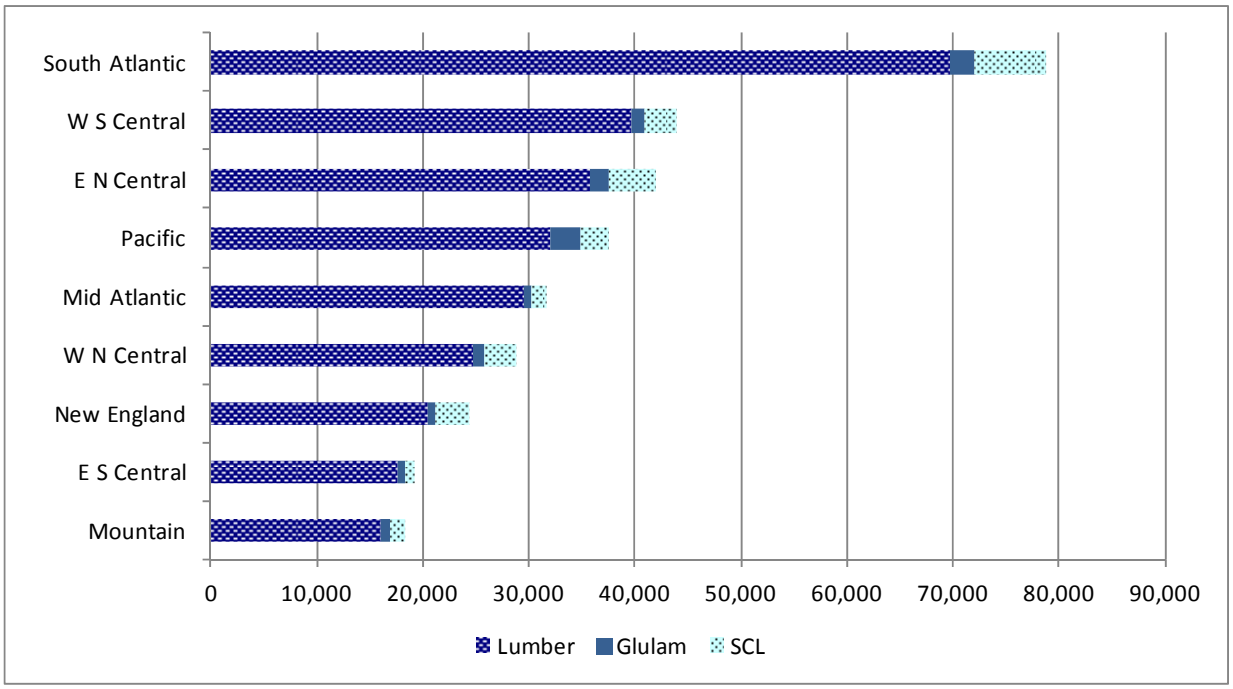
**Figure 11. Lumber & Engineered Wood Used in Low-Rise Nonresidential Walls in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source: Table 6**

Geographically, total volume of lumber and engineered wood used in walls was greatest in the South Atlantic—nearly 80 million bfe, which was nearly twice that of the W.S. Central, the second largest Census division (Table 6, Figure 12). Lumber was by far the most common type of wall material in each division. The Pacific division had the greatest share of glulam (8%) and New England had the greatest share of SCL (13%).

**Figure 12. Lumber & Engineered Wood Used in Low-Rise Nonresidential Walls in the U.S. by Census Division, 2011 (Thousands of bfe)**

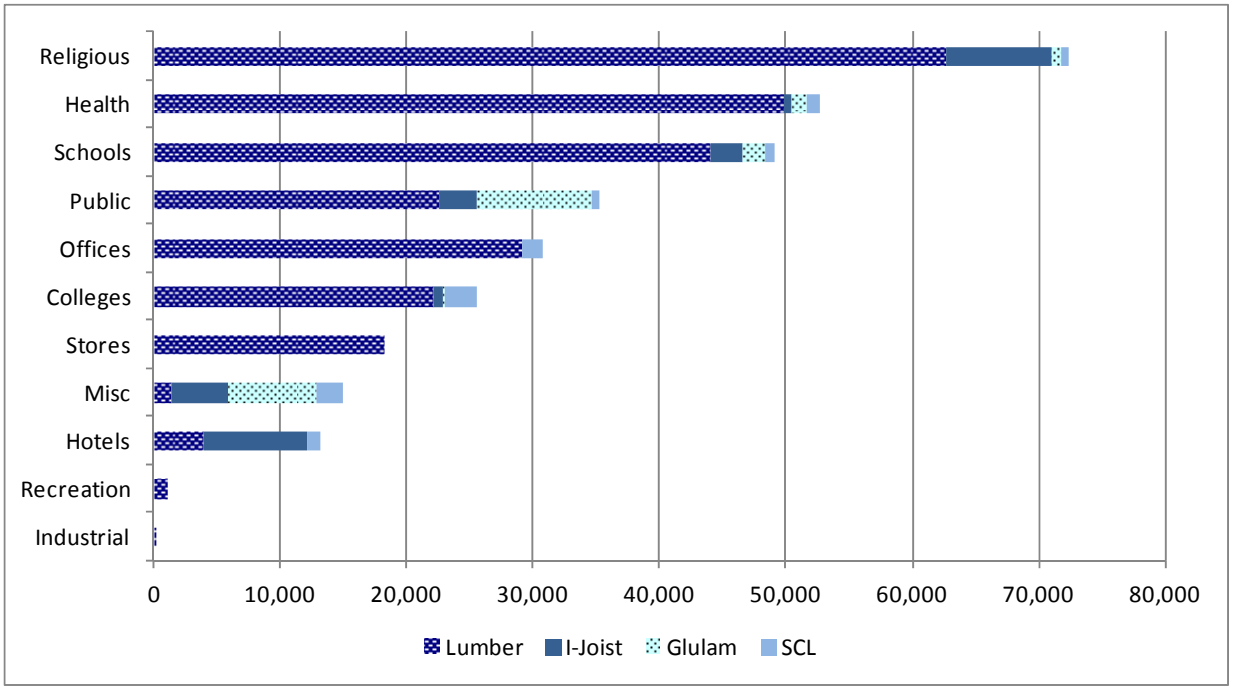



**Source: Table 6**

**ROOFS:** In 2011, there was approximately 313 million bfe of lumber and engineered wood used in roofs in low-rise nonresidential buildings (Table 7). Like walls, the primary material type was lumber with about 254 million bf. Lumber in nonresidential roofs is used as conventional rafters, plated trusses (pitched or parallel chord), and in beam and purlin configurations. Second was I-joists with 28 million bfe. I-joists are typically used as roof rafters in horizontal applications and less commonly in pitched roofs or as members in an engineered truss system. Third and fourth were SCL with 20 million bfe and glulam with about 10 million bf. Both SCL and glulam are frequently used as mid-span support beams for roof joists or in a beam and purlin configuration.

Religious buildings were the largest users of wood in roofs, followed by Health and School buildings (Figure 13).

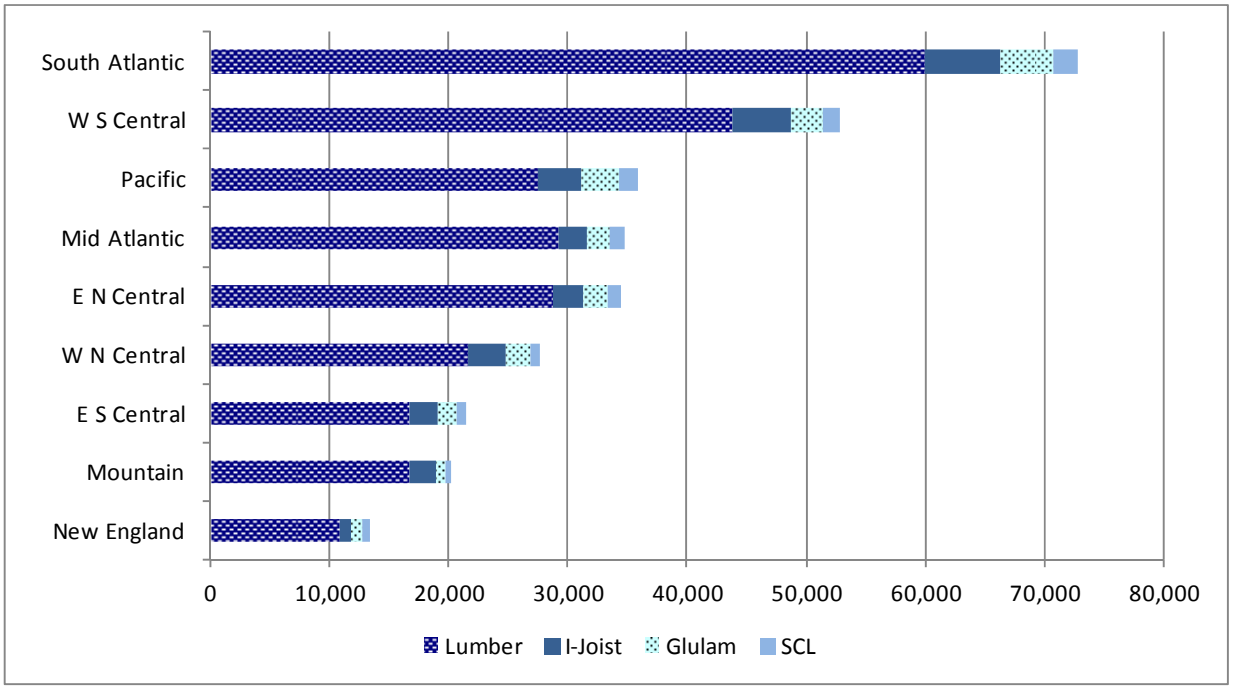
**Figure 13. Lumber & Engineered Wood Used in Low-Rise Nonresidential Roofs in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source: Table 7**

Geographically, roofs in the South Atlantic had the greatest volume of lumber and engineered wood products in low-rise nonresidential buildings with about 73 million bfe in 2011, followed by the West South Central division with 53 million bf. As in floor usage, glulam was most popular in the Pacific Division with about 9 percent of its total wood usage in roofs.

**Figure 14. Lumber & Engineered Wood Used in Low-Rise Nonresidential Roofs in the U.S. by Census Division, 2011 (Thousands of bfe)**




**Source: Table 7**

## WOOD PANELS USED IN FLOORS, WALLS & ROOFS

Structural and non-structural wood panels are commonly used in low-rise nonresidential buildings as exterior wall sheathing, roof sheathing, structural subflooring, and flooring underlayment. Usage is very dependent on building space added. In 2011, 710 million $ft^2$ of structural panels were used for floors, walls and roofs (Tables 5, 6 and 7).

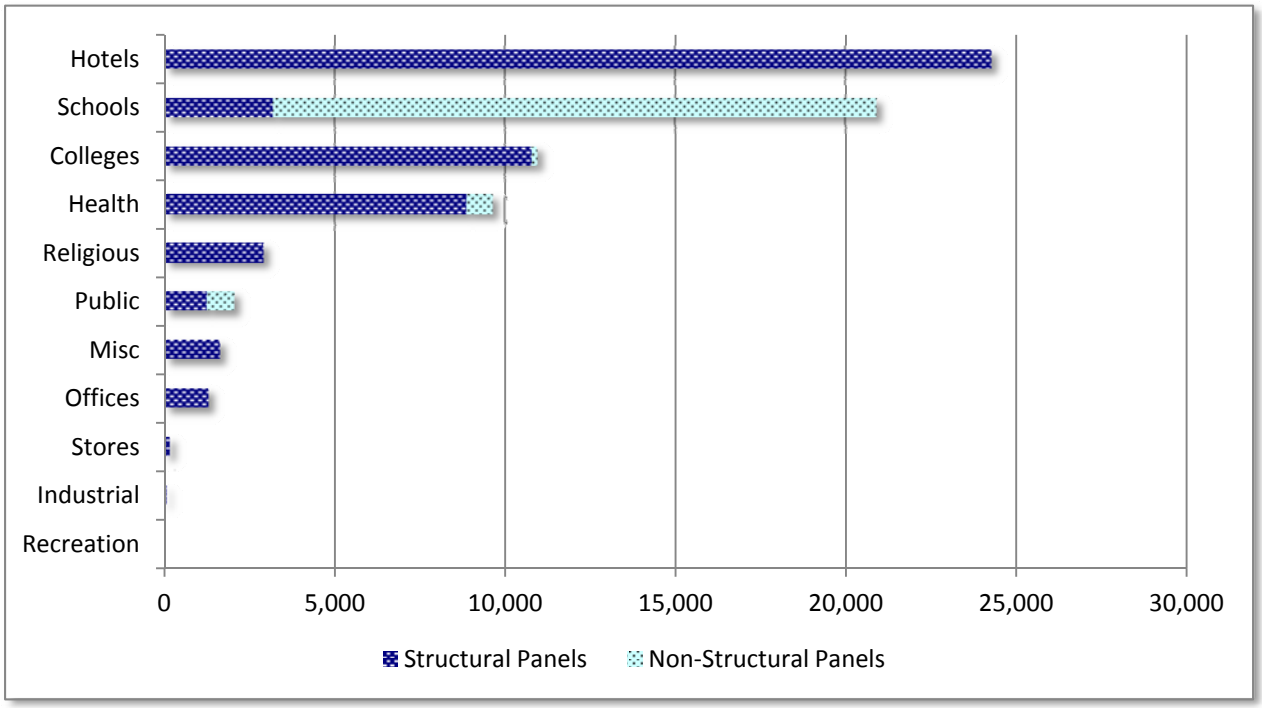
In 2011, plywood was by far the most commonly specified structural wood panel for wall, floor and roof sheathing. About 91% of all structural panels found were plywood with the remainder being OSB. Based on field observations, the actual rate of OSB usage may be higher than the 2011 study indicates since substitution of OSB for plywood often occurs during construction—after building plans have been submitted to local planning offices and are approved. However, the substitution rate of OSB for plywood is unknown. Nonstructural panels (particleboard, MDF, and hardwood plywood) are sometimes used as a flooring underlayment material.

The majority of structural panels used were in the roof structure—59 percent of total use (Tables 5, 6 and 7). Wood structural panels are popular as a sheathing material on both wood and steel roof framing due to its strength and ease of use. Usage in floors is low due to the popularity of concrete slab-on-ground floors and concrete's sound deadening performance on elevated floors.

**FLOORS:** About 74 million $ft^2$ of wood panels were used in floor assemblies, of which about 54 million were structural panels and 19 million were non-structural panels (Table 5).

Like structural framing members, usage of wood panels varies widely by building type. Figure 15 summarizes these differences. Hotels used the largest volume of wood panels in floors, about 24 million $ft^2$, the majority being softwood plywood. Schools were second with approximately 21 million $ft^2$. A high volume of non-structural wood panels were found in Schools. Stores, Industrial, Recreational buildings used virtually no wood panels in floor assemblies.

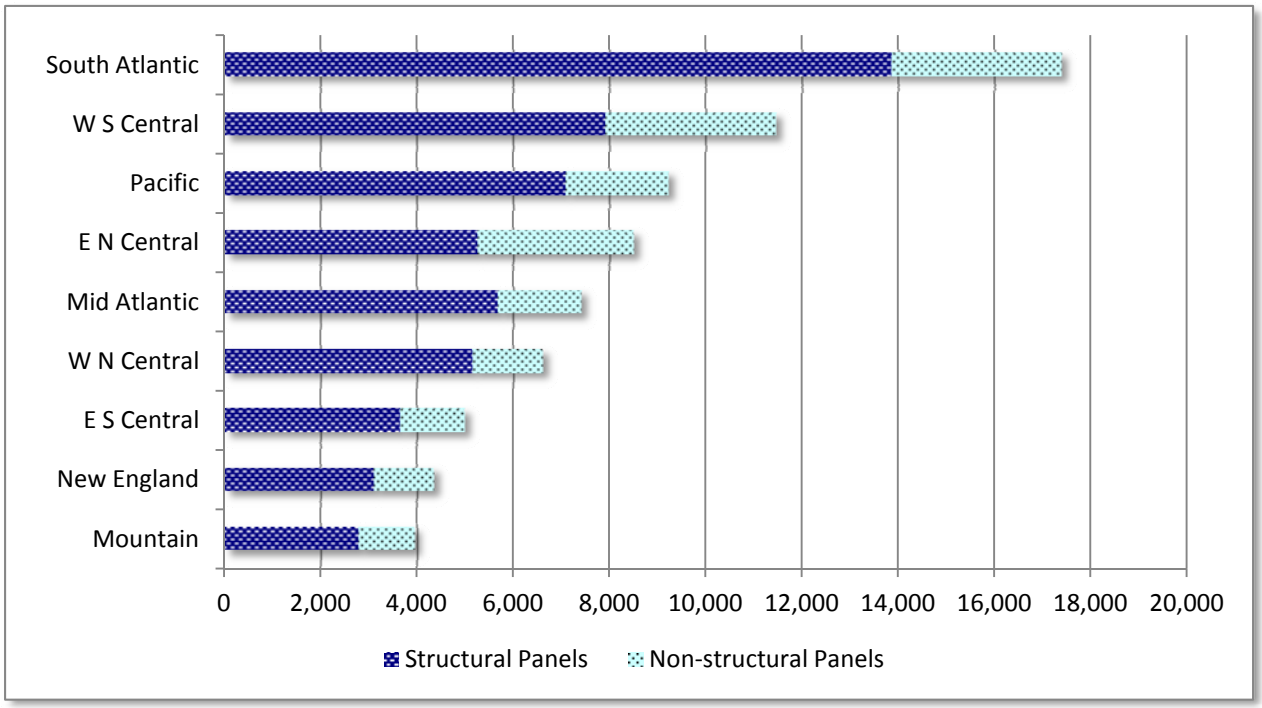
**Figure 15. Structural & Non-Structural Panels Used in Low-Rise Nonresidential Floors in the U.S. by Building Type, 2011 (Thousands of $ft^2$)**




**Source: Table 5**

Geographically, the largest low-rise consumers of wood panels in floors were the South Atlantic and West South Central with 17 million $ft^2$ and 11 million $ft^2$ respectively.

**Figure 16. Structural & Non-Structural Panels Used in Low-Rise Nonresidential Floors in the U.S. by Census Division, 2011 (Thousands of $ft^2$)**

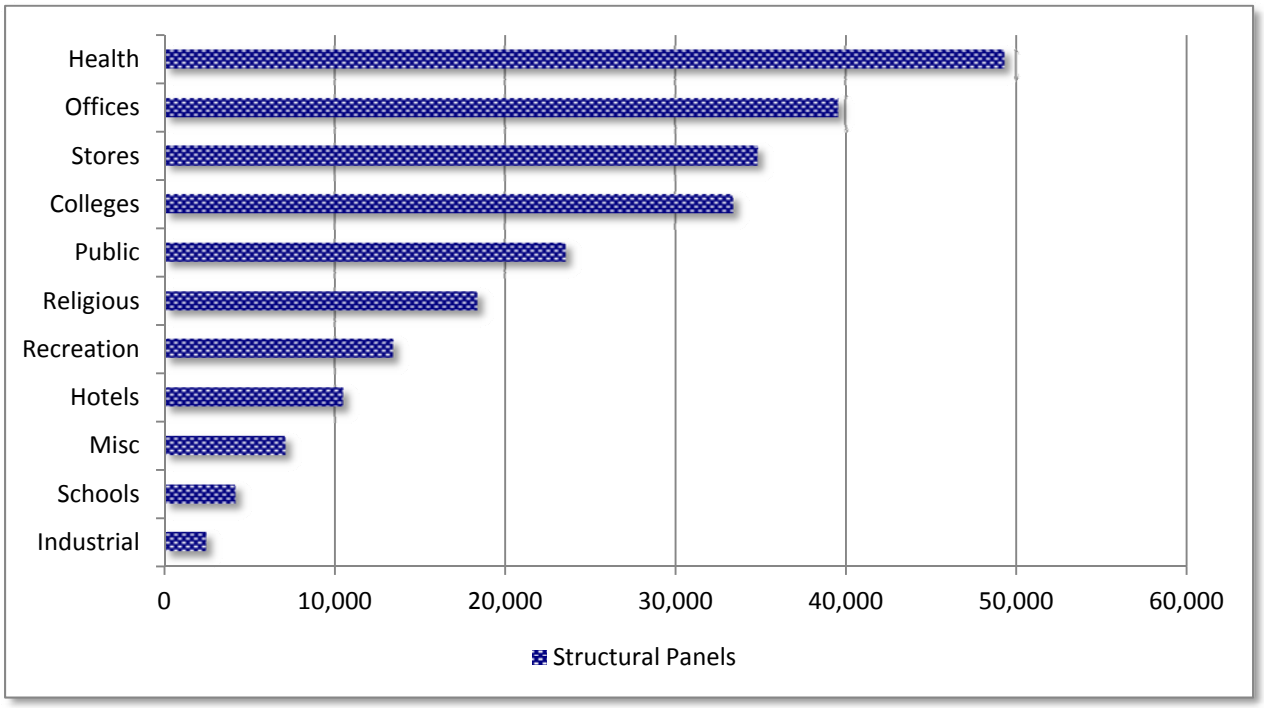



**Source: Table 5**

**WALLS:** Wood sheathing panels for exterior walls (plywood panel finish materials are included in the exterior cladding section) are typically softwood plywood or OSB. In 2011, about 237 million $ft^2$ of structural panels were used for low-rise nonresidential buildings (Table 6).

Figure 17 below summarizes wood panel usage in low-rise building walls. The building category with the highest number of wood panels used in walls was Health with 49 million $ft^2$, followed by Offices with about 40 million $ft^2$. Very little wood panel sheathing was used in Industrial and School categories.

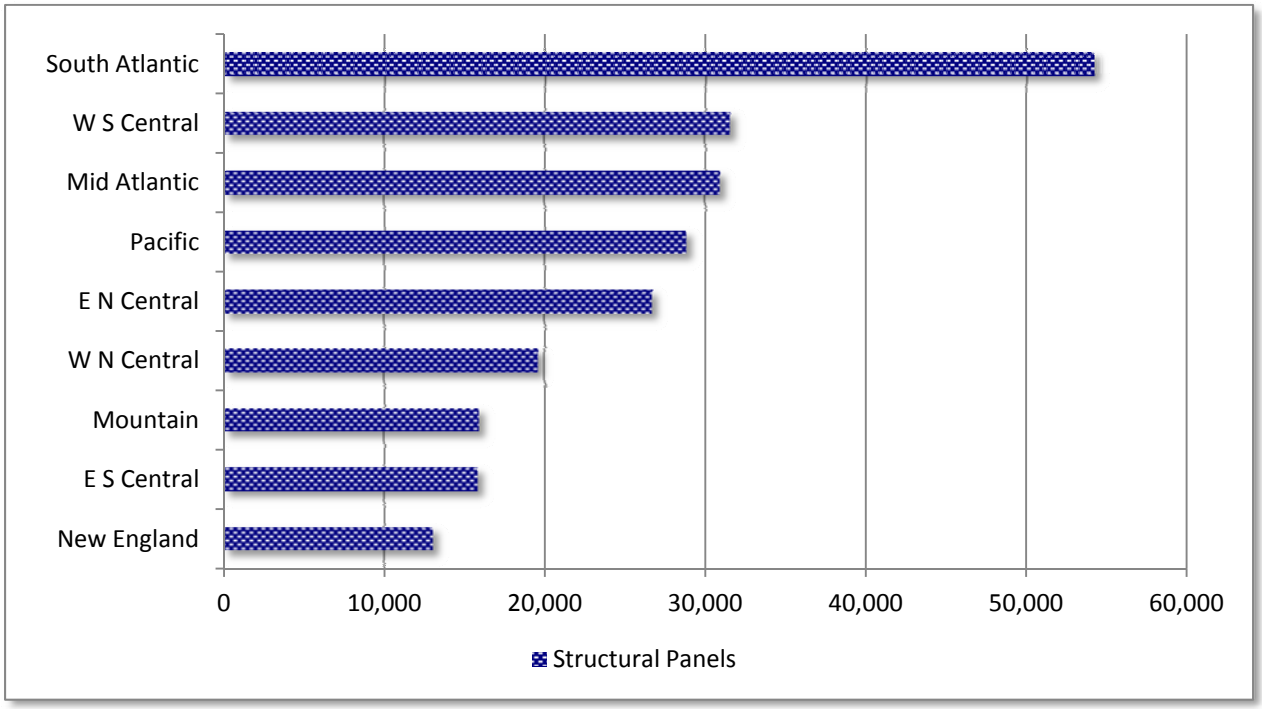
**Figure 17. Structural Panels Used in Low-Rise Nonresidential Walls in the U.S. by Building Type, 2011 (Thousands of $ft^2$)**




**Source: Table 6**

Total usage of structural panels varies by geographic area. (Figure 18). South Atlantic leads with 54 million $ft^2$, with West South Central, Mid Atlantic, and Pacific following with 32, 31, and 29 million $ft^2$, respectively.

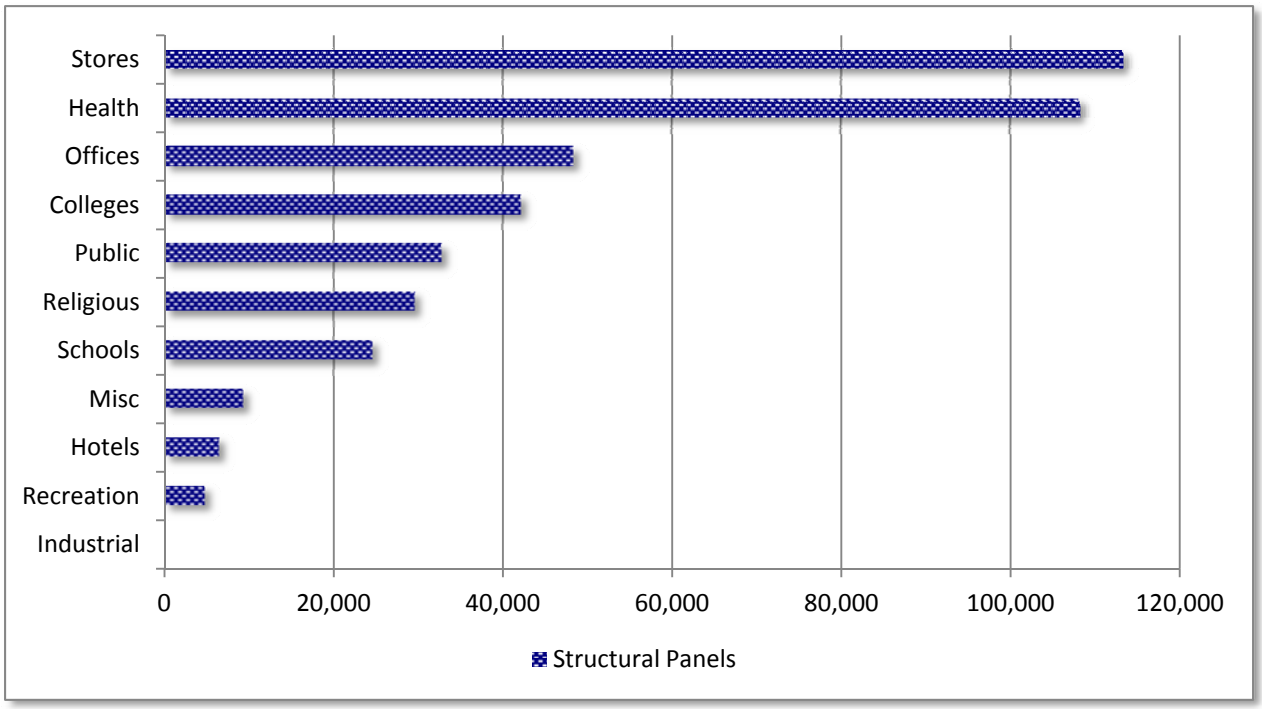
**Figure 18. Structural Panels Used in Low-Rise Nonresidential Walls in the U.S. by Census Division, 2011 (Thousands of $ft^2$)**




**Source: Table 6**

**ROOFS:** In 2011, there were about 419 million $ft^2$ of structural panels used as roof sheathing in low-rise nonresidential buildings (Table 7). Stores and Health buildings combined represent more than one-half of all wood panels used in 2011 in roof systems.

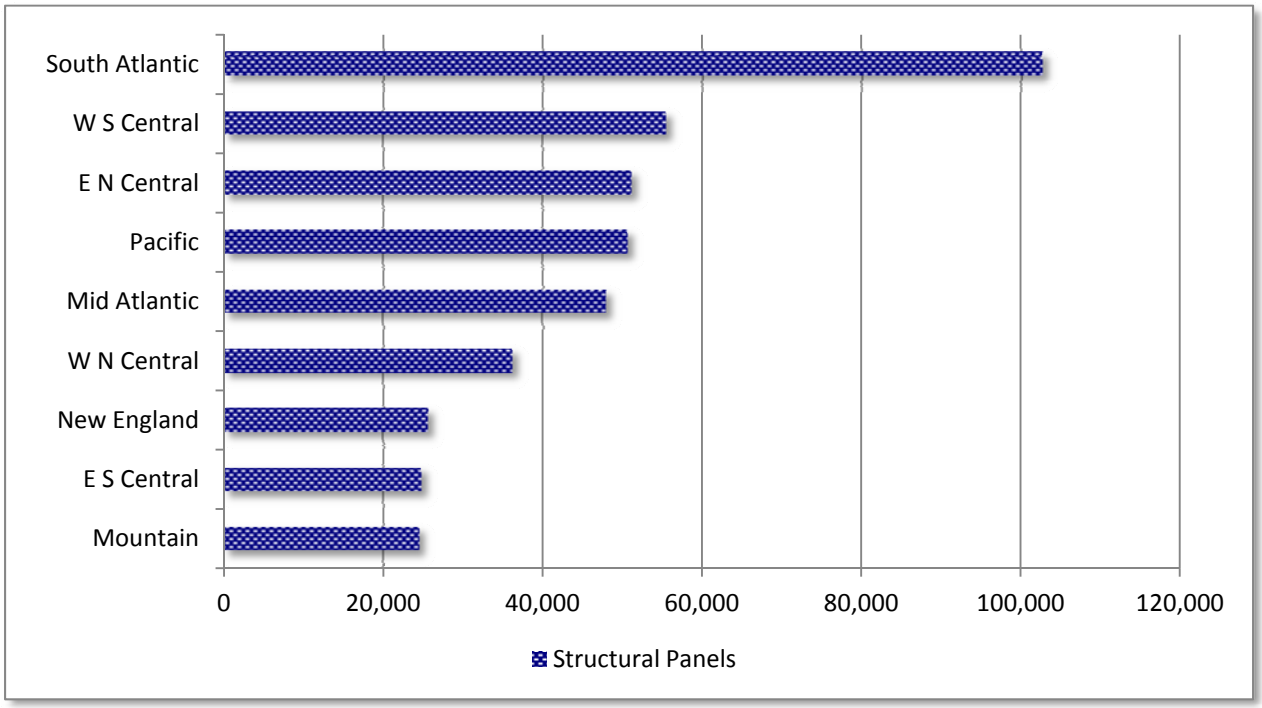
**Figure 19. Structural Panels Used in Low-Rise Nonresidential Roofs in the U.S. by Building Type, 2011 (Thousands of $ft^2$)**




**Source: Table 7**

Geographically, the South Atlantic is by far the leader in wood roof panel volume—likely due to its high volume of low-rise construction compared to other Census divisions.

**Figure 20. Structural Panels Used in Low-Rise Nonresidential Roofs in the U.S. by Census Division, 2011 (Thousands of $ft^2$)**

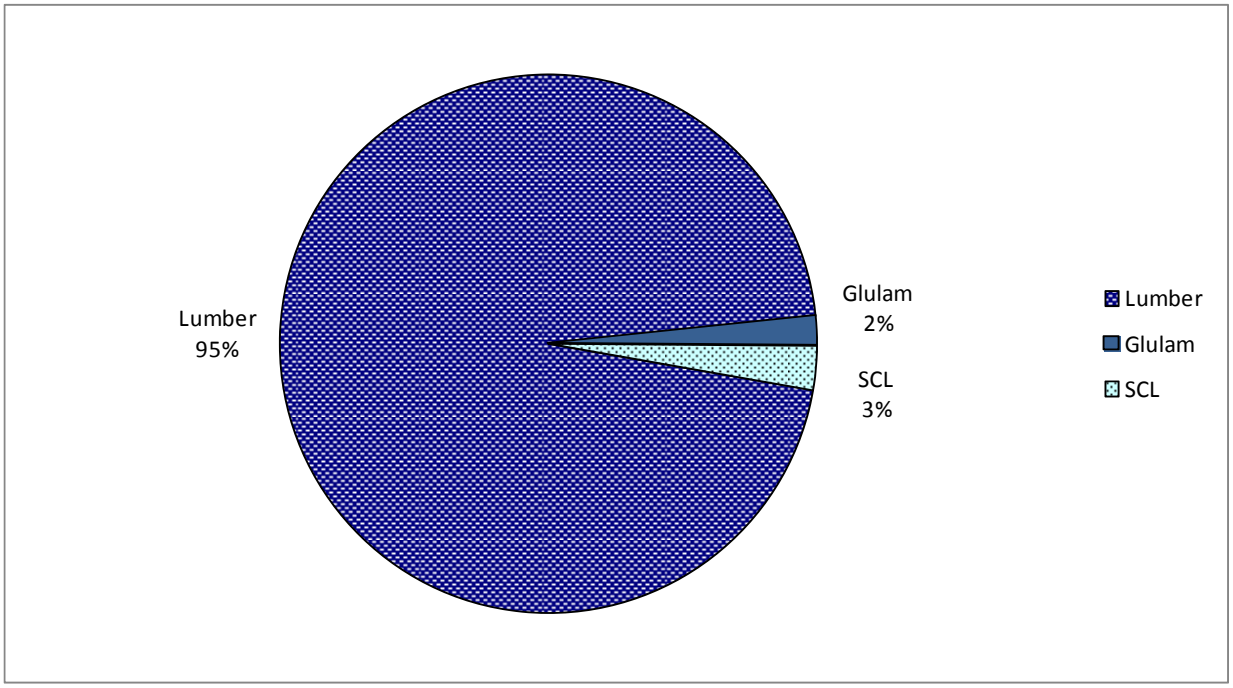



**Source: Table 7**

## WOOD USED IN SUPPORT COLUMNS

Structural wood support columns were reported separately from floor, wall and roof structures in this study. Wood support columns are typically used in conjunction with lumber and engineered wood beam materials, including lumber beams, glulam, and a variety of SCL materials. A total of 4.7 million bfe was used for low-rise buildings in 2011 (Figure 21, Table 8). The vast majority was lumber.

**Figure 21. Shares of Lumber & Engineered Wood Support Column Materials Used in Low-Rise Nonresidential Buildings in the U.S., 2011**

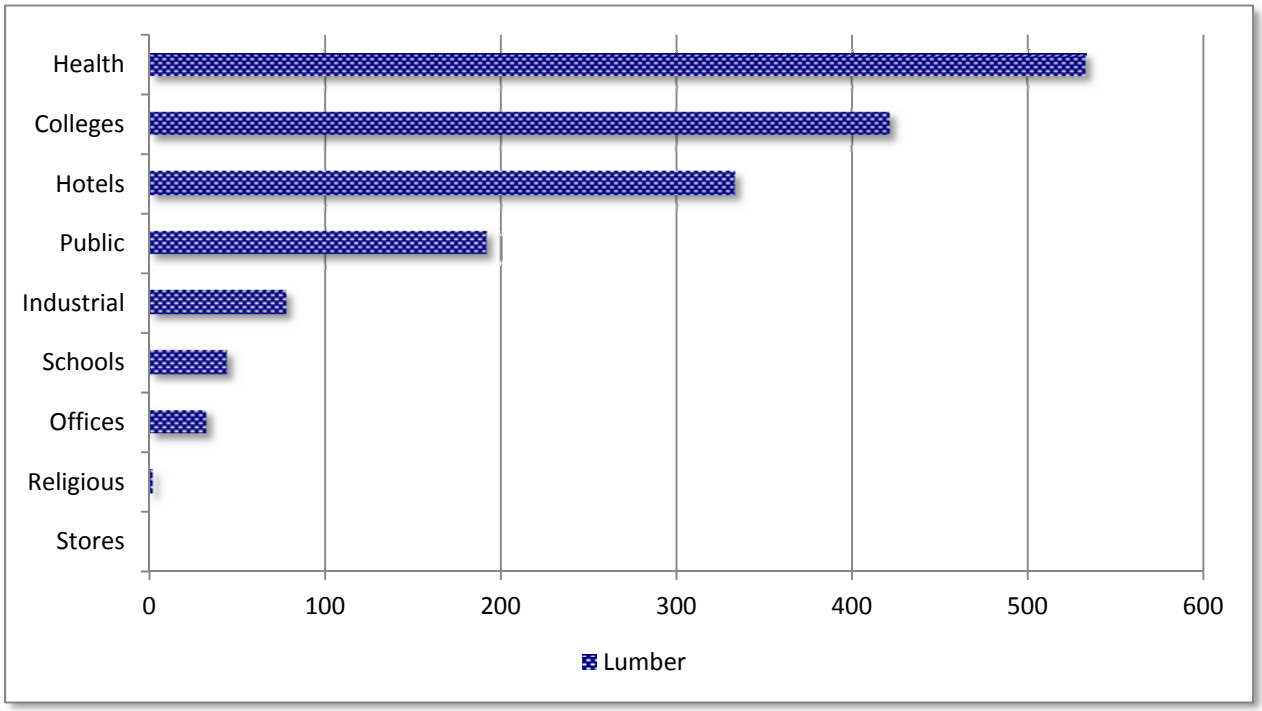



**Source: Table 8**

## WOOD USED IN STAIRS

Nonresidential stairs are typically made of steel and concrete due to stringent code provisions for fire protection for building egress. This study found a relatively small amount of wood stairs, typically made of lumber. A total of about 1.6 million bf of lumber was used in nonresidential building stairway construction (Table 9, Figure 22). The Heath building category led usage with more than 500 thousand bf of lumber for stairs.

**Figure 22. Lumber Used in Low-Rise Nonresidential Stairs in the U.S. by Building Type, 2011 (Thousands of bfe)**

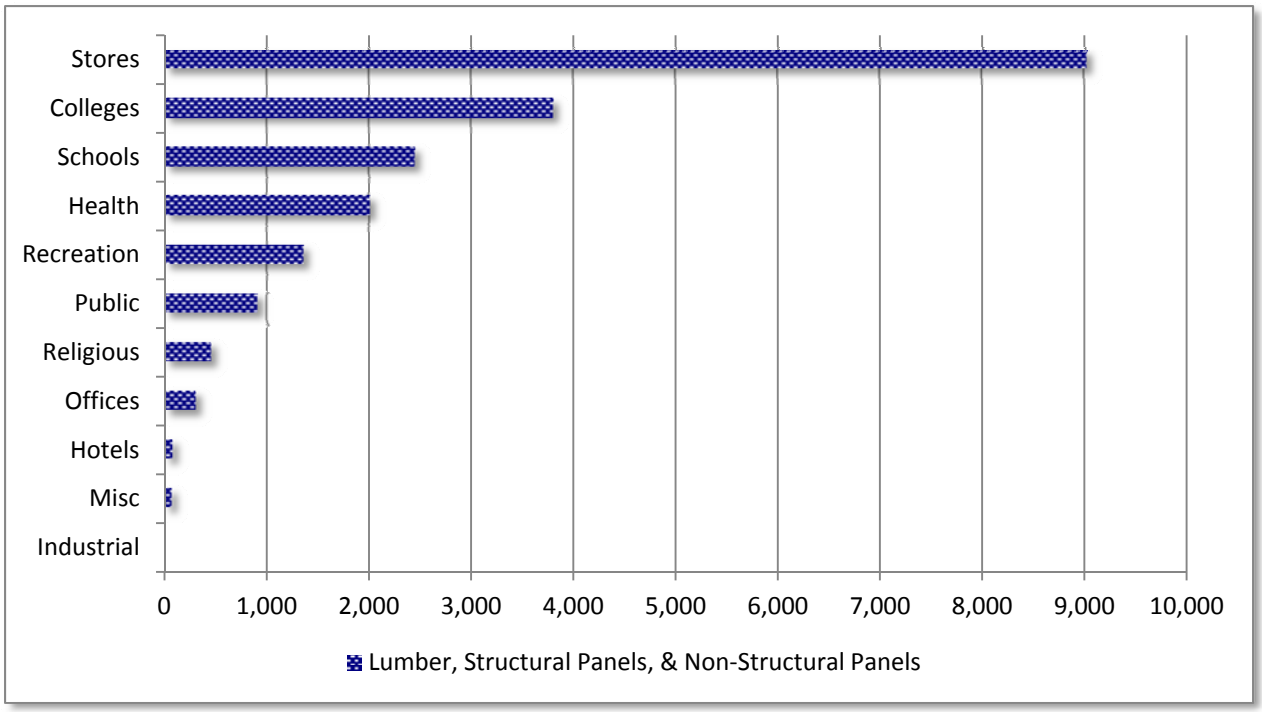



**Source: Table 9**

## WOOD USED IN EXTERIOR CLADDING

Wood exterior cladding refers here to siding, soffit, fascia, and exterior trim materials. There was a total of 20.5 million bfe used in 2011 in low-rise nonresidential buildings, nearly half of which was for Stores (Table 10, Figure 23). The South region (South Atlantic, West South Central, and East South Central divisions) accounted for about half of all exterior cladding in 2011 with 90 percent being lumber. Wood siding is typically used due to its unique aesthetic impact, which is probably why it was most commonly found on Stores. Virtually no wood siding was found on Industrial buildings.

**Figure 23. Lumber, Structural & Non-Structural Panels Used in Exterior Cladding in Low-Rise Nonresidential Exterior Cladding in the U.S. by Building Type, 2011 (Thousands of bfe)**



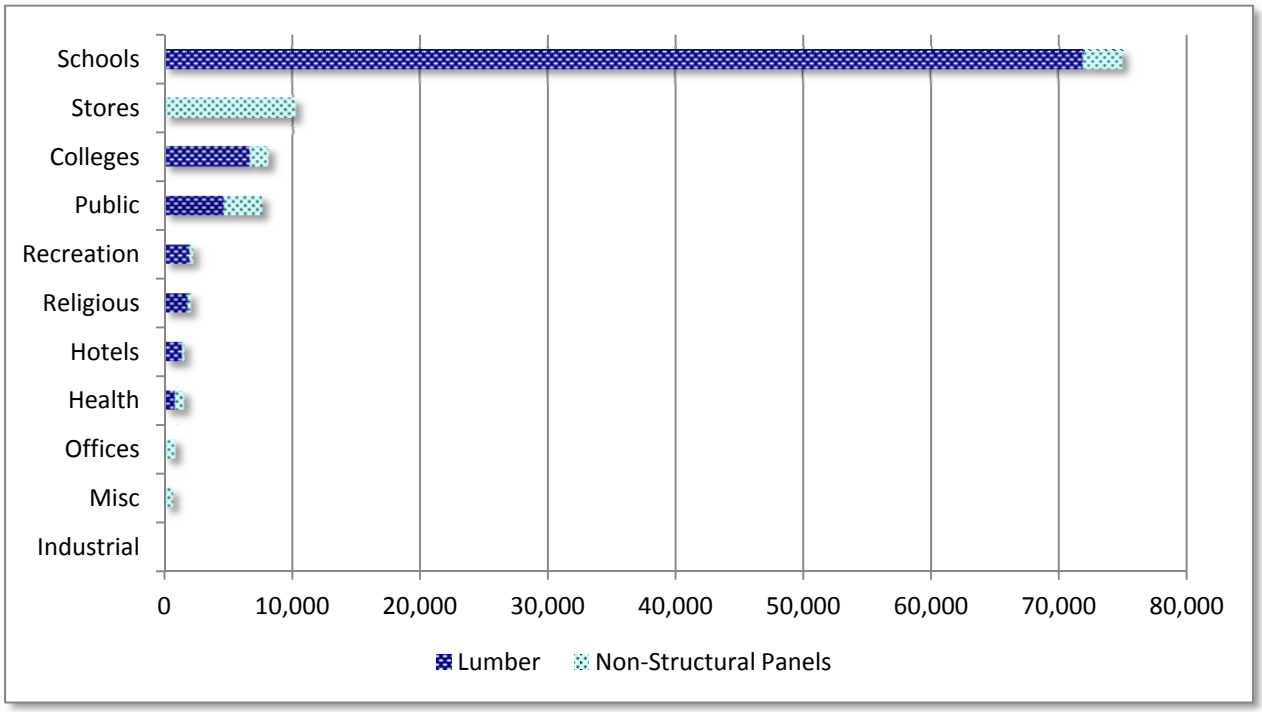

**Source: Table 10**

## WOOD USED IN FINISHED INTERIOR FLOORS, WALLS, & CEILINGS

Finished wood floors and walls are traditional, and still popular in some nonresidential buildings. This study found that approximately 110 million bfe was used in low-rise buildings in 2011 (Table 11). About 89 million bf of lumber was used, the vast majority (81 percent) of which was used in School buildings as gymnasium floors (Figure 24).

About 42 million $ft^2$ of non-structural panels were reported, primarily as decorative wall paneling but also a substantial amount of engineered hardwood and laminate flooring which uses non-structural panel substrate. About half of the total consumption was for Stores. One-third of nonstructural panels were used in the South.

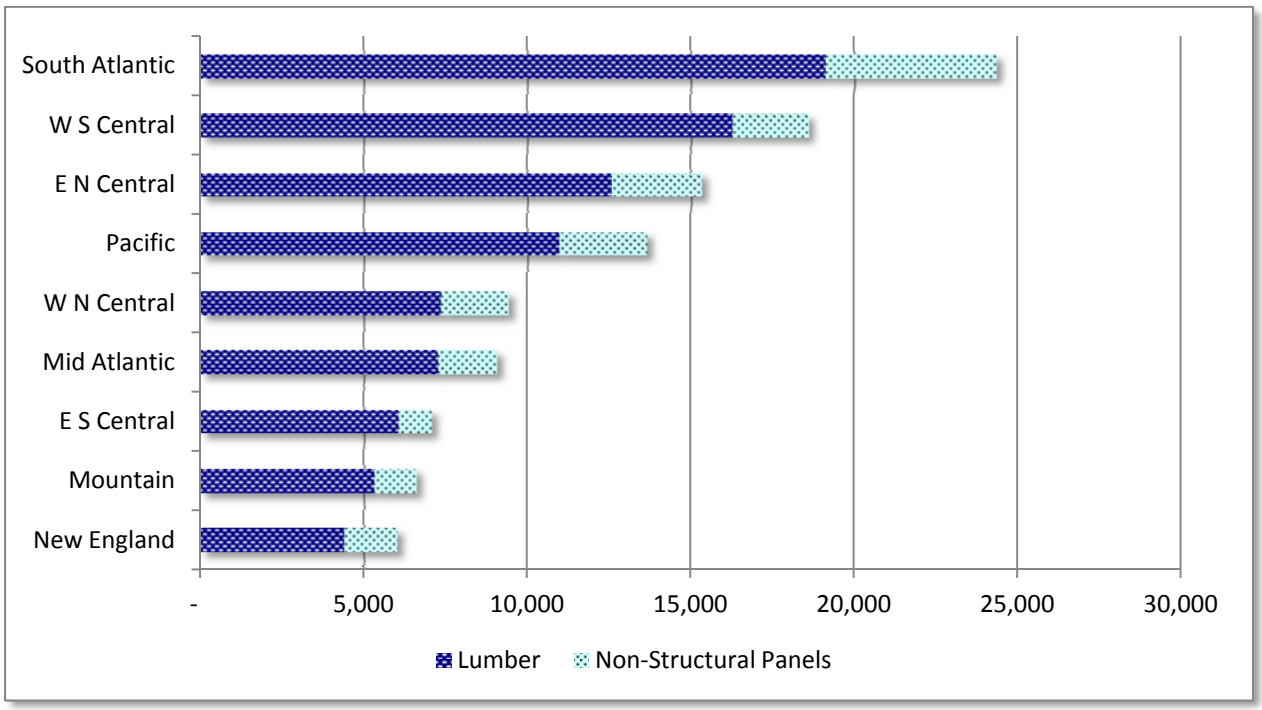
**Figure 24. Lumber & Non-Structural Panels Used in Low-Rise Nonresidential Finished Interior Floors, Walls, & Ceilings in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source: Table 11**

Figure 25 summarizes regional usage of wood in finished walls, floors and ceilings. The South Atlantic division leads consumption in this category. New England had the highest share of non-structural panels (27%) for total usage.

**Figure 25. Lumber & Non-Structural Panels Used in Low-Rise Nonresidential Finished Interior Floors, Walls, & Ceilings in the U.S. by Census Division, 2011 (Thousands of bfe)**

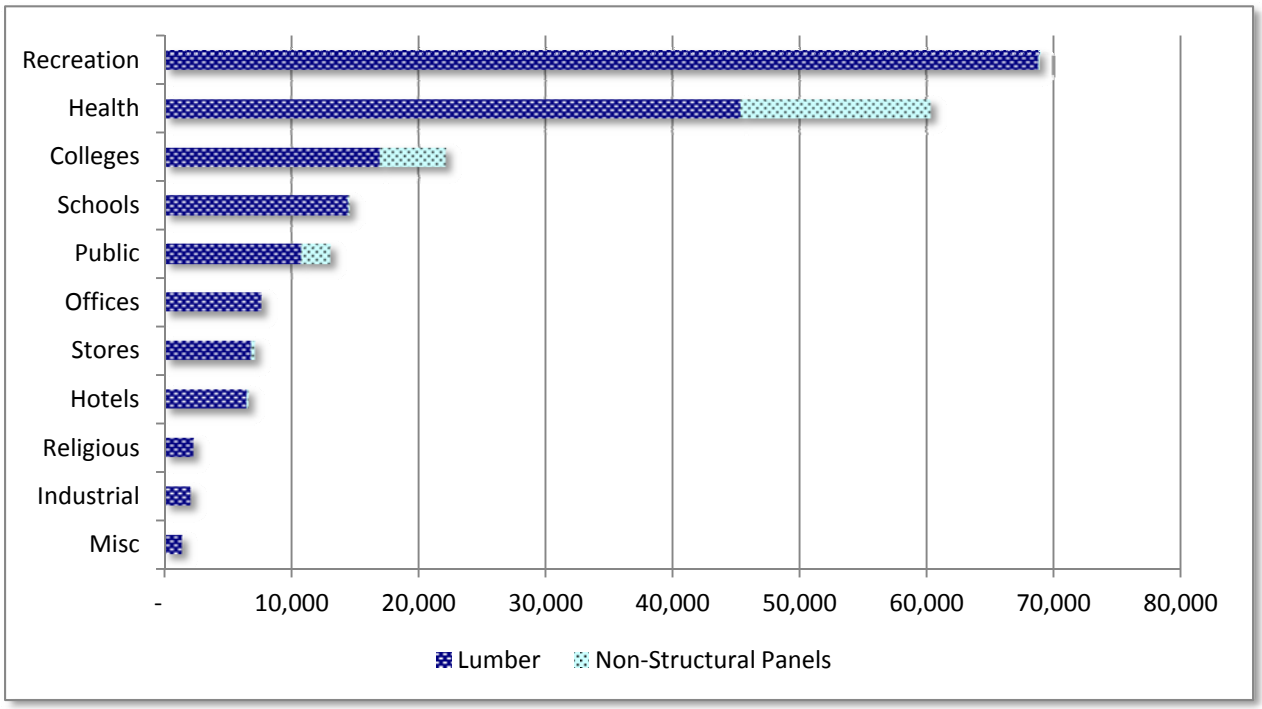



**Source: Table 11**

## WOOD USED IN DOORS, WINDOWS, & INTERIOR MOLDINGS

A substantial share of the total finished interior wood materials belong to the millwork category—doors, windows and interior moldings. Approximately 206 million bfe of lumber and non-structural panels were used in low-rise buildings in 2011 (Table 12). About 183 million bf were lumber, and about 46 million $ft^2$ of non-structural finished wood panels were used. Recreation and Health combined account for about 63 percent total wood used in this category (Figure 26).

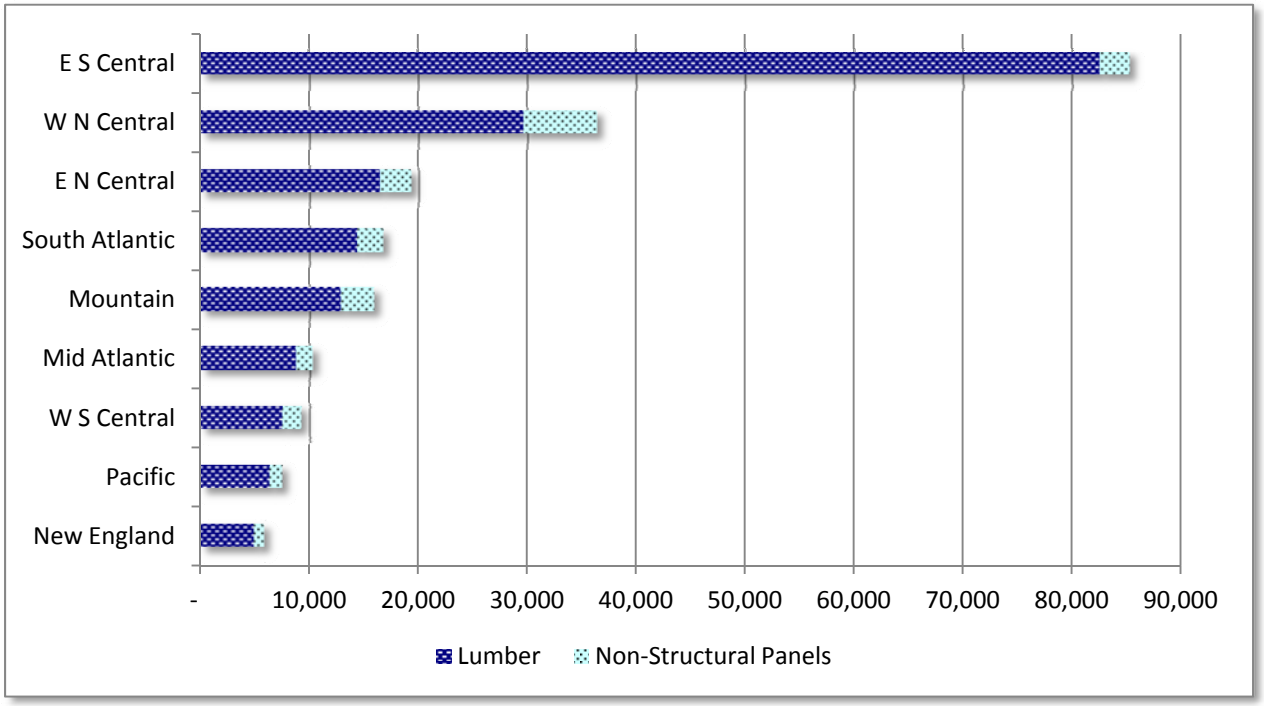
**Figure 26. Lumber & Non-Structural Panels Used in Low-Rise Nonresidential Doors, Windows & Interior Moldings in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source: Table 12**

Regionally, East North Central usage was 85 million bfe—more than twice the amount of its nearest West North Central at 36 million bfe (Figure 27). This may correspond to the geographic proximity of major wood door and window manufacturers.

**Figure 27. Lumber & Non-Structural Panels Used in Low-Rise Nonresidential Doors, Windows & Interior Moldings in the U.S. by Census Division, 2011 (Thousands of bfe)**




**Source: Table 12**

## WOOD PRODUCTS POTENTIAL

The choice of materials used in non-residential buildings is highly influenced by building codes. While the codes do not necessarily dictate the material, provisions in the code require materials in certain applications (such as structural elements) or in specific building types to meet certain criteria (such as non-combustibility). The codes also set conditions of use for certain materials that negatively impact building design, ease of construction, and cost. Nonetheless, wood is not selected as a structural material in every project or application where permitted by the code. The gap between the usage rate of wood materials and their use in code-permitted projects where wood could be a cost-competitive substitute for concrete and steel is not necessarily due to building code restrictions.

A "Building Potential Filter[5]" was developed to determine which specific buildings, based on their type, physical characteristics and intended occupancy, are candidates for wood framed construction. This filter was applied to approximately 10,000 buildings used in this study to determine those which could have used wood for the primary structural material instead of concrete or steel.

### METHODOLOGY FOR CALCULATING WOOD POTENTIAL

The example that follows is provided to illustrate the calculation used to determine how much more wood could be used in exterior walls in concrete and steel buildings if they were converted to wood frame construction. The example is for the volume of dimension lumber that could have been used in walls in schools in New England in 2011.

First, the square footage of floor area where wood was the primary structural wall material was calculated *(a)*. Throughout the study, the primary structural wall material is defined as the structural material (wood, concrete, or steel) that is used to construct 50% or more of the exterior walls. Then, the Wood Potential Filter was used to determine the area of non-wood framed buildings which could have been wood framed under current International Building Code constraints *(b)*. We then looked at the walls where wood was the primary structural wall material and determined the percentage that was **not** wood *(c)*. This calculation was based on the statistical sample of projects selected for Quantity Take Offs which was not sufficient to develop statistically reliable differences between Census divisions by building type. Therefore, *(c)* was developed at the national-level for each building type.

A multiplier was then used to determine potential volume. The wood potential multiplier for walls *(d)* is ( *(b) / (a) ) * ( 1-(c) )*. In the example below, we see that the potential for wood walls is 29.33 times greater than what was actually used.

[5] The Wood Potential Filter was developed by the US Forest Service and FPInnovations in 2003 to determine whether a project, based on type, size and occupancy of building, could have been constructed using wood and still meet International Building Code (IBC) criteria

Actual board feet of dimension lumber used in wall framing *(e)* was calculated by combining data from building plan quantity take-offs and database queries of architectural specifications. Data were expanded to synchronize with the U.S. Department of Commerce's estimates of all non-residential construction value Put in Place in 2011.

The net change in wood usage *(f)* was calculated by applying the wood wall potential multiplier *(d)* to the actual board feet of dimension lumber used in wall framing *(e)*.

The following example illustrates these calculations for dimension lumber used in wall framing for schools in New England. Similar calculations were made for wood potential in floors, roofs, and exterior siding.

| | | SCHOOLS IN NEW ENGLAND |
|---|---|---|
| SF of Floor Area where Wood was the Primary Structural Wall Material | *a* | 654,950 |
| SF of Floor Area with the Potential for Wood as the Primary Structural Wall Material | *b* | 2,067,637 |
| % of Wall Area that was **not** Wood but Wood was the Primary Structural Wall Material | *c* | 15% |
| Wood Wall Potential Multiplier | d = ( *(b) / (a) ) * ( 1-(c) )* | 2.68 |
| Actual Board Feet of Dimension Lumber Used in Wall Framing | *e* | 1,156,388 |
| Net Change in Board Feet Dimension Lumber Used in Wall Framing | *f = d * e* | 3,103,051 |

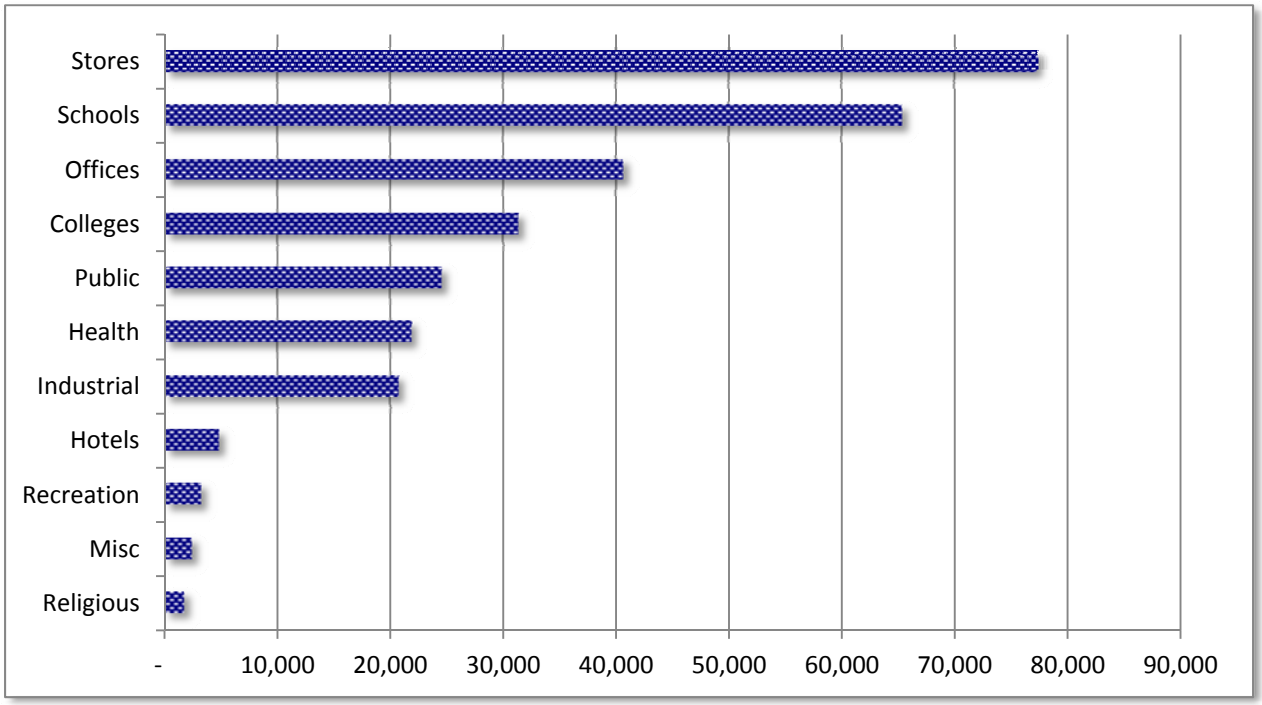
The wood floor and roof potential multipliers were calculated the same as for walls. Of note, the percentage of non-wood floor/roof area in projects where wood was the primary structural material *(c)* was found to be zero across all building types. The multiplier *(d)* therefore becomes *(b)* / *(a)*.

The specific data required for developing the wood potential multipliers for siding, exterior trim, soffits and fascia were not available in the project specifications database. Therefore, the wood wall potential multiplier was used for siding & exterior trim, and the wood roof potential multiplier was used for soffits & fascia.

## INCREMENTAL NEW BUILDING AREA POTENTIAL

The analysis was first conducted on buildings to determine square feet of floor area in new low-rise nonresidential buildings whose primary structural wall material could be converted from steel and concrete into wood. Of the 733 million square feet of building area added in 2011, about 89 million square feet was in buildings with wood as the primary structural wall material. Applying the wood potential model showed that an additional 294 million square feet could have been built with wood. Figure 28 summarizes the total potential of wood by square feet of floor area for the eleven building types. Substitution for concrete or steel has its greatest opportunity in Stores, followed by Schools.

**Figure 28. Total Potential for Wood as a Primary Structural Material in Nonresidential Low-Rise Buildings, 2011**




**Source: Table 3**

## INCREMENTAL WOOD PRODUCTS POTENTIAL

The wood potential analysis shows that wood products have the potential to capture another 2 billion bfe of materials usage as framing material in floors, walls and roofs (Table 15). The greatest opportunities for wood substitution are in floors (839 million bfe) and walls (745 million bfe). Stores, Public, and Schools building categories represent approximately 42 percent of the total potential opportunity.

Regionally, the South Atlantic has the greatest potential for substitution for the combined lumber and engineered wood category (Table 15). Stores and Public buildings represent more than half the opportunity for this category in the South Atlantic. Following with about half the volume

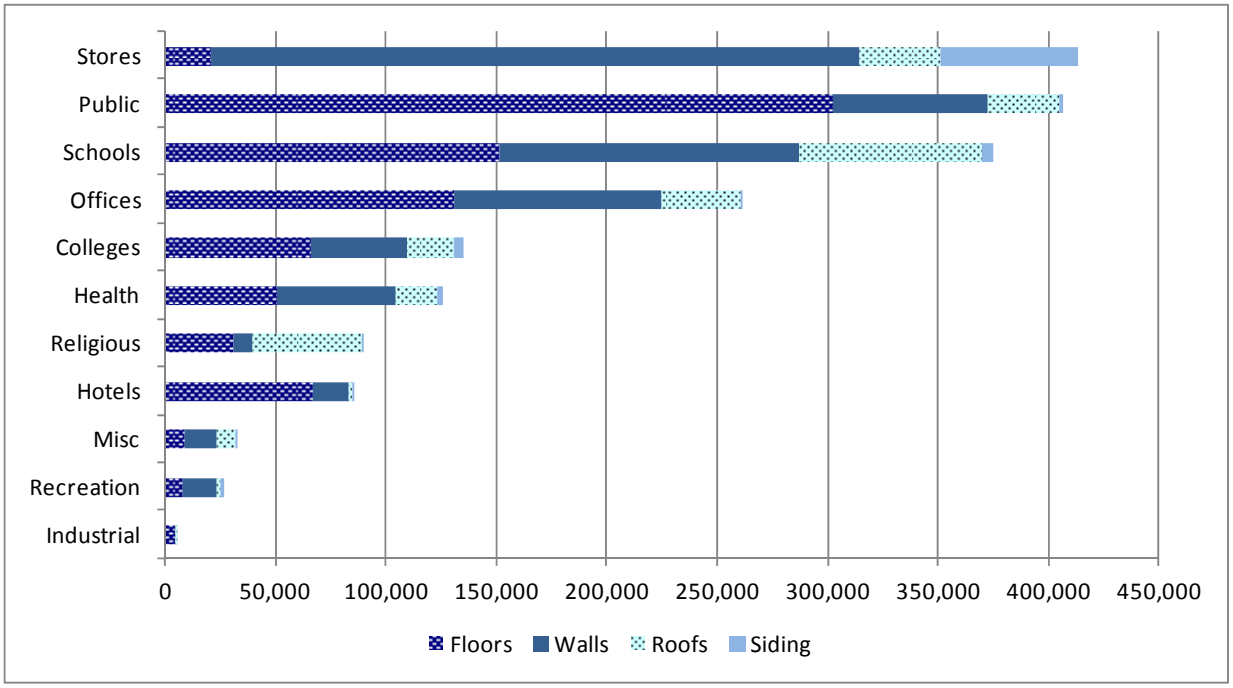
as the South Atlantic is the East North Central. Schools have the greatest opportunity in this Census division with more than double the potential volume than the second and third categories of Public and Stores. Closely following is the West South Central where Public buildings lead in lumber and engineered wood opportunity with Schools and Stores following.

Regarding opportunity for structural wood panels, the South Atlantic leads the other Census divisions by a large volume. Stores in this Division represent 44 percent of the total structural panel opportunity. Following are the East North Central and West South Central divisions, where Stores lead by a large margin.

| | Census Division | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | US TOTAL |
| | *Lumber & Engineered Wood (Th. bfe)* | | | | | | | | | |
| Stores | 14,350 | 23,969 | 44,295 | 32,427 | 189,134 | 35,083 | 44,580 | 15,062 | 14,174 | 413,074 |
| Industrial | 1,673 | 251 | 711 | 380 | 252 | 27 | 405 | 171 | 713 | 4,584 |
| Offices | 28,545 | 42,919 | 35,067 | 25,041 | 51,132 | 10,550 | 18,572 | 39,287 | 9,367 | 260,481 |
| Hotels | 3,675 | 7,821 | 11,875 | 13,967 | 16,359 | 3,331 | 15,512 | 4,822 | 7,614 | 84,976 |
| Schools | 10,951 | 25,947 | 95,380 | 28,372 | 69,332 | 28,908 | 52,101 | 10,541 | 53,183 | 374,715 |
| Colleges | 12,022 | 13,601 | 11,193 | 7,810 | 27,004 | 17,446 | 17,751 | 6,464 | 21,888 | 135,179 |
| Religious | 1,388 | 6,742 | 5,873 | 6,564 | 13,720 | 5,930 | 15,824 | 26,841 | 6,309 | 89,192 |
| Health | 29,217 | 11,099 | 12,803 | 9,154 | 28,516 | 6,332 | 10,713 | 7,651 | 9,702 | 125,188 |
| Public | 47,000 | 28,329 | 45,566 | 24,012 | 127,953 | 10,993 | 71,126 | 15,623 | 36,228 | 406,831 |
| Recreation | 786 | 3,512 | 986 | 1,747 | 6,769 | 1,681 | 5,332 | 3,478 | 1,800 | 26,091 |
| Misc | 6,606 | 844 | 3,690 | 2,510 | 7,979 | 1,042 | 5,958 | 1,400 | 2,002 | 32,031 |
| All Buildings | 156,213 | 165,034 | 267,441 | 151,985 | 538,149 | 121,324 | 257,875 | 131,340 | 162,980 | 1,952,342 |
| | *Structural Panels (ft2)* | | | | | | | | | |
| Stores | 20,051 | 32,617 | 83,301 | 47,106 | 152,664 | 20,522 | 57,185 | 22,612 | 27,066 | 463,124 |
| Industrial | 361 | 424 | 1,475 | 800 | 3,312 | 749 | 549 | 220 | 548 | 8,437 |
| Offices | 13,916 | 57,735 | 21,614 | 11,447 | 50,216 | 18,470 | 9,792 | 8,400 | 7,400 | 198,991 |
| Hotels | 775 | 7,915 | 8,170 | 13,317 | 23,129 | 5,675 | 15,648 | 6,838 | 8,640 | 90,107 |
| Schools | 2,424 | 2,569 | 15,274 | 4,419 | 9,113 | 3,684 | 13,004 | 2,193 | 10,845 | 63,525 |
| Colleges | 7,192 | 11,236 | 13,546 | 5,841 | 33,079 | 20,341 | 15,378 | 6,344 | 18,300 | 131,256 |
| Religious | 194 | 3,219 | 3,071 | 3,711 | 8,528 | 3,574 | 9,373 | 9,209 | 3,863 | 44,744 |
| Health | 14,655 | 8,080 | 11,315 | 10,456 | 25,364 | 5,789 | 12,564 | 7,026 | 9,503 | 104,752 |
| Public | 8,912 | 14,528 | 19,146 | 13,717 | 37,998 | 9,751 | 13,938 | 22,129 | 12,322 | 152,441 |
| Recreation | 762 | 1,940 | 718 | 3,173 | 3,431 | 1,624 | 4,920 | 3,702 | 1,277 | 21,548 |
| Misc | 1,736 | 1,629 | 2,582 | 1,515 | 3,594 | 298 | 2,810 | 691 | 4,049 | 18,904 |
| All Buildings | 70,977 | 141,892 | 180,213 | 115,501 | 350,429 | 90,478 | 155,162 | 89,364 | 103,812 | 1,297,828 |

Figure 29 represents a summary of lumber and engineered wood potential for each of the four building assembly categories (floors, walls, roofs, and siding). For the combined four categories, Stores represents the greatest opportunity, followed by Public and School buildings. By a large margin, Public buildings represent the greatest opportunity in floors. Stores represent the greatest opportunity for walls and exterior siding. Schools have the highest potential for roofs, followed by Religious buildings.

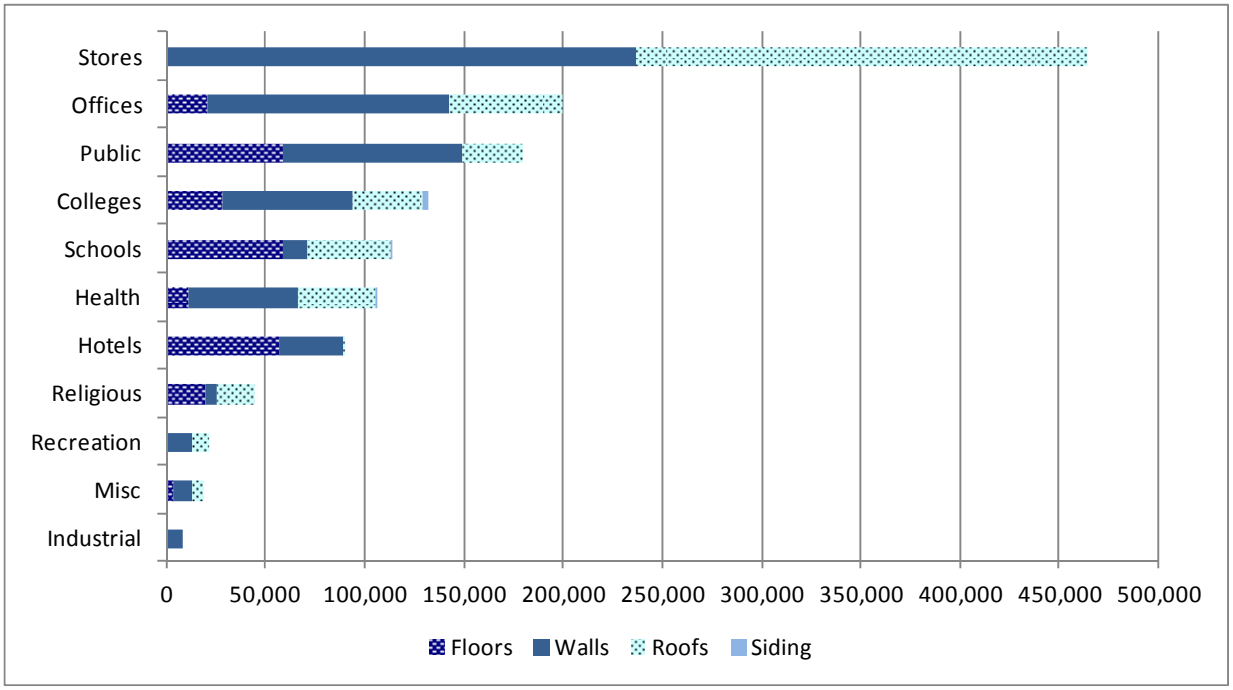
**Figure 29. Potential for Lumber & Engineered Wood Substitution in Low-Rise Nonresidential Buildings in the U.S. by Building Type, 2011 (Thousands of bfe)**




**Source Table 15**

Considering structural and non-structural wood panels, the largest opportunity for wood substitution in floors is in Public, Schools, and Hotels buildings. Stores represent the greatest opportunities for wood panels in walls with Offices a distant second. The opportunity for wood panels in roofs is led by Stores—nearly as large as the remaining building categories combined. Very little opportunity was observed for structural panel siding in low-rise nonresidential buildings.

**Figure 30. Potential for Structural & Non-Structural Panel Substitution in Low-Rise Buildings in the U.S. by Building Type, 2011 (Thousands of ft$^2$)**




**Source Table 15**

## IMPLICATIONS

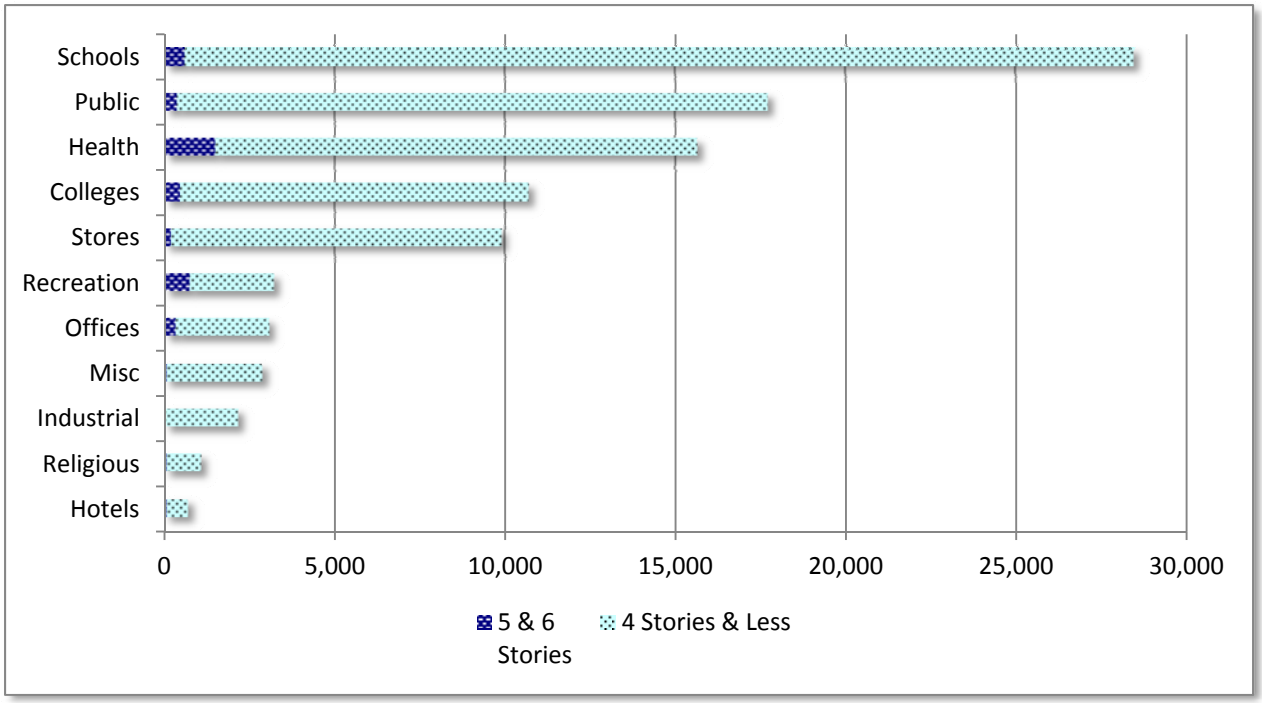
Regionally, the South Atlantic has by far the greatest market penetration for wood materials, followed by the East North Central and West South Central. These three divisions represent more than half the total opportunity found in this study. Stores represent the greatest opportunity for wood products in low-rise nonresidential construction. Other categories meriting an evaluation are Public, Schools and Offices. These top four categories represent well over half the total potential of all building types and warrant inclusion in future market development strategies.

The opportunities for promoting wood products vary widely by region and building category. Future market development strategies would benefit by targeting specific regional and building categories with the highest potential for maximum efficiency.

## LOW-RISE BUILDING ALTERATIONS, RENOVATIONS AND REMODELING

In 2011, alterations, renovations and remodeling of low-rise nonresidential buildings in the U.S. was valued at $95 billion (Table 19). Of note, alterations, renovations and remodeling do not add new building space and hence, fewer structural materials are used. The greatest expenditure was for Schools, accounting for about 30 percent of the total expenditures (Figure 31). Hotels and Religious had the lowest value with about 1 percent of total remodeling each. Since, by definition, no new building space is added in remodeling and renovation, smaller opportunities exist for structural materials (except for reconfiguring interior space with new walls). The greater opportunity in this form of construction expenditure is in interior and exterior finish materials.

**Figure 31. Value in Place of Low-Rise Nonresidential Alterations, Renovations & Remodeling in the U.S., 2011 (Thousands of Dollars)**

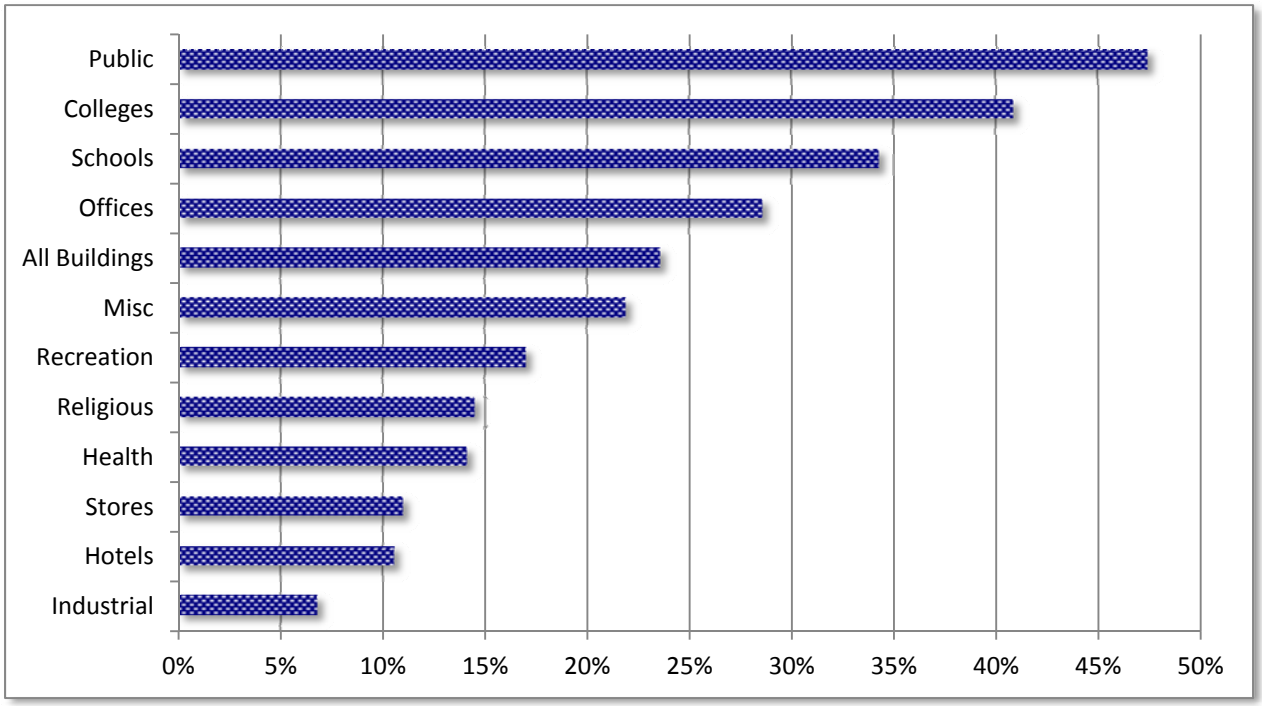



**Source: Table 19**

## SPACE ADDED FOR WHICH LEED CERTIFICATION HAS BEEN REQUESTED

The project specifications used for this study indicate whether LEED certifications were being applied for in each building. No information was available whether actual LEED certifications were granted. In the year 2011, new low-rise nonresidential buildings totaling 184 million square feet applied for LEED certification. This represents about 24 percent of the total 782 million square feet of new low-rise building space added in 2011. Nearly half of all Public buildings, just more than 40 percent of Colleges, and nearly 35 percent of Schools had applied for LEED certification. Incidentally, construction of these three building categories has very high likelihood of being publicly funded. Least likely to have applied for LEED certification are Industrial buildings.

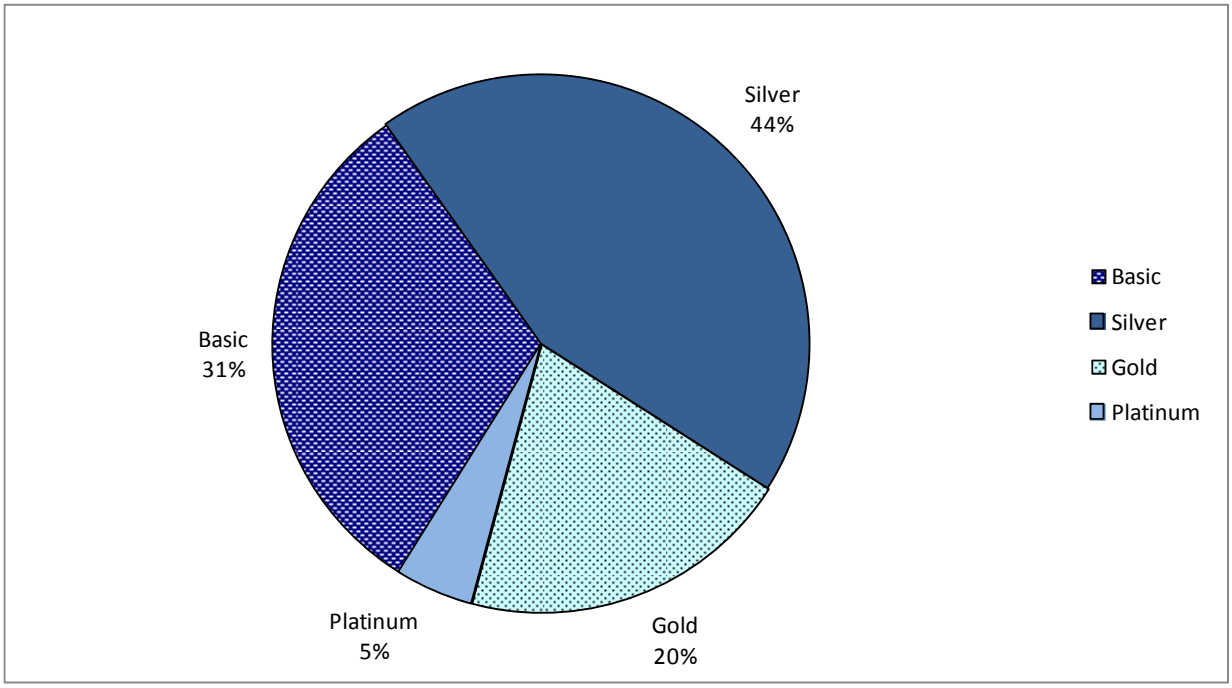
**Figure 32. Low-Rise Nonresidential Buildings that Applied for LEED Certification in the U.S, 2011**




**Source: Table 20**

Applications for Silver certification were 44 percent of total, while Basic (lowest level) represented 31 percent. Gold-level applications were 20 percent, and Platinum (highest level) was only 5 percent.

**Figure 33. Shares of LEED Certification Type for Low-Rise Nonresidential Buildings in the U.S, 2011**




**Source: Table 20**

## SUMMARY AND CONCLUSIONS

The U.S. non-residential building market continues to be an important market for lumber, engineered wood, and wood panels, and new low-rise buildings use the greatest volume of wood products. This study has documented a 35 percent decline in total non-residential building construction spending since the 2008 study which updated the 2003 look at this market. The decline was due to the late 2000's recession, negatively impacting the volume of wood products used in this industry sector. An additional drag on wood products usage is the shift from spending for new buildings, where structural wood materials are often used, to the remodeling of existing buildings. Despite these recent declines, total wood usage in low-rise nonresidential buildings will likely return to, or exceed pre-recession levels as the economic rebound matures. Preliminary figures published by U.S. Census show non-residential construction expenditures increasing about 3.6 percent in 2012 from the previous year.

This study found that wood products remain commonplace in nonresidential buildings as structural components and finish materials. About 627 million bf of lumber and 222 million bf equivalent of engineered wood were used in low-rise buildings in 2011. About 712 million $ft^2$ of wood panel materials were used. Converting all wood usage to board feet equivalency, there was about 1.2 billion bfe used in 2011. The vast majority of wood volume is structural materials, primarily softwood. Leading consumption were buildings in the South. Health, Schools, and Stores were the top three building categories in wood consumption.

The wood products industry has substantial potential to achieve greater penetration in the low-rise nonresidential building sector than its present rate. This study shows that wood was used as the primary structural material in just a little more than a quarter of the projects where it would have been allowed by the current International Building Code. Converting all incremental wood potential to board feet equivalency, the total was about 3.8 billion bfe. When nonresidential construction returns to pre-recession levels, the incremental potential for wood use will be much higher.

From this study, it is evident that the choice of materials for low-rise nonresidential buildings varies widely by building type and geographic area. Likewise, opportunities for increasing wood usage in low-rise building construction varies widely due to the same factors. The overall greatest growth potential for framing products is in walls and the greatest opportunity for sheathing is in roofs. Regarding building type, Stores represent the highest unmet potential for both framing and sheathing products. Geographically, the South Atlantic consistently reports the greatest amount of wood product use in this industry sector. There is still significant potential for the wood products industry to successfully promote the use of wood in nonresidential building construction under the current version of the building code.

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*http://www.census.gov/construction/c30/c30index.html (Accessed March 24, 2013)*

# APPENDIX A

## DATA TABLES

TABLE 1: VALUE OF ALL CONSTRUCTION, AREA, AND WOOD PRODUCTS CONSUMPTION
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION, UNITED STATES 2011

| | *2011*<br>*Th.* |
|---|---|
| Value of Construction | |
| Residential | $245,686,000 |
| Nonresidential | $532,552,000 |
| All Nonresidential Buildings | $288,809,940 |
| Low-Rise Nonresidential Buildings | $208,380,393 |
| New Low-Rise Nonresidential Buildings & Additions | $112,900,135 |
| Repair & Remodeling to Low-Rise Nonresidential Buildings | $95,480,258 |
| Nonbuildings | $243,742,060 |
| TOTAL | $778,238,000 |
| | |
| Area in New Low-Rise Nonresidential Buildings | |
| Floor Area | 733,110.1 |
| Exterior Wall Area | 228,938.6 |
| Roof Area | 565,579.7 |
| | |
| Wood Consumption in New Low-Rise Nonresidential Buildings | |
| Lumber (bf) | 626,754.5 |
| Engineered Wood (bfe) | 221,688.6 |
| I-Joist (lf) | 26,935.1 |
| Glulam (bf) | 67,082.0 |
| SCL (cf) | 6,248.6 |
| Rim Board ($ft^2$) | 1,364.1 |
| CLT (cf) | 4.8 |
| Lumber & Engineered Wood (bfe) | 848,443.2 |
| Structural Panels ($ft^2$) | 711,874.3 |
| Softwood Plywood ($ft^2$) | 651,114.9 |
| OSB ($ft^2$) | 60,759.4 |
| Non-Structural Panels ($ft^2$) | 19,468.3 |
| All Panels ($ft^2$) | 731,342.6 |
| TOTAL (bfe) | 1,214,114.5 |
| | |
| Number of New Low-Rise Nonresidential Buildings | 10.5 |

**Table 1: Value of All Construction, Area, & Wood Products Consumption**

TABLE 2: PRIMARY STRUCTURAL MATERIAL OF NEW LOW-RISE NONRESIDENTIAL BUILDINGS
BY BUILDING TYPE, UNITED STATES 2011

| | Construction Value | | New Buildings & Additions | | | | New Buildings & Additions | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All | New & Additions | Wood | Concrete | Steel | TOTAL | Wood | Concrete | Steel | TOTAL |
| | *Mil. $* | *Mil. $* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *%* | *%* | *%* | *%* |
| Stores | $19,796 | $9,889 | 10,708 | 30,952 | 110,794 | 152,454 | 7.0% | 20.3% | 72.7% | 100.0% |
| Industrial | $9,377 | $7,203 | 6,416 | 39,960 | 39,458 | 85,833 | 7.5% | 46.6% | 46.0% | 100.0% |
| Offices | $12,294 | $9,236 | 10,715 | 19,864 | 56,034 | 86,613 | 12.4% | 22.9% | 64.7% | 100.0% |
| Hotels | $3,542 | $2,858 | 11,499 | 3,695 | 5,973 | 21,167 | 54.3% | 17.5% | 28.2% | 100.0% |
| Schools | $47,511 | $19,050 | 13,115 | 34,877 | 104,054 | 152,045 | 8.6% | 22.9% | 68.4% | 100.0% |
| Colleges | $23,547 | $12,854 | 9,249 | 11,879 | 30,931 | 52,060 | 17.8% | 22.8% | 59.4% | 100.0% |
| Religious | $2,709 | $1,636 | 4,443 | 2,521 | 6,198 | 13,162 | 33.8% | 19.2% | 47.1% | 100.0% |
| Health | $31,465 | $15,820 | 12,432 | 12,263 | 45,750 | 70,446 | 17.6% | 17.4% | 64.9% | 100.0% |
| Public | $47,302 | $29,588 | 5,182 | 16,806 | 49,718 | 71,705 | 7.2% | 23.4% | 69.3% | 100.0% |
| Recreation | $4,584 | $1,372 | 2,369 | 4,845 | 11,579 | 18,793 | 12.6% | 25.8% | 61.6% | 100.0% |
| Misc | $6,251 | $3,394 | 2,543 | 3,091 | 3,198 | 8,832 | 28.8% | 35.0% | 36.2% | 100.0% |
| All Buildings | $208,380 | $112,900 | 88,672 | 180,752 | 463,686 | 733,110 | 12.1% | 24.7% | 63.2% | 100.0% |

**Table 2: Primary Structural Material by Building Type**

TABLE 3: POTENTIAL FOR WOOD AS PRIMARY STRUCTURAL MATERIAL IN NEW LOW-RISE NONRESIDENTIAL BUILDINGS BY BUILDING TYPE, UNITED STATES 2011

| | New Buildings | | | New Buildings | | |
|---|---|---|---|---|---|---|
| | From Concrete *Th. ft²* | From Steel *Th. ft²* | TOTAL *Th. ft²* | From Concrete *%* | From Steel *%* | TOTAL *%* |
| Stores | 0 | 77,223 | 77,223 | 0.0% | 100.0% | 100.0% |
| Industrial | 8,968 | 11,773 | 20,741 | 43.2% | 56.8% | 100.0% |
| Offices | 2,075 | 38,517 | 40,592 | 5.1% | 94.9% | 100.0% |
| Hotels | 277 | 4,579 | 4,857 | 5.7% | 94.3% | 100.0% |
| Schools | 28,686 | 36,629 | 65,315 | 43.9% | 56.1% | 100.0% |
| Colleges | 3,789 | 27,560 | 31,349 | 12.1% | 87.9% | 100.0% |
| Religious | 0 | 1,728 | 1,728 | 0.0% | 100.0% | 100.0% |
| Health | 4,167 | 17,708 | 21,874 | 19.0% | 81.0% | 100.0% |
| Public | 0 | 24,541 | 24,541 | 0.0% | 100.0% | 100.0% |
| Recreation | 0 | 3,235 | 3,235 | 0.0% | 100.0% | 100.0% |
| Misc | 0 | 2,388 | 2,388 | 0.0% | 100.0% | 100.0% |
| All Buildings | 47,962 | 245,882 | 293,844 | 16.3% | 83.7% | 100.0% |

**Table 3: Potential for Wood as Primary Structural Material by Building Type**

TABLE 4: SUMMARY OF ALL LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION FOR FRAMING, COLUMNS, STAIRS, SIDING, SOFFIT, FASCIA, EXTERIOR TRIM, SHEATHING & UNDERLAYMENT BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 10,132 | 0 | 1,957 | 117 | 34 | 0 | 3,841 | 13,973 | 23,980 | 0 | 23,980 | 0 | 23,980 | 25,963 |
| New England | 4,761 | 0 | 1,829 | 109 | 32 | 0 | 3,584 | 8,345 | 12,439 | 0 | 12,439 | 0 | 12,439 | 14,564 |
| Mid Atlantic | 5,371 | 0 | 128 | 8 | 2 | 0 | 257 | 5,628 | 11,542 | 0 | 11,542 | 0 | 11,542 | 11,399 |
| Midwest | 14,093 | 0 | 221 | 35 | 3 | 0 | 781 | 14,875 | 34,394 | 296 | 34,690 | 0 | 34,690 | 32,220 |
| E N Central | 8,583 | 0 | 168 | 31 | 2 | 0 | 666 | 9,249 | 20,888 | 67 | 20,955 | 0 | 20,955 | 19,726 |
| W N Central | 5,510 | 0 | 53 | 4 | 1 | 0 | 116 | 5,626 | 13,506 | 228 | 13,735 | 0 | 13,735 | 12,493 |
| South | 35,438 | 0 | 559 | 71 | 9 | 0 | 1,700 | 37,137 | 61,468 | 0 | 61,468 | 0 | 61,468 | 67,871 |
| South Atlantic | 21,815 | 0 | 529 | 43 | 8 | 0 | 1,213 | 23,028 | 39,053 | 0 | 39,053 | 0 | 39,053 | 42,555 |
| E S Central | 5,332 | 0 | 13 | 1 | 0 | 0 | 33 | 5,365 | 6,212 | 0 | 6,212 | 0 | 6,212 | 8,471 |
| W S Central | 8,291 | 0 | 16 | 27 | 0 | 0 | 453 | 8,744 | 16,204 | 0 | 16,204 | 0 | 16,204 | 16,846 |
| West | 11,618 | 0 | 662 | 28 | 5 | 0 | 1,110 | 12,728 | 28,004 | 56 | 28,059 | 0 | 28,059 | 26,757 |
| Mountain | 4,046 | 0 | 189 | 4 | 1 | 0 | 257 | 4,303 | 9,323 | 0 | 9,323 | 0 | 9,323 | 8,964 |
| Pacific | 7,572 | 0 | 472 | 24 | 4 | 0 | 853 | 8,425 | 18,680 | 56 | 18,736 | 0 | 18,736 | 17,793 |
| US Total | 71,281 | 0 | 3,398 | 250 | 51 | 0 | 7,432 | 78,712 | 147,847 | 351 | 148,198 | 0 | 148,198 | 152,811 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 1,038 | 3 | 2 | 4 | 0 | 0 | 67 | 1,105 | 246 | 0 | 246 | 0 | 246 | 1,228 |
| New England | 919 | 2 | 0 | 2 | 0 | 0 | 40 | 959 | 118 | 0 | 118 | 0 | 118 | 1,018 |
| Mid Atlantic | 119 | 0 | 2 | 2 | 0 | 0 | 27 | 146 | 128 | 0 | 128 | 0 | 128 | 210 |
| Midwest | 588 | 1 | 0 | 5 | 0 | 0 | 82 | 670 | 601 | 0 | 601 | 0 | 601 | 970 |
| E N Central | 339 | 1 | 0 | 3 | 0 | 0 | 49 | 388 | 351 | 0 | 351 | 0 | 351 | 563 |
| W N Central | 249 | 0 | 0 | 2 | 0 | 0 | 33 | 282 | 250 | 0 | 250 | 0 | 250 | 407 |
| South | 1,066 | 8 | 0 | 8 | 0 | 0 | 143 | 1,209 | 1,218 | 0 | 1,218 | 0 | 1,218 | 1,818 |
| South Atlantic | 669 | 4 | 0 | 5 | 0 | 0 | 86 | 754 | 751 | 0 | 751 | 0 | 751 | 1,130 |
| E S Central | 176 | 2 | 0 | 1 | 0 | 0 | 15 | 191 | 207 | 0 | 207 | 0 | 207 | 294 |
| W S Central | 221 | 1 | 0 | 3 | 0 | 0 | 43 | 264 | 260 | 0 | 260 | 0 | 260 | 394 |
| West | 392 | 0 | 0 | 4 | 0 | 0 | 61 | 453 | 435 | 0 | 435 | 0 | 435 | 670 |
| Mountain | 72 | 0 | 0 | 1 | 0 | 0 | 18 | 90 | 82 | 0 | 82 | 0 | 82 | 131 |
| Pacific | 320 | 0 | 0 | 3 | 0 | 0 | 43 | 363 | 353 | 0 | 353 | 0 | 353 | 540 |
| US Total | 3,084 | 12 | 2 | 20 | 0 | 0 | 353 | 3,437 | 2,500 | 0 | 2,500 | 0 | 2,500 | 4,687 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 20,224 | 31 | 77 | 85 | 12 | 0 | 1,499 | 21,722 | 21,302 | 8,296 | 29,598 | 0 | 29,598 | 36,521 |
| New England | 3,587 | 5 | 45 | 21 | 2 | 0 | 392 | 3,979 | 2,980 | 1,228 | 4,209 | 0 | 4,209 | 6,083 |
| Mid Atlantic | 16,637 | 27 | 32 | 64 | 10 | 0 | 1,107 | 17,743 | 18,322 | 7,067 | 25,389 | 0 | 25,389 | 30,438 |
| Midwest | 9,404 | 14 | 101 | 115 | 14 | 0 | 1,968 | 11,371 | 8,667 | 3,586 | 12,253 | 0 | 12,253 | 17,498 |
| E N Central | 7,129 | 11 | 51 | 72 | 10 | 0 | 1,232 | 8,361 | 6,842 | 2,832 | 9,675 | 0 | 9,675 | 13,198 |
| W N Central | 2,275 | 3 | 50 | 42 | 5 | 0 | 735 | 3,010 | 1,825 | 754 | 2,579 | 0 | 2,579 | 4,300 |
| South | 24,726 | 38 | 151 | 91 | 14 | 0 | 1,695 | 26,420 | 24,708 | 9,962 | 34,670 | 0 | 34,670 | 43,755 |
| South Atlantic | 14,227 | 22 | 94 | 54 | 8 | 0 | 999 | 15,226 | 14,386 | 5,718 | 20,104 | 0 | 20,104 | 25,278 |
| E S Central | 4,902 | 8 | 11 | 10 | 2 | 0 | 190 | 5,092 | 4,990 | 2,053 | 7,043 | 0 | 7,043 | 8,613 |
| W S Central | 5,597 | 8 | 46 | 28 | 3 | 0 | 506 | 6,103 | 5,332 | 2,191 | 7,523 | 0 | 7,523 | 9,865 |
| West | 9,254 | 14 | 67 | 98 | 13 | 0 | 1,674 | 10,928 | 8,975 | 3,673 | 12,648 | 0 | 12,648 | 17,252 |
| Mountain | 3,009 | 5 | 20 | 73 | 9 | 0 | 1,206 | 4,215 | 2,920 | 1,203 | 4,123 | 0 | 4,123 | 6,277 |
| Pacific | 6,244 | 9 | 47 | 25 | 4 | 0 | 468 | 6,712 | 6,055 | 2,470 | 8,525 | 0 | 8,525 | 10,975 |
| US Total | 63,606 | 96 | 396 | 389 | 53 | 0 | 6,835 | 70,442 | 63,652 | 25,517 | 89,169 | 0 | 89,169 | 115,026 |

**Table 4: Summary of All Lumber, Engineered Wood, & Wood Panels Used by Building Type & Geography**

TABLE 4: SUMMARY OF ALL LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION FOR FRAMING, COLUMNS, STAIRS, SIDING, SOFFIT, FASCIA, EXTERIOR TRIM, SHEATHING & UNDERLAYMENT BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 6,570 | 809 | 0 | 287 | 20 | 0 | 6,219 | 12,789 | 4,422 | 0 | 4,422 | 0 | 4,422 | 15,000 |
| New England | 3,564 | 151 | 0 | 165 | 2 | 0 | 2,946 | 6,510 | 816 | 0 | 816 | 0 | 816 | 6,917 |
| Mid Atlantic | 3,006 | 658 | 0 | 122 | 18 | 0 | 3,274 | 6,280 | 3,607 | 0 | 3,607 | 0 | 3,607 | 8,083 |
| Midwest | 9,273 | 1,585 | 0 | 506 | 54 | 0 | 11,290 | 20,563 | 8,548 | 0 | 8,548 | 0 | 8,548 | 24,837 |
| E N Central | 4,592 | 582 | 0 | 280 | 23 | 0 | 5,652 | 10,244 | 3,085 | 0 | 3,085 | 0 | 3,085 | 11,786 |
| W N Central | 4,681 | 1,002 | 0 | 226 | 31 | 0 | 5,638 | 10,319 | 5,464 | 0 | 5,464 | 0 | 5,464 | 13,051 |
| South | 16,777 | 3,607 | 1 | 545 | 83 | 0 | 15,978 | 32,755 | 19,595 | 0 | 19,595 | 0 | 19,595 | 42,553 |
| South Atlantic | 9,537 | 1,860 | 1 | 290 | 39 | 0 | 8,373 | 17,910 | 10,054 | 0 | 10,054 | 0 | 10,054 | 22,937 |
| E S Central | 2,184 | 573 | 0 | 52 | 12 | 0 | 1,982 | 4,166 | 3,153 | 0 | 3,153 | 0 | 3,153 | 5,743 |
| W S Central | 5,056 | 1,175 | 0 | 204 | 33 | 0 | 5,622 | 10,679 | 6,388 | 0 | 6,388 | 0 | 6,388 | 13,872 |
| West | 7,642 | 1,645 | 0 | 229 | 42 | 0 | 6,981 | 14,623 | 8,688 | 0 | 8,688 | 0 | 8,688 | 18,967 |
| Mountain | 3,196 | 770 | 0 | 83 | 22 | 0 | 2,887 | 6,083 | 3,910 | 0 | 3,910 | 0 | 3,910 | 8,038 |
| Pacific | 4,446 | 875 | 0 | 146 | 20 | 0 | 4,094 | 8,540 | 4,778 | 0 | 4,778 | 0 | 4,778 | 10,929 |
| US Total | 40,262 | 7,646 | 2 | 1,567 | 199 | 0 | 40,468 | 80,730 | 41,254 | 0 | 41,254 | 0 | 41,254 | 101,357 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 15,726 | 949 | 4,189 | 322 | 71 | 0 | 11,278 | 27,004 | 4,316 | 434 | 4,750 | 2,569 | 7,319 | 30,663 |
| New England | 4,468 | 351 | 434 | 30 | 8 | 0 | 1,619 | 6,087 | 1,622 | 163 | 1,785 | 967 | 2,752 | 7,463 |
| Mid Atlantic | 11,257 | 598 | 3,754 | 292 | 63 | 0 | 9,659 | 20,916 | 2,694 | 271 | 2,965 | 1,602 | 4,567 | 23,200 |
| Midwest | 24,977 | 1,601 | 7,797 | 577 | 127 | 0 | 20,296 | 45,274 | 7,054 | 1,274 | 8,328 | 4,516 | 12,844 | 51,696 |
| E N Central | 16,841 | 1,062 | 6,109 | 454 | 102 | 0 | 15,551 | 32,392 | 4,754 | 1,033 | 5,786 | 3,128 | 8,915 | 36,850 |
| W N Central | 8,136 | 539 | 1,688 | 123 | 25 | 0 | 4,745 | 12,881 | 2,301 | 241 | 2,542 | 1,387 | 3,929 | 14,846 |
| South | 46,438 | 2,825 | 4,627 | 344 | 85 | 0 | 15,829 | 62,267 | 12,035 | 1,350 | 13,385 | 7,608 | 20,993 | 72,764 |
| South Atlantic | 18,674 | 1,155 | 2,440 | 186 | 45 | 0 | 7,754 | 26,428 | 4,994 | 537 | 5,531 | 2,971 | 8,502 | 30,679 |
| E S Central | 6,266 | 374 | 1,019 | 83 | 19 | 0 | 3,097 | 9,363 | 1,612 | 168 | 1,780 | 1,303 | 3,083 | 10,904 |
| W S Central | 21,498 | 1,296 | 1,167 | 76 | 22 | 0 | 4,979 | 26,477 | 5,428 | 646 | 6,074 | 3,334 | 9,408 | 31,180 |
| West | 18,091 | 1,153 | 3,387 | 259 | 59 | 5 | 9,935 | 28,026 | 5,041 | 554 | 5,595 | 3,026 | 8,620 | 32,337 |
| Mountain | 6,786 | 384 | 401 | 30 | 8 | 5 | 1,726 | 8,512 | 1,677 | 181 | 1,858 | 1,048 | 2,905 | 9,965 |
| Pacific | 11,305 | 769 | 2,987 | 229 | 52 | 0 | 8,209 | 19,514 | 3,364 | 373 | 3,737 | 1,978 | 5,715 | 22,372 |
| US Total | 105,232 | 6,528 | 19,999 | 1,502 | 342 | 5 | 57,339 | 162,571 | 28,446 | 3,612 | 32,058 | 17,719 | 49,776 | 187,459 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 17,137 | 117 | 87 | 244 | 30 | 0 | 4,234 | 21,371 | 19,271 | 0 | 19,271 | 38 | 19,309 | 31,026 |
| New England | 8,238 | 44 | 52 | 156 | 19 | 0 | 2,647 | 10,886 | 7,517 | 0 | 7,517 | 14 | 7,531 | 14,651 |
| Mid Atlantic | 8,899 | 73 | 35 | 87 | 11 | 0 | 1,587 | 10,486 | 11,754 | 0 | 11,754 | 24 | 11,778 | 16,375 |
| Midwest | 12,617 | 96 | 64 | 95 | 12 | 0 | 1,784 | 14,401 | 16,179 | 0 | 16,179 | 31 | 16,210 | 22,506 |
| E N Central | 7,540 | 58 | 37 | 60 | 8 | 0 | 1,111 | 8,651 | 10,185 | 0 | 10,185 | 19 | 10,204 | 13,753 |
| W N Central | 5,078 | 38 | 27 | 35 | 4 | 0 | 673 | 5,750 | 5,993 | 0 | 5,993 | 12 | 6,006 | 8,753 |
| South | 26,116 | 212 | 126 | 337 | 46 | 0 | 5,962 | 32,078 | 35,938 | 0 | 35,938 | 70 | 36,008 | 50,082 |
| South Atlantic | 13,433 | 107 | 66 | 152 | 22 | 0 | 2,731 | 16,163 | 18,403 | 0 | 18,403 | 35 | 18,438 | 25,382 |
| E S Central | 4,315 | 36 | 25 | 89 | 11 | 0 | 1,526 | 5,841 | 6,067 | 0 | 6,067 | 12 | 6,079 | 8,881 |
| W S Central | 8,369 | 69 | 36 | 95 | 13 | 0 | 1,705 | 10,074 | 11,468 | 0 | 11,468 | 23 | 11,491 | 15,819 |
| West | 12,639 | 104 | 48 | 104 | 17 | 0 | 1,922 | 14,561 | 16,707 | 0 | 16,707 | 34 | 16,741 | 22,931 |
| Mountain | 2,481 | 20 | 11 | 19 | 3 | 0 | 353 | 2,834 | 3,147 | 0 | 3,147 | 6 | 3,153 | 4,411 |
| Pacific | 10,158 | 84 | 37 | 85 | 14 | 0 | 1,569 | 11,727 | 13,560 | 0 | 13,560 | 27 | 13,588 | 18,521 |
| US Total | 68,510 | 529 | 325 | 779 | 104 | 0 | 13,901 | 82,412 | 88,095 | 0 | 88,095 | 173 | 88,268 | 126,546 |

TABLE 4: SUMMARY OF ALL LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION FOR FRAMING, COLUMNS, STAIRS, SIDING, SOFFIT, FASCIA, EXTERIOR TRIM, SHEATHING & UNDERLAYMENT BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 8,022 | 379 | 282 | 26 | 11 | 0 | 1,461 | 9,483 | 4,429 | 0 | 4,429 | 0 | 4,429 | 11,698 |
| New England | 3,154 | 70 | 20 | 2 | 1 | 0 | 187 | 3,341 | 806 | 0 | 806 | 0 | 806 | 3,743 |
| Mid Atlantic | 4,868 | 309 | 262 | 24 | 10 | 0 | 1,274 | 6,143 | 3,624 | 0 | 3,624 | 0 | 3,624 | 7,955 |
| Midwest | 15,535 | 795 | 434 | 74 | 19 | 0 | 3,215 | 18,750 | 9,204 | 53 | 9,257 | 0 | 9,257 | 23,379 |
| E N Central | 6,370 | 334 | 209 | 42 | 8 | 0 | 1,556 | 7,926 | 3,873 | 0 | 3,873 | 0 | 3,873 | 9,863 |
| W N Central | 9,165 | 461 | 225 | 32 | 12 | 0 | 1,659 | 10,824 | 5,331 | 53 | 5,384 | 0 | 5,384 | 13,516 |
| South | 49,603 | 2,535 | 1,332 | 150 | 73 | 0 | 8,836 | 58,440 | 29,315 | 0 | 29,315 | 0 | 29,315 | 73,097 |
| South Atlantic | 21,216 | 1,026 | 423 | 75 | 27 | 0 | 3,689 | 24,906 | 11,910 | 0 | 11,910 | 0 | 11,910 | 30,861 |
| E S Central | 6,222 | 403 | 434 | 26 | 10 | 0 | 1,665 | 7,887 | 4,663 | 0 | 4,663 | 0 | 4,663 | 10,219 |
| W S Central | 22,165 | 1,106 | 475 | 49 | 35 | 0 | 3,481 | 25,647 | 12,742 | 0 | 12,742 | 0 | 12,742 | 32,018 |
| West | 15,513 | 680 | 208 | 47 | 20 | 0 | 2,333 | 17,846 | 7,829 | 0 | 7,829 | 0 | 7,829 | 21,760 |
| Mountain | 7,919 | 328 | 50 | 23 | 9 | 0 | 1,076 | 8,996 | 3,758 | 0 | 3,758 | 0 | 3,758 | 10,874 |
| Pacific | 7,593 | 352 | 158 | 24 | 11 | 0 | 1,257 | 8,850 | 4,071 | 0 | 4,071 | 0 | 4,071 | 10,886 |
| US Total | 88,674 | 4,388 | 2,257 | 297 | 123 | 0 | 15,845 | 104,519 | 50,777 | 53 | 50,830 | 0 | 50,830 | 129,934 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 19,196 | 583 | 1,209 | 202 | 32 | 0 | 5,620 | 24,816 | 21,809 | 4,857 | 26,667 | 123 | 26,790 | 38,211 |
| New England | 7,511 | 205 | 820 | 142 | 22 | 0 | 3,514 | 11,026 | 7,873 | 1,709 | 9,582 | 43 | 9,625 | 15,838 |
| Mid Atlantic | 11,685 | 379 | 389 | 60 | 10 | 0 | 2,106 | 13,790 | 13,937 | 3,148 | 17,085 | 80 | 17,164 | 22,373 |
| Midwest | 24,779 | 807 | 1,589 | 282 | 38 | 0 | 7,730 | 32,509 | 30,184 | 6,707 | 36,891 | 170 | 37,062 | 51,040 |
| E N Central | 14,728 | 474 | 1,072 | 189 | 27 | 0 | 5,061 | 19,789 | 17,136 | 3,929 | 21,065 | 100 | 21,165 | 30,371 |
| W N Central | 10,051 | 333 | 517 | 93 | 11 | 0 | 2,670 | 12,721 | 13,048 | 2,779 | 15,826 | 70 | 15,897 | 20,669 |
| South | 50,783 | 1,653 | 3,264 | 552 | 80 | 0 | 15,445 | 66,228 | 61,850 | 13,747 | 75,597 | 349 | 75,946 | 104,201 |
| South Atlantic | 31,409 | 995 | 2,193 | 384 | 51 | 0 | 10,350 | 41,759 | 36,796 | 8,275 | 45,071 | 210 | 45,281 | 64,399 |
| E S Central | 4,438 | 154 | 287 | 46 | 8 | 0 | 1,333 | 5,771 | 6,274 | 1,276 | 7,550 | 32 | 7,583 | 9,562 |
| W S Central | 14,936 | 504 | 784 | 122 | 21 | 0 | 3,762 | 18,699 | 18,780 | 4,195 | 22,976 | 106 | 23,082 | 30,240 |
| West | 17,778 | 591 | 735 | 107 | 17 | 0 | 3,637 | 21,416 | 22,152 | 4,938 | 27,089 | 125 | 27,214 | 35,023 |
| Mountain | 5,402 | 184 | 331 | 51 | 7 | 0 | 1,516 | 6,918 | 7,031 | 1,531 | 8,562 | 39 | 8,601 | 11,219 |
| Pacific | 12,376 | 407 | 404 | 56 | 10 | 0 | 2,121 | 14,497 | 15,121 | 3,406 | 18,527 | 86 | 18,613 | 23,803 |
| US Total | 112,537 | 3,634 | 6,797 | 1,143 | 167 | 0 | 32,433 | 144,970 | 135,995 | 30,249 | 166,244 | 767 | 167,011 | 228,475 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 6,300 | 224 | 2,342 | 24 | 20 | 0 | 3,179 | 9,480 | 7,267 | 105 | 7,372 | 245 | 7,617 | 13,289 |
| New England | 2,124 | 68 | 1,020 | 8 | 9 | 0 | 1,289 | 3,413 | 2,408 | 43 | 2,451 | 219 | 2,669 | 4,747 |
| Mid Atlantic | 4,177 | 156 | 1,322 | 16 | 11 | 0 | 1,890 | 6,067 | 4,859 | 62 | 4,921 | 27 | 4,948 | 8,541 |
| Midwest | 8,676 | 310 | 3,088 | 26 | 32 | 0 | 4,134 | 12,810 | 9,356 | 241 | 9,597 | 0 | 9,597 | 17,609 |
| E N Central | 4,396 | 152 | 1,734 | 16 | 18 | 0 | 2,303 | 6,698 | 4,660 | 121 | 4,781 | 0 | 4,781 | 9,089 |
| W N Central | 4,280 | 158 | 1,354 | 10 | 14 | 0 | 1,831 | 6,112 | 4,696 | 120 | 4,816 | 0 | 4,816 | 8,520 |
| South | 24,334 | 922 | 10,471 | 64 | 122 | 0 | 13,406 | 37,740 | 26,906 | 473 | 27,380 | 419 | 27,799 | 51,639 |
| South Atlantic | 15,013 | 574 | 6,954 | 45 | 85 | 0 | 8,869 | 23,882 | 15,623 | 267 | 15,890 | 325 | 16,216 | 31,990 |
| E S Central | 3,716 | 136 | 988 | 5 | 7 | 0 | 1,339 | 5,054 | 4,736 | 102 | 4,838 | 3 | 4,840 | 7,474 |
| W S Central | 5,605 | 212 | 2,529 | 14 | 30 | 0 | 3,198 | 8,803 | 6,547 | 105 | 6,652 | 91 | 6,743 | 12,175 |
| West | 7,927 | 278 | 2,351 | 18 | 32 | 0 | 3,217 | 11,143 | 12,964 | 157 | 13,122 | 145 | 13,267 | 17,777 |
| Mountain | 2,755 | 106 | 794 | 8 | 13 | 0 | 1,141 | 3,896 | 6,398 | 82 | 6,481 | 83 | 6,564 | 7,178 |
| Pacific | 5,171 | 172 | 1,556 | 10 | 20 | 0 | 2,076 | 7,247 | 6,566 | 75 | 6,641 | 62 | 6,703 | 10,599 |
| US Total | 47,237 | 1,734 | 18,252 | 132 | 206 | 0 | 23,936 | 71,173 | 56,494 | 977 | 57,470 | 810 | 58,280 | 100,313 |

TABLE 4: SUMMARY OF ALL LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION FOR FRAMING, COLUMNS, STAIRS, SIDING, SOFFIT, FASCIA, EXTERIOR TRIM, SHEATHING & UNDERLAYMENT BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 1,512 | 0 | 1,128 | 6 | 2 | 0 | 1,220 | 2,732 | 3,019 | 0 | 3,019 | 0 | 3,019 | 4,241 |
| New England | 785 | 0 | 621 | 0 | 0 | 0 | 621 | 1,406 | 1,002 | 0 | 1,002 | 0 | 1,002 | 1,908 |
| Mid Atlantic | 727 | 0 | 506 | 6 | 2 | 0 | 599 | 1,325 | 2,016 | 0 | 2,016 | 0 | 2,016 | 2,334 |
| Midwest | 2,856 | 0 | 1,741 | 2 | 1 | 0 | 1,773 | 4,629 | 4,175 | 0 | 4,175 | 0 | 4,175 | 6,717 |
| E N Central | 1,054 | 0 | 1,117 | 0 | 0 | 0 | 1,118 | 2,172 | 1,915 | 0 | 1,915 | 0 | 1,915 | 3,129 |
| W N Central | 1,802 | 0 | 625 | 2 | 1 | 0 | 655 | 2,457 | 2,261 | 0 | 2,261 | 0 | 2,261 | 3,588 |
| South | 4,102 | 0 | 2,696 | 17 | 5 | 0 | 2,971 | 7,074 | 6,377 | 0 | 6,377 | 0 | 6,377 | 10,262 |
| South Atlantic | 1,730 | 0 | 1,589 | 6 | 2 | 0 | 1,683 | 3,413 | 2,436 | 0 | 2,436 | 0 | 2,436 | 4,631 |
| E S Central | 339 | 0 | 192 | 2 | 1 | 0 | 221 | 560 | 1,058 | 0 | 1,058 | 0 | 1,058 | 1,089 |
| W S Central | 2,033 | 0 | 915 | 9 | 3 | 0 | 1,068 | 3,100 | 2,883 | 0 | 2,883 | 0 | 2,883 | 4,542 |
| West | 3,089 | 0 | 2,719 | 0 | 0 | 0 | 2,721 | 5,810 | 4,554 | 0 | 4,554 | 0 | 4,554 | 8,087 |
| Mountain | 1,166 | 0 | 428 | 0 | 0 | 0 | 430 | 1,596 | 1,770 | 0 | 1,770 | 0 | 1,770 | 2,481 |
| Pacific | 1,923 | 0 | 2,291 | 0 | 0 | 0 | 2,292 | 4,215 | 2,784 | 0 | 2,784 | 0 | 2,784 | 5,607 |
| US Total | 11,559 | 0 | 8,284 | 25 | 8 | 0 | 8,686 | 20,245 | 18,124 | 0 | 18,124 | 0 | 18,124 | 29,308 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 2,862 | 388 | 1,298 | 30 | 20 | 0 | 2,556 | 5,418 | 3,033 | 0 | 3,033 | 0 | 3,033 | 6,935 |
| New England | 1,947 | 154 | 523 | 12 | 6 | 0 | 1,021 | 2,967 | 1,183 | 0 | 1,183 | 0 | 1,183 | 3,559 |
| Mid Atlantic | 915 | 234 | 775 | 18 | 13 | 0 | 1,536 | 2,451 | 1,851 | 0 | 1,851 | 0 | 1,851 | 3,376 |
| Midwest | 3,884 | 519 | 1,629 | 31 | 16 | 0 | 3,167 | 7,051 | 3,849 | 0 | 3,849 | 0 | 3,849 | 8,975 |
| E N Central | 1,745 | 226 | 709 | 13 | 9 | 0 | 1,371 | 3,116 | 1,647 | 0 | 1,647 | 0 | 1,647 | 3,939 |
| W N Central | 2,139 | 293 | 920 | 18 | 7 | 0 | 1,796 | 3,935 | 2,202 | 0 | 2,202 | 0 | 2,202 | 5,036 |
| South | 5,608 | 757 | 2,400 | 46 | 26 | 0 | 4,663 | 10,270 | 5,614 | 0 | 5,614 | 0 | 5,614 | 13,078 |
| South Atlantic | 1,862 | 237 | 782 | 16 | 15 | 0 | 1,525 | 3,386 | 1,782 | 0 | 1,782 | 0 | 1,782 | 4,277 |
| E S Central | 2,144 | 243 | 765 | 14 | 2 | 0 | 1,474 | 3,619 | 1,771 | 0 | 1,771 | 0 | 1,771 | 4,504 |
| W S Central | 1,602 | 277 | 853 | 16 | 9 | 0 | 1,663 | 3,265 | 2,062 | 0 | 2,062 | 0 | 2,062 | 4,296 |
| West | 2,419 | 703 | 2,043 | 37 | 50 | 0 | 4,074 | 6,493 | 5,435 | 0 | 5,435 | 0 | 5,435 | 9,210 |
| Mountain | 361 | 38 | 125 | 3 | 3 | 0 | 242 | 603 | 277 | 0 | 277 | 0 | 277 | 742 |
| Pacific | 2,057 | 666 | 1,918 | 35 | 47 | 0 | 3,832 | 5,889 | 5,158 | 0 | 5,158 | 0 | 5,158 | 8,468 |
| US Total | 14,772 | 2,367 | 7,370 | 144 | 111 | 0 | 14,460 | 29,232 | 17,932 | 0 | 17,932 | 0 | 17,932 | 38,198 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 108,719 | 3,483 | 12,572 | 1,345 | 250 | 0 | 41,175 | 149,894 | 113,095 | 13,693 | 126,788 | 2,976 | 129,764 | 214,776 |
| New England | 41,059 | 1,050 | 5,366 | 646 | 99 | 0 | 17,860 | 58,918 | 38,762 | 3,144 | 41,906 | 1,243 | 43,149 | 80,493 |
| Mid Atlantic | 67,660 | 2,432 | 7,206 | 698 | 151 | 0 | 23,315 | 90,976 | 74,333 | 10,549 | 84,881 | 1,733 | 86,614 | 134,283 |
| Midwest | 126,683 | 5,727 | 16,663 | 1,747 | 316 | 0 | 56,221 | 182,904 | 132,212 | 12,157 | 144,369 | 4,718 | 149,087 | 257,447 |
| E N Central | 73,317 | 2,900 | 11,204 | 1,160 | 206 | 0 | 35,670 | 108,986 | 75,335 | 7,982 | 83,317 | 3,247 | 86,564 | 152,268 |
| W N Central | 53,367 | 2,827 | 5,459 | 586 | 110 | 0 | 20,551 | 73,918 | 56,877 | 4,175 | 61,052 | 1,470 | 62,522 | 105,179 |
| South | 284,991 | 12,556 | 25,627 | 2,226 | 543 | 0 | 86,628 | 371,619 | 285,024 | 25,532 | 310,557 | 8,446 | 319,002 | 531,120 |
| South Atlantic | 149,584 | 5,980 | 15,071 | 1,256 | 302 | 0 | 47,272 | 196,856 | 156,188 | 14,797 | 170,984 | 3,542 | 174,526 | 284,119 |
| E S Central | 40,034 | 1,928 | 3,734 | 328 | 71 | 0 | 12,875 | 52,910 | 40,742 | 3,599 | 44,341 | 1,351 | 45,691 | 75,755 |
| W S Central | 95,373 | 4,648 | 6,822 | 642 | 170 | 0 | 26,481 | 121,854 | 88,095 | 7,137 | 95,231 | 3,554 | 98,785 | 171,246 |
| West | 106,361 | 5,169 | 12,220 | 931 | 255 | 5 | 37,665 | 144,026 | 120,784 | 9,377 | 130,161 | 3,329 | 133,490 | 210,771 |
| Mountain | 37,195 | 1,836 | 2,350 | 295 | 75 | 5 | 10,852 | 48,047 | 40,293 | 2,997 | 43,290 | 1,176 | 44,466 | 70,280 |
| Pacific | 69,166 | 3,334 | 9,870 | 637 | 180 | 0 | 26,814 | 95,980 | 80,491 | 6,380 | 86,871 | 2,153 | 89,024 | 140,492 |
| US Total | 626,755 | 26,935 | 67,082 | 6,249 | 1,364 | 5 | 221,689 | 848,443 | 651,115 | 60,759 | 711,874 | 19,468 | 731,343 | 1,214,114 |

[1]Includes framing lumber, boards, wood trusses, shakes, shingles and siding.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

TABLE 5: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FLOOR FRAMING, FLOOR SHEATHING & UNDERLAYMENT IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 416 | 0 | 1,949 | 110 | 34 | 0 | 3,733 | 4,149 | 52 | 0 | 52 | 0 | 52 | 4,175 |
| New England | 250 | 0 | 1,829 | 104 | 32 | 0 | 3,504 | 3,754 | 41 | 0 | 41 | 0 | 41 | 3,774 |
| Mid Atlantic | 166 | 0 | 120 | 7 | 2 | 0 | 229 | 395 | 11 | 0 | 11 | 0 | 11 | 401 |
| Midwest | 506 | 0 | 183 | 10 | 3 | 0 | 350 | 856 | 8 | 0 | 8 | 0 | 8 | 860 |
| E N Central | 307 | 0 | 133 | 8 | 2 | 0 | 255 | 562 | 5 | 0 | 5 | 0 | 5 | 565 |
| W N Central | 198 | 0 | 50 | 3 | 1 | 0 | 96 | 294 | 3 | 0 | 3 | 0 | 3 | 296 |
| South | 863 | 0 | 512 | 29 | 9 | 0 | 981 | 1,844 | 75 | 0 | 75 | 0 | 75 | 1,881 |
| South Atlantic | 556 | 0 | 487 | 28 | 8 | 0 | 933 | 1,489 | 68 | 0 | 68 | 0 | 68 | 1,523 |
| E S Central | 80 | 0 | 9 | 1 | 0 | 0 | 17 | 97 | 1 | 0 | 1 | 0 | 1 | 97 |
| W S Central | 228 | 0 | 16 | 1 | 0 | 0 | 30 | 258 | 6 | 0 | 6 | 0 | 6 | 261 |
| West | 412 | 0 | 296 | 17 | 5 | 0 | 568 | 980 | 13 | 0 | 13 | 0 | 13 | 986 |
| Mountain | 135 | 0 | 54 | 3 | 1 | 0 | 103 | 238 | 2 | 0 | 2 | 0 | 2 | 239 |
| Pacific | 277 | 0 | 243 | 14 | 4 | 0 | 465 | 742 | 10 | 0 | 10 | 0 | 10 | 747 |
| US Total | 2,197 | 0 | 2,940 | 167 | 51 | 0 | 5,632 | 7,829 | 148 | 0 | 148 | 0 | 148 | 7,903 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 902 | 3 | 0 | 0 | 0 | 0 | 5 | 908 | 12 | 0 | 12 | 0 | 12 | 914 |
| New England | 855 | 2 | 0 | 0 | 0 | 0 | 5 | 859 | 11 | 0 | 11 | 0 | 11 | 865 |
| Mid Atlantic | 48 | 0 | 0 | 0 | 0 | 0 | 1 | 48 | 1 | 0 | 1 | 0 | 1 | 49 |
| Midwest | 223 | 1 | 0 | 0 | 0 | 0 | 1 | 225 | 3 | 0 | 3 | 0 | 3 | 226 |
| E N Central | 130 | 1 | 0 | 0 | 0 | 0 | 1 | 131 | 3 | 0 | 3 | 0 | 3 | 133 |
| W N Central | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 93 |
| South | 442 | 8 | 0 | 0 | 0 | 0 | 16 | 458 | 36 | 0 | 36 | 0 | 36 | 476 |
| South Atlantic | 274 | 4 | 0 | 0 | 0 | 0 | 9 | 283 | 20 | 0 | 20 | 0 | 20 | 292 |
| E S Central | 73 | 2 | 0 | 0 | 0 | 0 | 5 | 78 | 11 | 0 | 11 | 0 | 11 | 84 |
| W S Central | 95 | 1 | 0 | 0 | 0 | 0 | 2 | 98 | 5 | 0 | 5 | 0 | 5 | 100 |
| West | 162 | 0 | 0 | 0 | 0 | 0 | 1 | 163 | 2 | 0 | 2 | 0 | 2 | 164 |
| Mountain | 30 | 0 | 0 | 0 | 0 | 0 | 1 | 31 | 1 | 0 | 1 | 0 | 1 | 31 |
| Pacific | 132 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 1 | 0 | 1 | 132 |
| US Total | 1,730 | 12 | 0 | 0 | 0 | 0 | 24 | 1,753 | 53 | 0 | 53 | 0 | 53 | 1,780 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 1,437 | 31 | 0 | 43 | 5 | 0 | 756 | 2,193 | 345 | 0 | 345 | 0 | 345 | 2,365 |
| New England | 437 | 5 | 0 | 12 | 1 | 0 | 199 | 636 | 157 | 0 | 157 | 0 | 157 | 714 |
| Mid Atlantic | 1,000 | 27 | 0 | 31 | 4 | 0 | 557 | 1,557 | 189 | 0 | 189 | 0 | 189 | 1,652 |
| Midwest | 508 | 14 | 0 | 91 | 11 | 0 | 1,481 | 1,988 | 218 | 0 | 218 | 0 | 218 | 2,097 |
| E N Central | 401 | 11 | 0 | 56 | 7 | 0 | 918 | 1,319 | 141 | 0 | 141 | 0 | 141 | 1,389 |
| W N Central | 107 | 3 | 0 | 35 | 4 | 0 | 563 | 669 | 78 | 0 | 78 | 0 | 78 | 708 |
| South | 1,410 | 38 | 0 | 36 | 4 | 0 | 658 | 2,068 | 509 | 0 | 509 | 0 | 509 | 2,322 |
| South Atlantic | 809 | 22 | 0 | 21 | 3 | 0 | 386 | 1,195 | 366 | 0 | 366 | 0 | 366 | 1,378 |
| E S Central | 291 | 8 | 0 | 1 | 0 | 0 | 26 | 317 | 23 | 0 | 23 | 0 | 23 | 328 |
| W S Central | 310 | 8 | 0 | 14 | 2 | 0 | 246 | 556 | 120 | 0 | 120 | 0 | 120 | 616 |
| West | 520 | 14 | 0 | 77 | 9 | 0 | 1,263 | 1,783 | 205 | 0 | 205 | 0 | 205 | 1,886 |
| Mountain | 170 | 5 | 0 | 66 | 8 | 0 | 1,076 | 1,246 | 129 | 0 | 129 | 0 | 129 | 1,311 |
| Pacific | 350 | 9 | 0 | 11 | 1 | 0 | 188 | 537 | 76 | 0 | 76 | 0 | 76 | 575 |
| US Total | 3,874 | 96 | 0 | 247 | 30 | 0 | 4,158 | 8,032 | 1,278 | 0 | 1,278 | 0 | 1,278 | 8,671 |

**Table 5: Lumber, Engineered Wood, & Wood Panels Used in Floor Framing, Floor Sheathing & Underlayment by Building Type & Geography**

TABLE 5: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FLOOR FRAMING, FLOOR SHEATHING & UNDERLAYMENT IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 1,794 | 393 | 0 | 55 | 7 | 0 | 1,672 | 3,466 | 2,711 | 0 | 2,711 | 0 | 2,711 | 4,821 |
| New England | 744 | 69 | 0 | 0 | 0 | 0 | 138 | 882 | 477 | 0 | 477 | 0 | 477 | 1,121 |
| Mid Atlantic | 1,049 | 324 | 0 | 55 | 7 | 0 | 1,534 | 2,583 | 2,234 | 0 | 2,234 | 0 | 2,234 | 3,700 |
| Midwest | 2,643 | 728 | 0 | 232 | 28 | 0 | 5,175 | 7,818 | 5,028 | 0 | 5,028 | 0 | 5,028 | 10,332 |
| E N Central | 1,057 | 247 | 0 | 112 | 13 | 0 | 2,299 | 3,356 | 1,707 | 0 | 1,707 | 0 | 1,707 | 4,209 |
| W N Central | 1,586 | 481 | 0 | 119 | 14 | 0 | 2,876 | 4,462 | 3,321 | 0 | 3,321 | 0 | 3,321 | 6,123 |
| South | 5,651 | 1,707 | 0 | 165 | 20 | 0 | 6,068 | 11,719 | 11,787 | 0 | 11,787 | 0 | 11,787 | 17,612 |
| South Atlantic | 2,974 | 863 | 0 | 44 | 5 | 0 | 2,432 | 5,406 | 5,958 | 0 | 5,958 | 0 | 5,958 | 8,385 |
| E S Central | 877 | 286 | 0 | 18 | 2 | 0 | 864 | 1,741 | 1,976 | 0 | 1,976 | 0 | 1,976 | 2,729 |
| W S Central | 1,800 | 558 | 0 | 103 | 12 | 0 | 2,772 | 4,573 | 3,853 | 0 | 3,853 | 0 | 3,853 | 6,499 |
| West | 2,393 | 689 | 0 | 62 | 7 | 0 | 2,377 | 4,769 | 4,760 | 0 | 4,760 | 0 | 4,760 | 7,150 |
| Mountain | 966 | 267 | 0 | 29 | 3 | 0 | 992 | 1,958 | 1,840 | 0 | 1,840 | 0 | 1,840 | 2,879 |
| Pacific | 1,426 | 423 | 0 | 34 | 4 | 0 | 1,385 | 2,811 | 2,920 | 0 | 2,920 | 0 | 2,920 | 4,271 |
| US Total | 12,481 | 3,517 | 0 | 514 | 62 | 0 | 15,291 | 27,772 | 24,286 | 0 | 24,286 | 0 | 24,286 | 39,915 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 406 | 764 | 3,876 | 312 | 66 | 0 | 10,427 | 10,834 | 645 | 16 | 661 | 2,569 | 3,230 | 12,449 |
| New England | 170 | 283 | 338 | 27 | 6 | 0 | 1,341 | 1,510 | 263 | 6 | 269 | 967 | 1,236 | 2,128 |
| Mid Atlantic | 236 | 481 | 3,539 | 285 | 61 | 0 | 9,087 | 9,323 | 382 | 9 | 392 | 1,602 | 1,994 | 10,320 |
| Midwest | 632 | 1,288 | 6,859 | 552 | 118 | 0 | 18,325 | 18,957 | 863 | 21 | 883 | 4,516 | 5,399 | 21,656 |
| E N Central | 419 | 854 | 5,559 | 447 | 95 | 0 | 14,471 | 14,890 | 648 | 16 | 663 | 3,128 | 3,792 | 16,786 |
| W N Central | 213 | 434 | 1,301 | 105 | 22 | 0 | 3,854 | 4,067 | 215 | 5 | 220 | 1,387 | 1,608 | 4,871 |
| South | 1,114 | 2,273 | 3,711 | 299 | 64 | 0 | 13,064 | 14,178 | 1,113 | 27 | 1,140 | 7,608 | 8,748 | 18,552 |
| South Atlantic | 455 | 929 | 2,052 | 165 | 35 | 0 | 6,570 | 7,025 | 528 | 13 | 541 | 2,971 | 3,512 | 8,781 |
| E S Central | 148 | 301 | 917 | 74 | 16 | 0 | 2,705 | 2,854 | 168 | 4 | 172 | 1,303 | 1,475 | 3,591 |
| W S Central | 511 | 1,043 | 742 | 60 | 13 | 0 | 3,789 | 4,300 | 417 | 10 | 427 | 3,334 | 3,761 | 6,180 |
| West | 463 | 923 | 2,970 | 239 | 51 | 2 | 8,689 | 9,153 | 493 | 12 | 505 | 3,026 | 3,531 | 10,918 |
| Mountain | 161 | 304 | 289 | 23 | 5 | 2 | 1,297 | 1,458 | 102 | 2 | 105 | 1,048 | 1,152 | 2,034 |
| Pacific | 303 | 619 | 2,681 | 216 | 46 | 0 | 7,392 | 7,695 | 391 | 9 | 400 | 1,978 | 2,378 | 8,884 |
| US Total | 2,615 | 5,248 | 17,416 | 1,401 | 299 | 2 | 50,506 | 53,121 | 3,114 | 75 | 3,189 | 17,719 | 20,908 | 63,575 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 5,516 | 26 | 35 | 201 | 24 | 0 | 3,315 | 8,831 | 2,205 | 0 | 2,205 | 37 | 2,242 | 9,952 |
| New England | 3,603 | 10 | 24 | 138 | 17 | 0 | 2,263 | 5,866 | 1,099 | 0 | 1,099 | 14 | 1,113 | 6,422 |
| Mid Atlantic | 1,913 | 16 | 11 | 63 | 8 | 0 | 1,052 | 2,965 | 1,106 | 0 | 1,106 | 23 | 1,129 | 3,530 |
| Midwest | 2,528 | 21 | 10 | 57 | 7 | 0 | 968 | 3,496 | 2,109 | 0 | 2,109 | 30 | 2,139 | 4,565 |
| E N Central | 1,530 | 13 | 7 | 37 | 5 | 0 | 630 | 2,159 | 1,671 | 0 | 1,671 | 18 | 1,690 | 3,004 |
| W N Central | 998 | 8 | 3 | 20 | 2 | 0 | 338 | 1,336 | 438 | 0 | 438 | 12 | 450 | 1,561 |
| South | 5,570 | 47 | 46 | 263 | 32 | 0 | 4,359 | 9,929 | 4,936 | 0 | 4,936 | 67 | 5,002 | 12,431 |
| South Atlantic | 2,808 | 24 | 20 | 114 | 14 | 0 | 1,894 | 4,702 | 2,775 | 0 | 2,775 | 34 | 2,809 | 6,107 |
| E S Central | 948 | 8 | 14 | 77 | 9 | 0 | 1,267 | 2,215 | 790 | 0 | 790 | 11 | 801 | 2,616 |
| W S Central | 1,814 | 15 | 13 | 72 | 9 | 0 | 1,198 | 3,012 | 1,371 | 0 | 1,371 | 22 | 1,392 | 3,708 |
| West | 2,728 | 23 | 12 | 68 | 8 | 0 | 1,153 | 3,882 | 1,521 | 0 | 1,521 | 33 | 1,554 | 4,659 |
| Mountain | 519 | 4 | 2 | 12 | 1 | 0 | 197 | 716 | 259 | 0 | 259 | 6 | 265 | 848 |
| Pacific | 2,210 | 19 | 10 | 57 | 7 | 0 | 957 | 3,166 | 1,262 | 0 | 1,262 | 26 | 1,288 | 3,810 |
| US Total | 16,342 | 118 | 104 | 589 | 71 | 0 | 9,796 | 26,138 | 10,771 | 0 | 10,771 | 166 | 10,937 | 31,607 |

TABLE 5: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FLOOR FRAMING, FLOOR SHEATHING & UNDERLAYMENT IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 608 | 28 | 227 | 23 | 4 | 0 | 646 | 1,254 | 434 | 0 | 434 | 0 | 434 | 1,471 |
| New England | 370 | 2 | 10 | 1 | 0 | 0 | 29 | 399 | 31 | 0 | 31 | 0 | 31 | 414 |
| Mid Atlantic | 238 | 26 | 217 | 22 | 4 | 0 | 617 | 855 | 403 | 0 | 403 | 0 | 403 | 1,057 |
| Midwest | 449 | 36 | 159 | 16 | 3 | 0 | 485 | 934 | 553 | 0 | 553 | 0 | 553 | 1,211 |
| E N Central | 195 | 16 | 73 | 7 | 1 | 0 | 222 | 417 | 251 | 0 | 251 | 0 | 251 | 543 |
| W N Central | 254 | 20 | 86 | 9 | 2 | 0 | 263 | 517 | 302 | 0 | 302 | 0 | 302 | 668 |
| South | 1,381 | 105 | 242 | 24 | 5 | 0 | 840 | 2,221 | 1,612 | 0 | 1,612 | 0 | 1,612 | 3,027 |
| South Atlantic | 620 | 54 | 113 | 11 | 2 | 0 | 402 | 1,021 | 833 | 0 | 833 | 0 | 833 | 1,438 |
| E S Central | 224 | 18 | 87 | 9 | 2 | 0 | 262 | 486 | 270 | 0 | 270 | 0 | 270 | 622 |
| W S Central | 538 | 33 | 42 | 4 | 1 | 0 | 176 | 713 | 509 | 0 | 509 | 0 | 509 | 968 |
| West | 324 | 19 | 0 | 0 | 0 | 0 | 38 | 362 | 293 | 0 | 293 | 0 | 293 | 508 |
| Mountain | 126 | 3 | 0 | 0 | 0 | 0 | 7 | 133 | 52 | 0 | 52 | 0 | 52 | 159 |
| Pacific | 197 | 16 | 0 | 0 | 0 | 0 | 31 | 229 | 240 | 0 | 240 | 0 | 240 | 349 |
| US Total | 2,762 | 188 | 628 | 62 | 12 | 0 | 2,009 | 4,771 | 2,891 | 0 | 2,891 | 0 | 2,891 | 6,217 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 3,273 | 529 | 932 | 167 | 27 | 0 | 4,669 | 7,941 | 1,716 | 43 | 1,759 | 123 | 1,882 | 8,882 |
| New England | 1,624 | 186 | 696 | 124 | 20 | 0 | 3,068 | 4,692 | 809 | 20 | 829 | 43 | 872 | 5,128 |
| Mid Atlantic | 1,649 | 343 | 236 | 42 | 7 | 0 | 1,601 | 3,250 | 907 | 23 | 930 | 80 | 1,010 | 3,755 |
| Midwest | 3,514 | 732 | 1,106 | 198 | 32 | 0 | 5,751 | 9,265 | 1,192 | 30 | 1,222 | 170 | 1,392 | 9,961 |
| E N Central | 2,064 | 430 | 811 | 145 | 23 | 0 | 4,001 | 6,065 | 652 | 16 | 668 | 100 | 768 | 6,449 |
| W N Central | 1,450 | 302 | 296 | 53 | 9 | 0 | 1,750 | 3,200 | 541 | 13 | 554 | 70 | 625 | 3,512 |
| South | 7,197 | 1,499 | 2,385 | 426 | 69 | 0 | 12,241 | 19,438 | 4,108 | 102 | 4,210 | 349 | 4,559 | 21,718 |
| South Atlantic | 4,334 | 903 | 1,601 | 286 | 46 | 0 | 8,011 | 12,345 | 2,396 | 60 | 2,455 | 210 | 2,665 | 13,677 |
| E S Central | 669 | 139 | 224 | 40 | 6 | 0 | 1,145 | 1,814 | 341 | 8 | 349 | 32 | 382 | 2,005 |
| W S Central | 2,194 | 457 | 560 | 100 | 16 | 0 | 3,085 | 5,279 | 1,371 | 34 | 1,406 | 106 | 1,512 | 6,035 |
| West | 2,575 | 536 | 388 | 69 | 11 | 0 | 2,577 | 5,152 | 1,649 | 41 | 1,690 | 125 | 1,815 | 6,060 |
| Mountain | 803 | 167 | 193 | 34 | 6 | 0 | 1,081 | 1,884 | 334 | 8 | 343 | 39 | 381 | 2,075 |
| Pacific | 1,772 | 369 | 196 | 35 | 6 | 0 | 1,496 | 3,268 | 1,315 | 33 | 1,347 | 86 | 1,433 | 3,985 |
| US Total | 16,559 | 3,296 | 4,812 | 860 | 139 | 0 | 25,238 | 41,797 | 8,665 | 216 | 8,881 | 767 | 9,648 | 46,621 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 240 | 26 | 1,133 | 4 | 9 | 0 | 1,260 | 1,500 | 113 | 10 | 123 | 245 | 368 | 1,684 |
| New England | 143 | 8 | 656 | 3 | 5 | 0 | 715 | 858 | 54 | 5 | 59 | 219 | 277 | 997 |
| Mid Atlantic | 97 | 18 | 477 | 2 | 4 | 0 | 545 | 642 | 59 | 5 | 64 | 27 | 91 | 687 |
| Midwest | 193 | 36 | 1,364 | 5 | 11 | 0 | 1,527 | 1,720 | 167 | 15 | 181 | 0 | 181 | 1,810 |
| E N Central | 95 | 18 | 906 | 4 | 7 | 0 | 1,002 | 1,096 | 116 | 10 | 126 | 0 | 126 | 1,159 |
| W N Central | 98 | 19 | 458 | 2 | 4 | 0 | 525 | 623 | 51 | 4 | 56 | 0 | 56 | 651 |
| South | 574 | 108 | 5,337 | 21 | 43 | 0 | 5,907 | 6,481 | 761 | 67 | 828 | 419 | 1,247 | 7,105 |
| South Atlantic | 358 | 67 | 3,862 | 15 | 31 | 0 | 4,253 | 4,610 | 635 | 56 | 691 | 325 | 1,016 | 5,118 |
| E S Central | 85 | 16 | 98 | 0 | 1 | 0 | 137 | 221 | 36 | 3 | 39 | 3 | 42 | 242 |
| W S Central | 132 | 25 | 1,377 | 5 | 11 | 0 | 1,518 | 1,650 | 91 | 8 | 99 | 91 | 189 | 1,744 |
| West | 173 | 33 | 753 | 3 | 6 | 0 | 869 | 1,042 | 105 | 9 | 114 | 145 | 259 | 1,172 |
| Mountain | 66 | 13 | 160 | 1 | 1 | 0 | 195 | 262 | 25 | 2 | 28 | 83 | 111 | 317 |
| Pacific | 107 | 20 | 593 | 2 | 5 | 0 | 673 | 780 | 80 | 7 | 87 | 62 | 149 | 854 |
| US Total | 1,181 | 204 | 8,587 | 33 | 68 | 0 | 9,562 | 10,743 | 1,146 | 101 | 1,247 | 810 | 2,056 | 11,771 |

TABLE 5: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FLOOR FRAMING, FLOOR SHEATHING & UNDERLAYMENT IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 40 | 0 | 101 | 6 | 2 | 0 | 193 | 234 | 0 | 0 | 0 | 0 | 0 | 234 |
| New England | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| Mid Atlantic | 27 | 0 | 101 | 6 | 2 | 0 | 193 | 220 | 0 | 0 | 0 | 0 | 0 | 220 |
| Midwest | 56 | 0 | 33 | 2 | 1 | 0 | 63 | 119 | 0 | 0 | 0 | 0 | 0 | 119 |
| E N Central | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 26 |
| W N Central | 30 | 0 | 33 | 2 | 1 | 0 | 63 | 93 | 0 | 0 | 0 | 0 | 0 | 93 |
| South | 79 | 0 | 300 | 17 | 5 | 0 | 574 | 653 | 0 | 0 | 0 | 0 | 0 | 653 |
| South Atlantic | 30 | 0 | 102 | 6 | 2 | 0 | 196 | 225 | 0 | 0 | 0 | 0 | 0 | 225 |
| E S Central | 12 | 0 | 31 | 2 | 1 | 0 | 60 | 72 | 0 | 0 | 0 | 0 | 0 | 72 |
| W S Central | 37 | 0 | 167 | 9 | 3 | 0 | 319 | 356 | 0 | 0 | 0 | 0 | 0 | 356 |
| West | 54 | 0 | 3 | 0 | 0 | 0 | 6 | 60 | 0 | 0 | 0 | 0 | 0 | 60 |
| Mountain | 18 | 0 | 2 | 0 | 0 | 0 | 4 | 22 | 0 | 0 | 0 | 0 | 0 | 22 |
| Pacific | 36 | 0 | 1 | 0 | 0 | 0 | 2 | 38 | 0 | 0 | 0 | 0 | 0 | 38 |
| US Total | 229 | 0 | 437 | 25 | 8 | 0 | 837 | 1,066 | 0 | 0 | 0 | 0 | 0 | 1,066 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 806 | 36 | 193 | 9 | 3 | 0 | 418 | 1,225 | 467 | 0 | 467 | 0 | 467 | 1,458 |
| New England | 726 | 10 | 69 | 3 | 1 | 0 | 143 | 869 | 122 | 0 | 122 | 0 | 122 | 930 |
| Mid Atlantic | 80 | 27 | 124 | 6 | 2 | 0 | 275 | 355 | 345 | 0 | 345 | 0 | 345 | 528 |
| Midwest | 165 | 13 | 41 | 2 | 1 | 0 | 100 | 265 | 172 | 0 | 172 | 0 | 172 | 351 |
| E N Central | 70 | 1 | 2 | 0 | 0 | 0 | 5 | 75 | 10 | 0 | 10 | 0 | 10 | 80 |
| W N Central | 95 | 13 | 39 | 2 | 1 | 0 | 95 | 190 | 162 | 0 | 162 | 0 | 162 | 271 |
| South | 241 | 19 | 81 | 4 | 1 | 0 | 185 | 425 | 248 | 0 | 248 | 0 | 248 | 549 |
| South Atlantic | 77 | 11 | 71 | 3 | 1 | 0 | 147 | 224 | 135 | 0 | 135 | 0 | 135 | 292 |
| E S Central | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 0 | 0 | 0 | 76 |
| W S Central | 88 | 9 | 11 | 1 | 0 | 0 | 37 | 125 | 113 | 0 | 113 | 0 | 113 | 182 |
| West | 234 | 57 | 13 | 1 | 0 | 0 | 138 | 372 | 735 | 0 | 735 | 0 | 735 | 740 |
| Mountain | 12 | 0 | 8 | 0 | 0 | 0 | 15 | 27 | 6 | 0 | 6 | 0 | 6 | 30 |
| Pacific | 223 | 57 | 5 | 0 | 0 | 0 | 123 | 346 | 729 | 0 | 729 | 0 | 729 | 710 |
| US Total | 1,446 | 127 | 328 | 16 | 4 | 0 | 841 | 2,287 | 1,623 | 0 | 1,623 | 0 | 1,623 | 3,099 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 15,438 | 1,836 | 8,446 | 930 | 181 | 0 | 27,096 | 42,534 | 8,700 | 68 | 8,768 | 2,974 | 11,743 | 48,405 |
| New England | 8,935 | 574 | 3,622 | 412 | 82 | 0 | 11,404 | 20,339 | 3,063 | 31 | 3,094 | 1,242 | 4,337 | 22,507 |
| Mid Atlantic | 6,503 | 1,263 | 4,824 | 518 | 99 | 0 | 15,692 | 22,195 | 5,637 | 37 | 5,674 | 1,732 | 7,406 | 25,898 |
| Midwest | 11,416 | 2,870 | 9,755 | 1,164 | 213 | 0 | 34,226 | 45,642 | 10,314 | 65 | 10,379 | 4,716 | 15,096 | 53,190 |
| E N Central | 6,294 | 1,591 | 7,490 | 816 | 154 | 0 | 23,804 | 30,097 | 5,203 | 42 | 5,245 | 3,247 | 8,492 | 34,344 |
| W N Central | 5,122 | 1,279 | 2,265 | 348 | 59 | 0 | 10,422 | 15,545 | 5,111 | 23 | 5,134 | 1,470 | 6,604 | 18,847 |
| South | 24,523 | 5,804 | 12,615 | 1,284 | 251 | 0 | 44,893 | 69,415 | 25,186 | 196 | 25,382 | 8,443 | 33,824 | 86,327 |
| South Atlantic | 13,293 | 2,877 | 8,309 | 694 | 147 | 0 | 25,233 | 38,525 | 13,715 | 128 | 13,843 | 3,540 | 17,383 | 47,217 |
| E S Central | 3,482 | 778 | 1,379 | 221 | 37 | 0 | 6,488 | 9,970 | 3,616 | 16 | 3,631 | 1,350 | 4,981 | 12,461 |
| W S Central | 7,748 | 2,149 | 2,927 | 370 | 67 | 0 | 13,172 | 20,920 | 7,855 | 52 | 7,907 | 3,553 | 11,460 | 26,649 |
| West | 10,039 | 2,295 | 4,436 | 536 | 98 | 2 | 17,679 | 27,718 | 9,776 | 62 | 9,838 | 3,328 | 13,166 | 34,301 |
| Mountain | 3,007 | 764 | 707 | 168 | 26 | 2 | 4,968 | 7,975 | 2,752 | 13 | 2,765 | 1,176 | 3,941 | 9,946 |
| Pacific | 7,032 | 1,532 | 3,729 | 368 | 73 | 0 | 12,711 | 19,743 | 7,024 | 49 | 7,073 | 2,152 | 9,225 | 24,356 |
| US Total | 61,416 | 12,806 | 35,252 | 3,915 | 744 | 2 | 123,893 | 185,310 | 53,976 | 391 | 54,367 | 19,461 | 73,829 | 222,224 |

[1]Includes framing lumber, boards, and wood trusses.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

TABLE 6: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN WALL FRAMING & WALL SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] Th. bf | I-Joist Th. lf | Glulam Th. bf | SCL[2] Th. cf | Rim Board[3] Th. ft² | CLT[4] Th. cf | Total[5] Th. bfe | TOTAL Th. bfe | Softwood Plywood Th. ft² | OSB Th. ft² | Total Th. ft² | Panels[6] Th. ft² | Total[7] Th. ft² | TOTAL Th. bfe |
| STORES | | | | | | | | | | | | | | |
| Northeast | 5,388 | na[8] | 8 | 6 | na | 0 | 107 | 5,495 | 5,263 | 0 | 5,263 | na | 5,263 | 8,126 |
| New England | 2,578 | na | 0 | 5 | na | 0 | 80 | 2,658 | 2,534 | 0 | 2,534 | na | 2,534 | 3,925 |
| Mid Atlantic | 2,811 | na | 8 | 1 | na | 0 | 27 | 2,837 | 2,728 | 0 | 2,728 | na | 2,728 | 4,201 |
| Midwest | 7,446 | na | 35 | 24 | na | 0 | 423 | 7,869 | 7,549 | 296 | 7,845 | na | 7,845 | 11,792 |
| E N Central | 4,576 | na | 35 | 23 | na | 0 | 411 | 4,987 | 4,576 | 67 | 4,643 | na | 4,643 | 7,308 |
| W N Central | 2,870 | na | 0 | 1 | na | 0 | 13 | 2,883 | 2,974 | 228 | 3,202 | na | 3,202 | 4,484 |
| South | 20,590 | na | 21 | 40 | na | 0 | 655 | 21,244 | 15,571 | 0 | 15,571 | na | 15,571 | 29,030 |
| South Atlantic | 13,017 | na | 21 | 13 | na | 0 | 228 | 13,245 | 9,477 | 0 | 9,477 | na | 9,477 | 17,984 |
| E S Central | 3,223 | na | 0 | 0 | na | 0 | 5 | 3,228 | 1,988 | 0 | 1,988 | na | 1,988 | 4,222 |
| W S Central | 4,350 | na | 0 | 26 | na | 0 | 421 | 4,771 | 4,107 | 0 | 4,107 | na | 4,107 | 6,824 |
| West | 6,155 | na | 341 | 9 | na | 0 | 483 | 6,638 | 6,100 | 56 | 6,156 | na | 6,156 | 9,716 |
| Mountain | 2,062 | na | 136 | 1 | na | 0 | 154 | 2,216 | 2,144 | 0 | 2,144 | na | 2,144 | 3,288 |
| Pacific | 4,093 | na | 206 | 8 | na | 0 | 329 | 4,422 | 3,956 | 56 | 4,011 | na | 4,011 | 6,428 |
| US Total | 39,579 | na | 405 | 79 | na | 0 | 1,668 | 41,247 | 34,484 | 351 | 34,835 | na | 34,835 | 58,664 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 115 | na | 0 | 4 | na | 0 | 58 | 173 | 234 | 0 | 234 | na | 234 | 290 |
| New England | 55 | na | 0 | 2 | na | 0 | 35 | 90 | 107 | 0 | 107 | na | 107 | 144 |
| Mid Atlantic | 60 | na | 0 | 1 | na | 0 | 23 | 83 | 127 | 0 | 127 | na | 127 | 146 |
| Midwest | 312 | na | 0 | 5 | na | 0 | 80 | 392 | 598 | 0 | 598 | na | 598 | 691 |
| E N Central | 179 | na | 0 | 3 | na | 0 | 47 | 226 | 347 | 0 | 347 | na | 347 | 399 |
| W N Central | 134 | na | 0 | 2 | na | 0 | 33 | 167 | 250 | 0 | 250 | na | 250 | 292 |
| South | 520 | na | 0 | 8 | na | 0 | 127 | 647 | 1,182 | 0 | 1,182 | na | 1,182 | 1,238 |
| South Atlantic | 330 | na | 0 | 5 | na | 0 | 77 | 407 | 731 | 0 | 731 | na | 731 | 772 |
| E S Central | 85 | na | 0 | 1 | na | 0 | 10 | 95 | 196 | 0 | 196 | na | 196 | 193 |
| W S Central | 105 | na | 0 | 3 | na | 0 | 40 | 145 | 255 | 0 | 255 | na | 255 | 272 |
| West | 192 | na | 0 | 4 | na | 0 | 60 | 252 | 433 | 0 | 433 | na | 433 | 469 |
| Mountain | 35 | na | 0 | 1 | na | 0 | 17 | 52 | 80 | 0 | 80 | na | 80 | 92 |
| Pacific | 157 | na | 0 | 3 | na | 0 | 43 | 200 | 353 | 0 | 353 | na | 353 | 376 |
| US Total | 1,139 | na | 0 | 20 | na | 0 | 325 | 1,464 | 2,447 | 0 | 2,447 | na | 2,447 | 2,688 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 9,246 | na | 72 | 7 | na | 0 | 178 | 9,424 | 5,252 | 8,296 | 13,548 | na | 13,548 | 16,198 |
| New England | 1,727 | na | 45 | 4 | na | 0 | 111 | 1,839 | 498 | 1,228 | 1,726 | na | 1,726 | 2,702 |
| Mid Atlantic | 7,519 | na | 27 | 2 | na | 0 | 67 | 7,586 | 4,754 | 7,067 | 11,821 | na | 11,821 | 13,496 |
| Midwest | 4,756 | na | 101 | 9 | na | 0 | 248 | 5,004 | 1,660 | 3,586 | 5,246 | na | 5,246 | 7,627 |
| E N Central | 3,467 | na | 51 | 5 | na | 0 | 125 | 3,592 | 1,339 | 2,832 | 4,172 | na | 4,172 | 5,678 |
| W N Central | 1,289 | na | 50 | 5 | na | 0 | 122 | 1,412 | 321 | 754 | 1,074 | na | 1,074 | 1,949 |
| South | 11,835 | na | 151 | 14 | na | 0 | 371 | 12,207 | 5,339 | 9,962 | 15,301 | na | 15,301 | 19,857 |
| South Atlantic | 6,840 | na | 94 | 9 | na | 0 | 232 | 7,072 | 3,195 | 5,718 | 8,913 | na | 8,913 | 11,528 |
| E S Central | 2,252 | na | 11 | 1 | na | 0 | 27 | 2,279 | 1,080 | 2,053 | 3,133 | na | 3,133 | 3,845 |
| W S Central | 2,743 | na | 46 | 4 | na | 0 | 113 | 2,856 | 1,064 | 2,191 | 3,255 | na | 3,255 | 4,484 |
| West | 4,496 | na | 67 | 6 | na | 0 | 165 | 4,661 | 1,817 | 3,673 | 5,489 | na | 5,489 | 7,406 |
| Mountain | 1,450 | na | 20 | 2 | na | 0 | 50 | 1,500 | 514 | 1,203 | 1,717 | na | 1,717 | 2,358 |
| Pacific | 3,045 | na | 47 | 4 | na | 0 | 116 | 3,161 | 1,302 | 2,470 | 3,773 | na | 3,773 | 5,047 |
| US Total | 30,333 | na | 391 | 36 | na | 0 | 963 | 31,296 | 14,068 | 25,517 | 39,585 | na | 39,585 | 51,089 |

**Table 6: Lumber, Engineered Wood, & Wood Panels Used in Wall Framing & Wall Sheathing by Building Type & Geography**

TABLE 6: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN WALL FRAMING & WALL SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 4,341 | na | 0 | 225 | na | 0 | 3,601 | 7,942 | 1,059 | 0 | 1,059 | na | 1,059 | 8,472 |
| New England | 2,735 | na | 0 | 164 | na | 0 | 2,620 | 5,355 | 209 | 0 | 209 | na | 209 | 5,460 |
| Mid Atlantic | 1,606 | na | 0 | 61 | na | 0 | 981 | 2,587 | 849 | 0 | 849 | na | 849 | 3,012 |
| Midwest | 5,742 | na | 0 | 261 | na | 0 | 4,170 | 9,912 | 2,178 | 0 | 2,178 | na | 2,178 | 11,001 |
| E N Central | 3,193 | na | 0 | 162 | na | 0 | 2,593 | 5,785 | 852 | 0 | 852 | na | 852 | 6,212 |
| W N Central | 2,549 | na | 0 | 99 | na | 0 | 1,577 | 4,126 | 1,326 | 0 | 1,326 | na | 1,326 | 4,789 |
| South | 9,148 | na | 0 | 349 | na | 0 | 5,590 | 14,738 | 4,831 | 0 | 4,831 | na | 4,831 | 17,154 |
| South Atlantic | 5,523 | na | 0 | 230 | na | 0 | 3,673 | 9,197 | 2,534 | 0 | 2,534 | na | 2,534 | 10,464 |
| E S Central | 1,008 | na | 0 | 29 | na | 0 | 468 | 1,476 | 728 | 0 | 728 | na | 728 | 1,840 |
| W S Central | 2,617 | na | 0 | 91 | na | 0 | 1,449 | 4,065 | 1,568 | 0 | 1,568 | na | 1,568 | 4,850 |
| West | 4,225 | na | 0 | 152 | na | 0 | 2,432 | 6,657 | 2,430 | 0 | 2,430 | na | 2,430 | 7,872 |
| Mountain | 1,704 | na | 0 | 47 | na | 0 | 750 | 2,455 | 1,280 | 0 | 1,280 | na | 1,280 | 3,095 |
| Pacific | 2,520 | na | 0 | 105 | na | 0 | 1,682 | 4,202 | 1,149 | 0 | 1,149 | na | 1,149 | 4,777 |
| US Total | 23,456 | na | 0 | 987 | na | 0 | 15,793 | 39,249 | 10,497 | 0 | 10,497 | na | 10,497 | 44,498 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 8,519 | na | 52 | 5 | na | 0 | 125 | 8,644 | 504 | 3 | 507 | na | 507 | 8,898 |
| New England | 2,917 | na | 1 | 1 | na | 0 | 9 | 2,926 | 187 | 3 | 190 | na | 190 | 3,021 |
| Mid Atlantic | 5,603 | na | 51 | 4 | na | 0 | 116 | 5,718 | 317 | 0 | 317 | na | 317 | 5,877 |
| Midwest | 13,400 | na | 497 | 15 | na | 0 | 744 | 14,144 | 850 | 552 | 1,402 | na | 1,402 | 14,845 |
| E N Central | 9,251 | na | 258 | 0 | na | 0 | 265 | 9,517 | 564 | 552 | 1,116 | na | 1,116 | 10,075 |
| W N Central | 4,148 | na | 239 | 15 | na | 0 | 479 | 4,627 | 286 | 0 | 286 | na | 286 | 4,770 |
| South | 24,426 | na | 141 | 29 | na | 0 | 599 | 25,025 | 1,499 | 87 | 1,586 | na | 1,586 | 25,817 |
| South Atlantic | 9,983 | na | 71 | 14 | na | 0 | 297 | 10,280 | 613 | 18 | 631 | na | 631 | 10,595 |
| E S Central | 3,024 | na | 0 | 7 | na | 0 | 105 | 3,129 | 198 | 0 | 198 | na | 198 | 3,228 |
| W S Central | 11,419 | na | 70 | 8 | na | 0 | 197 | 11,616 | 688 | 68 | 756 | na | 756 | 11,994 |
| West | 9,586 | na | 92 | 12 | na | 2 | 312 | 9,899 | 624 | 27 | 652 | na | 652 | 10,224 |
| Mountain | 3,631 | na | 0 | 4 | na | 2 | 91 | 3,722 | 216 | 0 | 216 | na | 216 | 3,831 |
| Pacific | 5,955 | na | 92 | 8 | na | 0 | 221 | 6,176 | 408 | 27 | 435 | na | 435 | 6,394 |
| US Total | 55,931 | na | 782 | 61 | na | 2 | 1,780 | 57,712 | 3,477 | 670 | 4,147 | na | 4,147 | 59,785 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 6,039 | na | 30 | 8 | na | 0 | 151 | 6,190 | 7,370 | 0 | 7,370 | na | 7,370 | 9,875 |
| New England | 2,569 | na | 19 | 5 | na | 0 | 95 | 2,664 | 2,772 | 0 | 2,772 | na | 2,772 | 4,050 |
| Mid Atlantic | 3,470 | na | 11 | 3 | na | 0 | 56 | 3,526 | 4,598 | 0 | 4,598 | na | 4,598 | 5,825 |
| Midwest | 5,473 | na | 36 | 9 | na | 0 | 183 | 5,656 | 6,076 | 0 | 6,076 | na | 6,076 | 8,694 |
| E N Central | 3,214 | na | 20 | 5 | na | 0 | 99 | 3,313 | 3,677 | 0 | 3,677 | na | 3,677 | 5,151 |
| W N Central | 2,259 | na | 17 | 4 | na | 0 | 85 | 2,344 | 2,399 | 0 | 2,399 | na | 2,399 | 3,543 |
| South | 10,350 | na | 41 | 10 | na | 0 | 206 | 10,556 | 13,388 | 0 | 13,388 | na | 13,388 | 17,250 |
| South Atlantic | 5,478 | na | 26 | 7 | na | 0 | 132 | 5,610 | 6,749 | 0 | 6,749 | na | 6,749 | 8,984 |
| E S Central | 1,634 | na | 4 | 1 | na | 0 | 21 | 1,656 | 2,279 | 0 | 2,279 | na | 2,279 | 2,795 |
| W S Central | 3,238 | na | 10 | 3 | na | 0 | 53 | 3,290 | 4,361 | 0 | 4,361 | na | 4,361 | 5,471 |
| West | 4,901 | na | 17 | 4 | na | 0 | 83 | 4,985 | 6,558 | 0 | 6,558 | na | 6,558 | 8,264 |
| Mountain | 1,012 | na | 5 | 1 | na | 0 | 26 | 1,038 | 1,247 | 0 | 1,247 | na | 1,247 | 1,662 |
| Pacific | 3,889 | na | 11 | 3 | na | 0 | 57 | 3,946 | 5,311 | 0 | 5,311 | na | 5,311 | 6,602 |
| US Total | 26,764 | na | 124 | 31 | na | 0 | 623 | 27,387 | 33,393 | 0 | 33,393 | na | 33,393 | 44,083 |

TABLE 6: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN WALL FRAMING & WALL SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 3,052 | na | 0 | 0 | na | 0 | 0 | 3,052 | 1,527 | 0 | 1,527 | na | 1,527 | 3,815 |
| New England | 2,084 | na | 0 | 0 | na | 0 | 0 | 2,084 | 296 | 0 | 296 | na | 296 | 2,232 |
| Mid Atlantic | 968 | na | 0 | 0 | na | 0 | 0 | 968 | 1,231 | 0 | 1,231 | na | 1,231 | 1,583 |
| Midwest | 4,129 | na | 158 | 51 | na | 0 | 970 | 5,099 | 3,307 | 53 | 3,360 | na | 3,360 | 6,779 |
| E N Central | 1,758 | na | 87 | 32 | na | 0 | 597 | 2,355 | 1,384 | 0 | 1,384 | na | 1,384 | 3,047 |
| W N Central | 2,371 | na | 71 | 19 | na | 0 | 373 | 2,744 | 1,922 | 53 | 1,975 | na | 1,975 | 3,732 |
| South | 11,722 | na | 712 | 102 | na | 0 | 2,350 | 14,073 | 10,589 | 0 | 10,589 | na | 10,589 | 19,367 |
| South Atlantic | 6,259 | na | 159 | 54 | na | 0 | 1,031 | 7,289 | 4,234 | 0 | 4,234 | na | 4,234 | 9,406 |
| E S Central | 1,063 | na | 287 | 14 | na | 0 | 509 | 1,573 | 1,679 | 0 | 1,679 | na | 1,679 | 2,412 |
| W S Central | 4,401 | na | 266 | 34 | na | 0 | 811 | 5,211 | 4,676 | 0 | 4,676 | na | 4,676 | 7,549 |
| West | 3,832 | na | 106 | 41 | na | 0 | 758 | 4,591 | 2,880 | 0 | 2,880 | na | 2,880 | 6,031 |
| Mountain | 1,818 | na | 0 | 20 | na | 0 | 314 | 2,132 | 1,416 | 0 | 1,416 | na | 1,416 | 2,840 |
| Pacific | 2,015 | na | 106 | 21 | na | 0 | 444 | 2,459 | 1,464 | 0 | 1,464 | na | 1,464 | 3,191 |
| US Total | 22,736 | na | 976 | 194 | na | 0 | 4,079 | 26,814 | 18,303 | 53 | 18,356 | na | 18,356 | 35,992 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 7,465 | na | 108 | 24 | na | 0 | 497 | 7,962 | 6,771 | 1,135 | 7,906 | na | 7,906 | 11,915 |
| New England | 2,941 | na | 65 | 14 | na | 0 | 288 | 3,229 | 2,376 | 398 | 2,774 | na | 2,774 | 4,616 |
| Mid Atlantic | 4,523 | na | 43 | 10 | na | 0 | 209 | 4,733 | 4,395 | 737 | 5,132 | na | 5,132 | 7,299 |
| Midwest | 9,496 | na | 246 | 69 | na | 0 | 1,348 | 10,844 | 9,368 | 1,587 | 10,955 | na | 10,955 | 16,321 |
| E N Central | 5,718 | na | 121 | 35 | na | 0 | 686 | 6,404 | 5,502 | 922 | 6,425 | na | 6,425 | 9,616 |
| W N Central | 3,778 | na | 125 | 34 | na | 0 | 662 | 4,440 | 3,866 | 665 | 4,530 | na | 4,530 | 6,705 |
| South | 19,488 | na | 399 | 95 | na | 0 | 1,921 | 21,409 | 19,186 | 3,218 | 22,404 | na | 22,404 | 32,611 |
| South Atlantic | 12,604 | na | 303 | 79 | na | 0 | 1,568 | 14,172 | 11,554 | 1,937 | 13,490 | na | 13,490 | 20,917 |
| E S Central | 1,528 | na | 19 | 3 | na | 0 | 68 | 1,596 | 1,783 | 299 | 2,082 | na | 2,082 | 2,637 |
| W S Central | 5,357 | na | 78 | 13 | na | 0 | 285 | 5,641 | 5,849 | 982 | 6,832 | na | 6,832 | 9,057 |
| West | 6,522 | na | 174 | 26 | na | 0 | 598 | 7,120 | 6,866 | 1,165 | 8,031 | na | 8,031 | 11,135 |
| Mountain | 1,889 | na | 84 | 13 | na | 0 | 289 | 2,179 | 2,142 | 359 | 2,501 | na | 2,501 | 3,429 |
| Pacific | 4,632 | na | 91 | 14 | na | 0 | 309 | 4,941 | 4,724 | 806 | 5,530 | na | 5,530 | 7,706 |
| US Total | 42,970 | na | 928 | 215 | na | 0 | 4,365 | 47,335 | 42,190 | 7,105 | 49,296 | na | 49,296 | 71,982 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 2,907 | na | 38 | 15 | na | 0 | 271 | 3,178 | 3,110 | 13 | 3,123 | na | 3,123 | 4,740 |
| New England | 1,030 | na | 10 | 4 | na | 0 | 75 | 1,105 | 1,171 | 13 | 1,185 | na | 1,185 | 1,697 |
| Mid Atlantic | 1,878 | na | 28 | 11 | na | 0 | 196 | 2,074 | 1,938 | 0 | 1,938 | na | 1,938 | 3,043 |
| Midwest | 4,082 | na | 98 | 14 | na | 0 | 317 | 4,399 | 3,766 | 112 | 3,879 | na | 3,879 | 6,338 |
| E N Central | 2,137 | na | 29 | 9 | na | 0 | 176 | 2,313 | 1,881 | 55 | 1,936 | na | 1,936 | 3,280 |
| W N Central | 1,945 | na | 69 | 5 | na | 0 | 141 | 2,087 | 1,886 | 57 | 1,943 | na | 1,943 | 3,058 |
| South | 10,808 | na | 297 | 24 | na | 0 | 680 | 11,488 | 9,637 | 68 | 9,704 | na | 9,704 | 16,340 |
| South Atlantic | 6,640 | na | 80 | 18 | na | 0 | 370 | 7,010 | 4,947 | 0 | 4,947 | na | 4,947 | 9,483 |
| E S Central | 1,686 | na | 176 | 1 | na | 0 | 198 | 1,883 | 1,942 | 49 | 1,991 | na | 1,991 | 2,879 |
| W S Central | 2,482 | na | 40 | 5 | na | 0 | 113 | 2,595 | 2,748 | 19 | 2,767 | na | 2,767 | 3,978 |
| West | 3,810 | na | 137 | 9 | na | 0 | 286 | 4,097 | 6,786 | 46 | 6,832 | na | 6,832 | 7,512 |
| Mountain | 1,179 | na | 77 | 5 | na | 0 | 157 | 1,337 | 3,989 | 41 | 4,030 | na | 4,030 | 3,352 |
| Pacific | 2,631 | na | 60 | 4 | na | 0 | 129 | 2,760 | 2,797 | 5 | 2,801 | na | 2,801 | 4,160 |
| US Total | 21,608 | na | 569 | 62 | na | 0 | 1,555 | 23,162 | 23,299 | 239 | 23,537 | na | 23,537 | 34,931 |

TABLE 6: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN WALL FRAMING & WALL SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 1,074 | na | 1,027 | 0 | na | 0 | 1,027 | 2,100 | 2,298 | 0 | 2,298 | na | 2,298 | 3,250 |
| New England | 639 | na | 621 | 0 | na | 0 | 621 | 1,260 | 764 | 0 | 764 | na | 764 | 1,642 |
| Mid Atlantic | 435 | na | 406 | 0 | na | 0 | 406 | 840 | 1,534 | 0 | 1,534 | na | 1,534 | 1,607 |
| Midwest | 2,238 | na | 1,707 | 0 | na | 0 | 1,707 | 3,945 | 3,171 | 0 | 3,171 | na | 3,171 | 5,530 |
| E N Central | 766 | na | 1,116 | 0 | na | 0 | 1,116 | 1,882 | 1,451 | 0 | 1,451 | na | 1,451 | 2,607 |
| W N Central | 1,471 | na | 592 | 0 | na | 0 | 592 | 2,063 | 1,720 | 0 | 1,720 | na | 1,720 | 2,923 |
| South | 3,210 | na | 2,396 | 0 | na | 0 | 2,396 | 5,606 | 4,683 | 0 | 4,683 | na | 4,683 | 7,948 |
| South Atlantic | 1,385 | na | 1,487 | 0 | na | 0 | 1,487 | 2,873 | 1,775 | 0 | 1,775 | na | 1,775 | 3,760 |
| E S Central | 199 | na | 161 | 0 | na | 0 | 161 | 360 | 758 | 0 | 758 | na | 758 | 739 |
| W S Central | 1,625 | na | 748 | 0 | na | 0 | 748 | 2,373 | 2,150 | 0 | 2,150 | na | 2,150 | 3,448 |
| West | 2,465 | na | 2,715 | 0 | na | 0 | 2,715 | 5,180 | 3,287 | 0 | 3,287 | na | 3,287 | 6,824 |
| Mountain | 949 | na | 426 | 0 | na | 0 | 426 | 1,375 | 1,198 | 0 | 1,198 | na | 1,198 | 1,974 |
| Pacific | 1,515 | na | 2,290 | 0 | na | 0 | 2,290 | 3,805 | 2,089 | 0 | 2,089 | na | 2,089 | 4,849 |
| US Total | 8,986 | na | 7,845 | 0 | na | 0 | 7,845 | 16,831 | 13,440 | 0 | 13,440 | na | 13,440 | 23,551 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 1,848 | na | 0 | 0 | na | 0 | 0 | 1,848 | 1,117 | 0 | 1,117 | na | 1,117 | 2,407 |
| New England | 1,134 | na | 0 | 0 | na | 0 | 0 | 1,134 | 465 | 0 | 465 | na | 465 | 1,366 |
| Mid Atlantic | 714 | na | 0 | 0 | na | 0 | 0 | 714 | 652 | 0 | 652 | na | 652 | 1,040 |
| Midwest | 3,412 | na | 0 | 0 | na | 0 | 0 | 3,412 | 1,593 | 0 | 1,593 | na | 1,593 | 4,209 |
| E N Central | 1,539 | na | 0 | 0 | na | 0 | 0 | 1,539 | 709 | 0 | 709 | na | 709 | 1,894 |
| W N Central | 1,873 | na | 0 | 0 | na | 0 | 0 | 1,873 | 884 | 0 | 884 | na | 884 | 2,315 |
| South | 4,908 | na | 0 | 0 | na | 0 | 0 | 4,908 | 2,325 | 0 | 2,325 | na | 2,325 | 6,070 |
| South Atlantic | 1,647 | na | 0 | 0 | na | 0 | 0 | 1,647 | 713 | 0 | 713 | na | 713 | 2,004 |
| E S Central | 1,912 | na | 0 | 0 | na | 0 | 0 | 1,912 | 767 | 0 | 767 | na | 767 | 2,296 |
| W S Central | 1,348 | na | 0 | 0 | na | 0 | 0 | 1,348 | 845 | 0 | 845 | na | 845 | 1,771 |
| West | 1,805 | na | 0 | 0 | na | 0 | 0 | 1,805 | 2,037 | 0 | 2,037 | na | 2,037 | 2,823 |
| Mountain | 327 | na | 0 | 0 | na | 0 | 0 | 327 | 118 | 0 | 118 | na | 118 | 385 |
| Pacific | 1,479 | na | 0 | 0 | na | 0 | 0 | 1,479 | 1,919 | 0 | 1,919 | na | 1,919 | 2,438 |
| US Total | 11,973 | na | 0 | 0 | na | 0 | 0 | 11,973 | 7,072 | 0 | 7,072 | na | 7,072 | 15,509 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 49,995 | na | 1,334 | 293 | na | 0 | 6,015 | 56,009 | 34,505 | 9,447 | 43,952 | na | 43,952 | 77,985 |
| New England | 20,410 | na | 760 | 198 | na | 0 | 3,935 | 24,344 | 11,379 | 1,643 | 13,023 | na | 13,023 | 30,856 |
| Mid Atlantic | 29,585 | na | 574 | 94 | na | 0 | 2,080 | 31,665 | 23,125 | 7,804 | 30,929 | na | 30,929 | 47,129 |
| Midwest | 60,486 | na | 2,878 | 457 | na | 0 | 10,191 | 70,677 | 40,116 | 6,187 | 46,302 | na | 46,302 | 93,828 |
| E N Central | 35,797 | na | 1,716 | 275 | na | 0 | 6,115 | 41,912 | 22,282 | 4,430 | 26,712 | na | 26,712 | 55,268 |
| W N Central | 24,689 | na | 1,162 | 182 | na | 0 | 4,076 | 28,765 | 17,834 | 1,757 | 19,591 | na | 19,591 | 38,560 |
| South | 127,005 | na | 4,157 | 671 | na | 0 | 14,895 | 141,901 | 88,230 | 13,335 | 101,565 | na | 101,565 | 192,683 |
| South Atlantic | 69,706 | na | 2,241 | 428 | na | 0 | 9,095 | 78,800 | 46,522 | 7,673 | 54,195 | na | 54,195 | 105,898 |
| E S Central | 17,616 | na | 658 | 57 | na | 0 | 1,572 | 19,188 | 13,399 | 2,401 | 15,800 | na | 15,800 | 27,087 |
| W S Central | 39,684 | na | 1,258 | 186 | na | 0 | 4,229 | 43,913 | 28,310 | 3,261 | 31,570 | na | 31,570 | 59,698 |
| West | 47,989 | na | 3,649 | 264 | na | 2 | 7,894 | 55,884 | 39,818 | 4,967 | 44,785 | na | 44,785 | 78,276 |
| Mountain | 16,058 | na | 747 | 94 | na | 2 | 2,275 | 18,333 | 14,346 | 1,603 | 15,949 | na | 15,949 | 26,307 |
| Pacific | 31,931 | na | 2,903 | 170 | na | 0 | 5,619 | 37,551 | 25,472 | 3,364 | 28,836 | na | 28,836 | 51,969 |
| US Total | 285,475 | na | 12,019 | 1,684 | na | 2 | 38,995 | 324,470 | 202,669 | 33,935 | 236,604 | na | 236,604 | 442,772 |

[1]Includes framing lumber and boards.
[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.
[3]Includes OSB and strand lumber rim boards.
[4]Cross laminated timber (CLT). Small volumes due to product infancy.
[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).
[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.
[7]1 $ft^2$, 3/8" basis = 0.5 bfe.
[8]na = Not Applicable

TABLE 7: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN ROOF FRAMING & ROOF SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 2,995 | 0 | 0 | 0 | 0 | 0 | 0 | 2,995 | 18,666 | 0 | 18,666 | na[8] | 18,666 | 12,328 |
| New England | 1,583 | 0 | 0 | 0 | 0 | 0 | 0 | 1,583 | 9,863 | 0 | 9,863 | na | 9,863 | 6,514 |
| Mid Atlantic | 1,413 | 0 | 0 | 0 | 0 | 0 | 0 | 1,413 | 8,803 | 0 | 8,803 | na | 8,803 | 5,814 |
| Midwest | 4,306 | 0 | 0 | 0 | 0 | 0 | 0 | 4,306 | 26,837 | 0 | 26,837 | na | 26,837 | 17,725 |
| E N Central | 2,617 | 0 | 0 | 0 | 0 | 0 | 0 | 2,617 | 16,307 | 0 | 16,307 | na | 16,307 | 10,770 |
| W N Central | 1,690 | 0 | 0 | 0 | 0 | 0 | 0 | 1,690 | 10,529 | 0 | 10,529 | na | 10,529 | 6,954 |
| South | 7,353 | 0 | 0 | 0 | 0 | 0 | 0 | 7,353 | 45,822 | 0 | 45,822 | na | 45,822 | 30,264 |
| South Atlantic | 4,735 | 0 | 0 | 0 | 0 | 0 | 0 | 4,735 | 29,507 | 0 | 29,507 | na | 29,507 | 19,488 |
| E S Central | 678 | 0 | 0 | 0 | 0 | 0 | 0 | 678 | 4,223 | 0 | 4,223 | na | 4,223 | 2,789 |
| W S Central | 1,940 | 0 | 0 | 0 | 0 | 0 | 0 | 1,940 | 12,092 | 0 | 12,092 | na | 12,092 | 7,986 |
| West | 3,513 | 0 | 0 | 0 | 0 | 0 | 0 | 3,513 | 21,891 | 0 | 21,891 | na | 21,891 | 14,458 |
| Mountain | 1,152 | 0 | 0 | 0 | 0 | 0 | 0 | 1,152 | 7,177 | 0 | 7,177 | na | 7,177 | 4,740 |
| Pacific | 2,361 | 0 | 0 | 0 | 0 | 0 | 0 | 2,361 | 14,714 | 0 | 14,714 | na | 14,714 | 9,718 |
| US Total | 18,168 | 0 | 0 | 0 | 0 | 0 | 0 | 18,168 | 113,215 | 0 | 113,215 | na | 113,215 | 74,775 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | na | 0 | 13 |
| New England | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | na | 0 | 6 |
| Mid Atlantic | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | na | 0 | 7 |
| Midwest | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | na | 0 | 34 |
| E N Central | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | na | 0 | 20 |
| W N Central | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | na | 0 | 14 |
| South | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | na | 0 | 67 |
| South Atlantic | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | na | 0 | 41 |
| E S Central | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | na | 0 | 11 |
| W S Central | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | na | 0 | 14 |
| West | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | na | 0 | 25 |
| Mountain | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | na | 0 | 5 |
| Pacific | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | na | 0 | 20 |
| US Total | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 0 | na | 0 | 138 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 9,448 | 0 | 0 | 34 | 0 | 0 | 553 | 10,002 | 15,705 | 0 | 15,705 | na | 15,705 | 17,854 |
| New England | 1,399 | 0 | 0 | 5 | 0 | 0 | 82 | 1,481 | 2,326 | 0 | 2,326 | na | 2,326 | 2,644 |
| Mid Atlantic | 8,049 | 0 | 0 | 29 | 0 | 0 | 471 | 8,521 | 13,379 | 0 | 13,379 | na | 13,379 | 15,211 |
| Midwest | 4,084 | 0 | 0 | 15 | 0 | 0 | 239 | 4,324 | 6,789 | 0 | 6,789 | na | 6,789 | 7,718 |
| E N Central | 3,226 | 0 | 0 | 12 | 0 | 0 | 189 | 3,415 | 5,362 | 0 | 5,362 | na | 5,362 | 6,096 |
| W N Central | 858 | 0 | 0 | 3 | 0 | 0 | 50 | 909 | 1,427 | 0 | 1,427 | na | 1,427 | 1,622 |
| South | 11,346 | 0 | 0 | 41 | 0 | 0 | 664 | 12,011 | 18,860 | 0 | 18,860 | na | 18,860 | 21,441 |
| South Atlantic | 6,513 | 0 | 0 | 24 | 0 | 0 | 381 | 6,894 | 10,825 | 0 | 10,825 | na | 10,825 | 12,307 |
| E S Central | 2,338 | 0 | 0 | 8 | 0 | 0 | 137 | 2,475 | 3,886 | 0 | 3,886 | na | 3,886 | 4,418 |
| W S Central | 2,496 | 0 | 0 | 9 | 0 | 0 | 146 | 2,642 | 4,148 | 0 | 4,148 | na | 4,148 | 4,716 |
| West | 4,183 | 0 | 0 | 15 | 0 | 0 | 245 | 4,428 | 6,953 | 0 | 6,953 | na | 6,953 | 7,905 |
| Mountain | 1,370 | 0 | 0 | 5 | 0 | 0 | 80 | 1,450 | 2,277 | 0 | 2,277 | na | 2,277 | 2,588 |
| Pacific | 2,814 | 0 | 0 | 10 | 0 | 0 | 165 | 2,978 | 4,677 | 0 | 4,677 | na | 4,677 | 5,317 |
| US Total | 29,062 | 0 | 0 | 106 | 0 | 0 | 1,701 | 30,765 | 48,307 | 0 | 48,307 | na | 48,307 | 54,919 |

**Table 7: Lumber, Engineered Wood, & Wood Panels Used in Roof Framing & Roof Sheathing by Building Type & Geography**

TABLE 7: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN ROOF FRAMING & ROOF SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 388 | 416 | 0 | 7 | 0 | 0 | 945 | 1,335 | 652 | 0 | 652 | na | 652 | 1,661 |
| New England | 77 | 82 | 0 | 1 | 0 | 0 | 187 | 264 | 129 | 0 | 129 | na | 129 | 329 |
| Mid Atlantic | 312 | 334 | 0 | 5 | 0 | 0 | 759 | 1,071 | 523 | 0 | 523 | na | 523 | 1,333 |
| Midwest | 799 | 857 | 0 | 14 | 0 | 0 | 1,945 | 2,747 | 1,343 | 0 | 1,343 | na | 1,343 | 3,419 |
| E N Central | 313 | 335 | 0 | 5 | 0 | 0 | 761 | 1,075 | 525 | 0 | 525 | na | 525 | 1,338 |
| W N Central | 487 | 521 | 0 | 8 | 0 | 0 | 1,184 | 1,672 | 817 | 0 | 817 | na | 817 | 2,081 |
| South | 1,773 | 1,900 | 0 | 30 | 0 | 0 | 4,317 | 6,094 | 2,978 | 0 | 2,978 | na | 2,978 | 7,583 |
| South Atlantic | 930 | 997 | 0 | 16 | 0 | 0 | 2,265 | 3,197 | 1,562 | 0 | 1,562 | na | 1,562 | 3,978 |
| E S Central | 267 | 287 | 0 | 5 | 0 | 0 | 651 | 919 | 449 | 0 | 449 | na | 449 | 1,143 |
| W S Central | 576 | 617 | 0 | 10 | 0 | 0 | 1,401 | 1,978 | 967 | 0 | 967 | na | 967 | 2,462 |
| West | 892 | 956 | 0 | 15 | 0 | 0 | 2,172 | 3,065 | 1,498 | 0 | 1,498 | na | 1,498 | 3,814 |
| Mountain | 470 | 504 | 0 | 8 | 0 | 0 | 1,145 | 1,615 | 789 | 0 | 789 | na | 789 | 2,010 |
| Pacific | 422 | 452 | 0 | 7 | 0 | 0 | 1,028 | 1,450 | 709 | 0 | 709 | na | 709 | 1,804 |
| US Total | 3,853 | 4,129 | 0 | 66 | 0 | 0 | 9,380 | 13,242 | 6,470 | 0 | 6,470 | na | 6,470 | 16,477 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 6,654 | 185 | 260 | 6 | 0 | 0 | 726 | 7,383 | 3,141 | 415 | 3,557 | na | 3,557 | 9,162 |
| New England | 1,322 | 69 | 96 | 2 | 0 | 0 | 269 | 1,592 | 1,163 | 154 | 1,317 | na | 1,317 | 2,250 |
| Mid Atlantic | 5,332 | 117 | 164 | 4 | 0 | 0 | 457 | 5,792 | 1,978 | 262 | 2,240 | na | 2,240 | 6,912 |
| Midwest | 10,493 | 313 | 439 | 10 | 0 | 0 | 1,225 | 11,724 | 5,298 | 701 | 5,999 | na | 5,999 | 14,723 |
| E N Central | 6,931 | 207 | 291 | 6 | 0 | 0 | 812 | 7,747 | 3,514 | 465 | 3,978 | na | 3,978 | 9,736 |
| W N Central | 3,563 | 105 | 148 | 3 | 0 | 0 | 412 | 3,977 | 1,785 | 236 | 2,021 | na | 2,021 | 4,987 |
| South | 19,376 | 552 | 774 | 17 | 0 | 0 | 2,163 | 21,547 | 9,346 | 1,236 | 10,582 | na | 10,582 | 26,838 |
| South Atlantic | 7,739 | 226 | 317 | 7 | 0 | 0 | 885 | 8,626 | 3,822 | 506 | 4,327 | na | 4,327 | 10,790 |
| E S Central | 2,891 | 73 | 102 | 2 | 0 | 0 | 286 | 3,178 | 1,236 | 163 | 1,399 | na | 1,399 | 3,878 |
| W S Central | 8,746 | 253 | 355 | 8 | 0 | 0 | 992 | 9,742 | 4,288 | 567 | 4,856 | na | 4,856 | 12,170 |
| West | 7,509 | 230 | 322 | 7 | 0 | 2 | 926 | 8,438 | 3,892 | 515 | 4,406 | na | 4,406 | 10,642 |
| Mountain | 2,893 | 80 | 112 | 2 | 0 | 2 | 337 | 3,232 | 1,347 | 178 | 1,526 | na | 1,526 | 3,995 |
| Pacific | 4,616 | 150 | 211 | 5 | 0 | 0 | 589 | 5,206 | 2,544 | 337 | 2,881 | na | 2,881 | 6,647 |
| US Total | 44,033 | 1,280 | 1,796 | 40 | 0 | 2 | 5,040 | 49,092 | 21,677 | 2,867 | 24,544 | na | 24,544 | 61,365 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 4,858 | 91 | 21 | 35 | 0 | 0 | 767 | 5,628 | 9,287 | 0 | 9,287 | na | 9,287 | 10,272 |
| New England | 1,827 | 34 | 8 | 13 | 0 | 0 | 288 | 2,117 | 3,493 | 0 | 3,493 | na | 3,493 | 3,863 |
| Mid Atlantic | 3,031 | 57 | 13 | 22 | 0 | 0 | 478 | 3,512 | 5,794 | 0 | 5,794 | na | 5,794 | 6,409 |
| Midwest | 4,005 | 75 | 17 | 29 | 0 | 0 | 632 | 4,640 | 7,656 | 0 | 7,656 | na | 7,656 | 8,468 |
| E N Central | 2,423 | 45 | 11 | 17 | 0 | 0 | 383 | 2,808 | 4,633 | 0 | 4,633 | na | 4,633 | 5,124 |
| W N Central | 1,581 | 30 | 7 | 11 | 0 | 0 | 250 | 1,832 | 3,023 | 0 | 3,023 | na | 3,023 | 3,344 |
| South | 8,825 | 165 | 38 | 64 | 0 | 0 | 1,395 | 10,224 | 16,870 | 0 | 16,870 | na | 16,870 | 18,659 |
| South Atlantic | 4,448 | 83 | 19 | 32 | 0 | 0 | 703 | 5,154 | 8,504 | 0 | 8,504 | na | 8,504 | 9,406 |
| E S Central | 1,502 | 28 | 7 | 11 | 0 | 0 | 237 | 1,740 | 2,871 | 0 | 2,871 | na | 2,871 | 3,176 |
| W S Central | 2,874 | 54 | 13 | 21 | 0 | 0 | 454 | 3,330 | 5,495 | 0 | 5,495 | na | 5,495 | 6,077 |
| West | 4,323 | 81 | 19 | 31 | 0 | 0 | 684 | 5,008 | 8,264 | 0 | 8,264 | na | 8,264 | 9,140 |
| Mountain | 822 | 15 | 4 | 6 | 0 | 0 | 130 | 952 | 1,571 | 0 | 1,571 | na | 1,571 | 1,738 |
| Pacific | 3,501 | 65 | 15 | 25 | 0 | 0 | 554 | 4,056 | 6,692 | 0 | 6,692 | na | 6,692 | 7,402 |
| US Total | 22,010 | 411 | 96 | 159 | 0 | 0 | 3,478 | 25,501 | 42,077 | 0 | 42,077 | na | 42,077 | 46,539 |

TABLE 7: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN ROOF FRAMING & ROOF SHEATHING
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 4,328 | 350 | 54 | 3 | 0 | 0 | 812 | 5,144 | 2,468 | 0 | 2,468 | na | 2,468 | 6,378 |
| New England | 696 | 68 | 11 | 1 | 0 | 0 | 157 | 855 | 479 | 0 | 479 | na | 479 | 1,094 |
| Mid Atlantic | 3,632 | 282 | 44 | 3 | 0 | 0 | 655 | 4,289 | 1,990 | 0 | 1,990 | na | 1,990 | 5,284 |
| Midwest | 10,865 | 759 | 118 | 7 | 0 | 0 | 1,760 | 12,631 | 5,344 | 0 | 5,344 | na | 5,344 | 15,303 |
| E N Central | 4,377 | 318 | 49 | 3 | 0 | 0 | 737 | 5,117 | 2,238 | 0 | 2,238 | na | 2,238 | 6,235 |
| W N Central | 6,488 | 441 | 68 | 4 | 0 | 0 | 1,023 | 7,515 | 3,106 | 0 | 3,106 | na | 3,106 | 9,068 |
| South | 36,195 | 2,430 | 377 | 23 | 0 | 0 | 5,644 | 41,852 | 17,113 | 0 | 17,113 | na | 17,113 | 50,408 |
| South Atlantic | 14,207 | 972 | 151 | 9 | 0 | 0 | 2,256 | 16,469 | 6,843 | 0 | 6,843 | na | 6,843 | 19,890 |
| E S Central | 4,887 | 385 | 60 | 4 | 0 | 0 | 894 | 5,784 | 2,714 | 0 | 2,714 | na | 2,714 | 7,141 |
| W S Central | 17,101 | 1,073 | 166 | 10 | 0 | 0 | 2,495 | 19,599 | 7,557 | 0 | 7,557 | na | 7,557 | 23,377 |
| West | 11,258 | 661 | 102 | 6 | 0 | 0 | 1,536 | 12,797 | 4,655 | 0 | 4,655 | na | 4,655 | 15,125 |
| Mountain | 5,925 | 325 | 50 | 3 | 0 | 0 | 755 | 6,682 | 2,289 | 0 | 2,289 | na | 2,289 | 7,826 |
| Pacific | 5,333 | 336 | 52 | 3 | 0 | 0 | 781 | 6,115 | 2,366 | 0 | 2,366 | na | 2,366 | 7,299 |
| US Total | 62,646 | 4,200 | 651 | 40 | 0 | 0 | 9,752 | 72,424 | 29,580 | 0 | 29,580 | na | 29,580 | 87,214 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 7,993 | 54 | 169 | 11 | 0 | 0 | 451 | 8,445 | 13,321 | 3,680 | 17,001 | na | 17,001 | 16,946 |
| New England | 2,804 | 19 | 59 | 4 | 0 | 0 | 158 | 2,963 | 4,688 | 1,291 | 5,979 | na | 5,979 | 5,953 |
| Mid Atlantic | 5,188 | 35 | 109 | 7 | 0 | 0 | 293 | 5,482 | 8,633 | 2,389 | 11,022 | na | 11,022 | 10,993 |
| Midwest | 11,058 | 75 | 233 | 15 | 0 | 0 | 624 | 11,685 | 19,621 | 5,091 | 24,711 | na | 24,711 | 24,040 |
| E N Central | 6,495 | 44 | 137 | 9 | 0 | 0 | 367 | 6,863 | 10,981 | 2,990 | 13,971 | na | 13,971 | 13,848 |
| W N Central | 4,563 | 31 | 96 | 6 | 0 | 0 | 258 | 4,822 | 8,640 | 2,101 | 10,741 | na | 10,741 | 10,192 |
| South | 22,648 | 154 | 478 | 30 | 0 | 0 | 1,278 | 23,931 | 38,546 | 10,427 | 48,973 | na | 48,973 | 48,417 |
| South Atlantic | 13,638 | 93 | 288 | 18 | 0 | 0 | 769 | 14,411 | 22,841 | 6,279 | 29,119 | na | 29,119 | 28,971 |
| E S Central | 2,105 | 14 | 44 | 3 | 0 | 0 | 119 | 2,224 | 4,149 | 969 | 5,118 | na | 5,118 | 4,783 |
| W S Central | 6,905 | 47 | 146 | 9 | 0 | 0 | 390 | 7,296 | 11,556 | 3,179 | 14,735 | na | 14,735 | 14,664 |
| West | 8,105 | 55 | 171 | 11 | 0 | 0 | 458 | 8,564 | 13,634 | 3,731 | 17,365 | na | 17,365 | 17,247 |
| Mountain | 2,528 | 17 | 53 | 3 | 0 | 0 | 143 | 2,671 | 4,554 | 1,164 | 5,718 | na | 5,718 | 5,531 |
| Pacific | 5,576 | 38 | 118 | 7 | 0 | 0 | 315 | 5,892 | 9,080 | 2,567 | 11,647 | na | 11,647 | 11,716 |
| US Total | 49,803 | 338 | 1,051 | 67 | 0 | 0 | 2,812 | 52,625 | 85,122 | 22,928 | 108,050 | na | 108,050 | 106,650 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 2,901 | 197 | 1,172 | 5 | 0 | 0 | 1,648 | 4,557 | 4,044 | 82 | 4,126 | na | 4,126 | 6,621 |
| New England | 877 | 60 | 355 | 1 | 0 | 0 | 499 | 1,379 | 1,183 | 25 | 1,208 | na | 1,208 | 1,982 |
| Mid Atlantic | 2,024 | 138 | 818 | 3 | 0 | 0 | 1,150 | 3,179 | 2,862 | 57 | 2,919 | na | 2,919 | 4,638 |
| Midwest | 4,023 | 274 | 1,626 | 7 | 0 | 0 | 2,289 | 6,321 | 5,423 | 114 | 5,537 | na | 5,537 | 9,089 |
| E N Central | 1,976 | 134 | 799 | 3 | 0 | 0 | 1,124 | 3,105 | 2,664 | 56 | 2,720 | na | 2,720 | 4,464 |
| W N Central | 2,047 | 139 | 827 | 3 | 0 | 0 | 1,164 | 3,216 | 2,759 | 58 | 2,817 | na | 2,817 | 4,625 |
| South | 11,966 | 814 | 4,835 | 20 | 0 | 0 | 6,815 | 18,799 | 16,508 | 339 | 16,847 | na | 16,847 | 27,222 |
| South Atlantic | 7,450 | 507 | 3,010 | 12 | 0 | 0 | 4,245 | 11,704 | 10,042 | 211 | 10,253 | na | 10,253 | 16,830 |
| E S Central | 1,765 | 120 | 713 | 3 | 0 | 0 | 1,002 | 2,772 | 2,758 | 50 | 2,808 | na | 2,808 | 4,176 |
| W S Central | 2,752 | 187 | 1,112 | 4 | 0 | 0 | 1,568 | 4,323 | 3,709 | 78 | 3,787 | na | 3,787 | 6,216 |
| West | 3,611 | 246 | 1,459 | 6 | 0 | 0 | 2,058 | 5,673 | 6,073 | 102 | 6,176 | na | 6,176 | 8,761 |
| Mountain | 1,381 | 94 | 558 | 2 | 0 | 0 | 788 | 2,169 | 2,383 | 39 | 2,423 | na | 2,423 | 3,380 |
| Pacific | 2,230 | 152 | 901 | 4 | 0 | 0 | 1,270 | 3,504 | 3,690 | 63 | 3,753 | na | 3,753 | 5,381 |
| US Total | 22,502 | 1,530 | 9,092 | 37 | 0 | 0 | 12,810 | 35,350 | 32,049 | 637 | 32,686 | na | 32,686 | 51,693 |

TABLE 7: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN ROOF FRAMING & ROOF SHEATHING IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 173 | 0 | 0 | 0 | 0 | 0 | 0 | 173 | 720 | 0 | 720 | na | 720 | 533 |
| New England | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 238 | 0 | 238 | na | 238 | 176 |
| Mid Atlantic | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 116 | 482 | 0 | 482 | na | 482 | 357 |
| Midwest | 241 | 0 | 0 | 0 | 0 | 0 | 0 | 241 | 1,004 | 0 | 1,004 | na | 1,004 | 743 |
| E N Central | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 111 | 464 | 0 | 464 | na | 464 | 343 |
| W N Central | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 540 | 0 | 540 | na | 540 | 400 |
| South | 337 | 0 | 0 | 0 | 0 | 0 | 0 | 337 | 1,693 | 0 | 1,693 | na | 1,693 | 1,183 |
| South Atlantic | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 127 | 661 | 0 | 661 | na | 661 | 457 |
| E S Central | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 300 | 0 | 300 | na | 300 | 203 |
| W S Central | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 733 | 0 | 733 | na | 733 | 523 |
| West | 232 | 0 | 0 | 0 | 0 | 0 | 0 | 232 | 1,267 | 0 | 1,267 | na | 1,267 | 865 |
| Mountain | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 572 | 0 | 572 | na | 572 | 364 |
| Pacific | 154 | 0 | 0 | 0 | 0 | 0 | 0 | 154 | 695 | 0 | 695 | na | 695 | 501 |
| US Total | 983 | 0 | 0 | 0 | 0 | 0 | 0 | 983 | 4,684 | 0 | 4,684 | na | 4,684 | 3,325 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 201 | 351 | 1,105 | 20 | 0 | 0 | 2,136 | 2,347 | 1,449 | 0 | 1,449 | na | 1,449 | 3,071 |
| New England | 83 | 145 | 454 | 8 | 0 | 0 | 878 | 965 | 596 | 0 | 596 | na | 596 | 1,263 |
| Mid Atlantic | 118 | 207 | 650 | 12 | 0 | 0 | 1,259 | 1,382 | 853 | 0 | 853 | na | 853 | 1,808 |
| Midwest | 289 | 505 | 1,588 | 29 | 0 | 0 | 3,067 | 3,374 | 2,083 | 0 | 2,083 | na | 2,083 | 4,416 |
| E N Central | 129 | 225 | 707 | 13 | 0 | 0 | 1,366 | 1,502 | 927 | 0 | 927 | na | 927 | 1,966 |
| W N Central | 161 | 280 | 881 | 16 | 0 | 0 | 1,701 | 1,872 | 1,156 | 0 | 1,156 | na | 1,156 | 2,450 |
| South | 422 | 738 | 2,318 | 42 | 0 | 0 | 4,478 | 4,925 | 3,041 | 0 | 3,041 | na | 3,041 | 6,446 |
| South Atlantic | 130 | 226 | 711 | 13 | 0 | 0 | 1,377 | 1,511 | 933 | 0 | 933 | na | 933 | 1,978 |
| E S Central | 139 | 243 | 765 | 14 | 0 | 0 | 1,474 | 1,625 | 1,003 | 0 | 1,003 | na | 1,003 | 2,127 |
| W S Central | 153 | 268 | 842 | 15 | 0 | 0 | 1,626 | 1,789 | 1,105 | 0 | 1,105 | na | 1,105 | 2,341 |
| West | 370 | 646 | 2,030 | 37 | 0 | 0 | 3,936 | 4,314 | 2,664 | 0 | 2,664 | na | 2,664 | 5,646 |
| Mountain | 21 | 37 | 117 | 2 | 0 | 0 | 227 | 249 | 154 | 0 | 154 | na | 154 | 326 |
| Pacific | 349 | 609 | 1,913 | 35 | 0 | 0 | 3,709 | 4,065 | 2,510 | 0 | 2,510 | na | 2,510 | 5,320 |
| US Total | 1,283 | 2,240 | 7,041 | 128 | 0 | 0 | 13,617 | 14,960 | 9,237 | 0 | 9,237 | na | 9,237 | 19,578 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 39,953 | 1,646 | 2,781 | 121 | 0 | 0 | 8,039 | 48,024 | 69,454 | 4,177 | 73,631 | na | 73,631 | 84,840 |
| New England | 10,731 | 476 | 983 | 36 | 0 | 0 | 2,517 | 13,261 | 24,156 | 1,470 | 25,626 | na | 25,626 | 26,074 |
| Mid Atlantic | 29,222 | 1,170 | 1,798 | 85 | 0 | 0 | 5,522 | 34,763 | 45,298 | 2,708 | 48,005 | na | 48,005 | 58,766 |
| Midwest | 50,199 | 2,857 | 4,021 | 125 | 0 | 0 | 11,782 | 62,027 | 81,397 | 5,906 | 87,303 | na | 87,303 | 105,679 |
| E N Central | 28,618 | 1,309 | 1,993 | 69 | 0 | 0 | 5,739 | 34,379 | 47,614 | 3,511 | 51,125 | na | 51,125 | 59,941 |
| W N Central | 21,581 | 1,548 | 2,028 | 56 | 0 | 0 | 6,043 | 27,649 | 33,783 | 2,395 | 36,178 | na | 36,178 | 45,738 |
| South | 120,308 | 6,752 | 8,820 | 268 | 0 | 0 | 26,755 | 147,139 | 170,777 | 12,002 | 182,778 | na | 182,778 | 238,528 |
| South Atlantic | 59,957 | 3,103 | 4,496 | 131 | 0 | 0 | 12,881 | 72,869 | 95,539 | 6,995 | 102,534 | na | 102,534 | 124,136 |
| E S Central | 16,636 | 1,151 | 1,691 | 49 | 0 | 0 | 4,801 | 21,460 | 23,590 | 1,182 | 24,772 | na | 24,772 | 33,846 |
| W S Central | 43,715 | 2,499 | 2,634 | 87 | 0 | 0 | 9,073 | 52,811 | 51,649 | 3,824 | 55,472 | na | 55,472 | 80,547 |
| West | 44,020 | 2,874 | 4,104 | 129 | 0 | 2 | 12,016 | 56,057 | 70,791 | 4,348 | 75,139 | na | 75,139 | 93,627 |
| Mountain | 16,645 | 1,072 | 894 | 32 | 0 | 2 | 3,605 | 20,255 | 23,113 | 1,381 | 24,495 | na | 24,495 | 32,502 |
| Pacific | 27,375 | 1,802 | 3,210 | 96 | 0 | 0 | 8,411 | 35,802 | 47,677 | 2,967 | 50,644 | na | 50,644 | 61,124 |
| US Total | 254,481 | 14,129 | 19,727 | 642 | 0 | 2 | 58,591 | 313,248 | 392,419 | 26,433 | 418,851 | na | 418,851 | 522,674 |

[1]Includes framing lumber, boards, and wood trusses.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 8: LUMBER & ENGINEERED WOOD USED IN COLUMNS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber & Engineered Wood | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Engineered wood | | | | | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* |
| STORES | | | | | | | | |
| Northeast | 279 | na[8] | 0 | 0 | na | na | 1 | 280 |
| New England | 79 | na | 0 | 0 | na | na | 0 | 79 |
| Mid Atlantic | 200 | na | 0 | 0 | na | na | 1 | 201 |
| Midwest | 379 | na | 3 | 0 | na | na | 7 | 386 |
| E N Central | 225 | na | 0 | 0 | na | na | 0 | 225 |
| W N Central | 154 | na | 3 | 0 | na | na | 7 | 161 |
| South | 1338 | na | 26 | 2 | na | na | 64 | 1403 |
| South Atlantic | 713 | na | 21 | 2 | na | na | 52 | 764 |
| E S Central | 271 | na | 4 | 0 | na | na | 11 | 281 |
| W S Central | 355 | na | 1 | 0 | na | na | 2 | 357 |
| West | 315 | na | 24 | 2 | na | na | 59 | 374 |
| Mountain | 139 | na | 0 | 0 | na | na | 0 | 139 |
| Pacific | 176 | na | 24 | 2 | na | na | 59 | 235 |
| US Total | 2311 | na | 53 | 5 | na | na | 132 | 2443 |
| INDUSTRIAL | | | | | | | | |
| Northeast | 0 | na | 2 | 0 | na | na | 4 | 4 |
| New England | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mid Atlantic | 0 | na | 2 | 0 | na | na | 4 | 4 |
| Midwest | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| South | 0 | na | 0 | 0 | na | na | 0 | 0 |
| South Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| West | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mountain | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Pacific | 0 | na | 0 | 0 | na | na | 0 | 0 |
| US Total | 0 | na | 2 | 0 | na | na | 4 | 4 |
| OFFICES | | | | | | | | |
| Northeast | 0 | na | 5 | 0 | na | na | 12 | 12 |
| New England | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mid Atlantic | 0 | na | 5 | 0 | na | na | 12 | 12 |
| Midwest | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| South | 0 | na | 1 | 0 | na | na | 1 | 1 |
| South Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W S Central | 0 | na | 0 | 0 | na | na | 1 | 1 |
| West | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mountain | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Pacific | 0 | na | 0 | 0 | na | na | 0 | 0 |
| US Total | 0 | na | 5 | 1 | na | na | 13 | 13 |

**Table 8: Lumber & Engineered Wood Used in Columns by Building Type & Geography**

TABLE 8: LUMBER & ENGINEERED WOOD USED IN COLUMNS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber & Engineered Wood | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Engineered wood | | | | | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | |
| Northeast | 6 | na | 0 | 0 | na | na | 1 | 7 |
| New England | 1 | na | 0 | 0 | na | na | 1 | 2 |
| Mid Atlantic | 5 | na | 0 | 0 | na | na | 0 | 5 |
| Midwest | 13 | na | 0 | 0 | na | na | 0 | 13 |
| E N Central | 5 | na | 0 | 0 | na | na | 0 | 5 |
| W N Central | 8 | na | 0 | 0 | na | na | 0 | 8 |
| South | 28 | na | 1 | 0 | na | na | 3 | 31 |
| South Atlantic | 15 | na | 1 | 0 | na | na | 3 | 18 |
| E S Central | 4 | na | 0 | 0 | na | na | 0 | 4 |
| W S Central | 9 | na | 0 | 0 | na | na | 0 | 9 |
| West | 14 | na | 0 | 0 | na | na | 0 | 14 |
| Mountain | 7 | na | 0 | 0 | na | na | 0 | 7 |
| Pacific | 7 | na | 0 | 0 | na | na | 0 | 7 |
| US Total | 61 | na | 2 | 0 | na | na | 4 | 66 |
| SCHOOLS | | | | | | | | |
| Northeast | 2 | na | 0 | 0 | na | na | 0 | 2 |
| New England | 2 | na | 0 | 0 | na | na | 0 | 2 |
| Mid Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Midwest | 22 | na | 1 | 0 | na | na | 2 | 24 |
| E N Central | 8 | na | 1 | 0 | na | na | 2 | 10 |
| W N Central | 14 | na | 0 | 0 | na | na | 0 | 14 |
| South | 178 | na | 1 | 0 | na | na | 3 | 182 |
| South Atlantic | 49 | na | 1 | 0 | na | na | 2 | 51 |
| E S Central | 22 | na | 0 | 0 | na | na | 1 | 23 |
| W S Central | 107 | na | 0 | 0 | na | na | 1 | 107 |
| West | 47 | na | 3 | 0 | na | na | 8 | 54 |
| Mountain | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Pacific | 47 | na | 3 | 0 | na | na | 8 | 54 |
| US Total | 248 | na | 5 | 0 | na | na | 13 | 261 |
| COLLEGES | | | | | | | | |
| Northeast | 23 | na | 1 | 0 | na | na | 2 | 24 |
| New England | 8 | na | 1 | 0 | na | na | 2 | 10 |
| Mid Atlantic | 14 | na | 0 | 0 | na | na | 0 | 14 |
| Midwest | 19 | na | 0 | 0 | na | na | 0 | 19 |
| E N Central | 11 | na | 0 | 0 | na | na | 0 | 11 |
| W N Central | 7 | na | 0 | 0 | na | na | 0 | 7 |
| South | 41 | na | 1 | 0 | na | na | 2 | 42 |
| South Atlantic | 21 | na | 0 | 0 | na | na | 1 | 22 |
| E S Central | 7 | na | 0 | 0 | na | na | 0 | 7 |
| W S Central | 13 | na | 0 | 0 | na | na | 0 | 13 |
| West | 20 | na | 0 | 0 | na | na | 1 | 21 |
| Mountain | 4 | na | 0 | 0 | na | na | 0 | 4 |
| Pacific | 16 | na | 0 | 0 | na | na | 1 | 17 |
| US Total | 102 | na | 2 | 0 | na | na | 4 | 107 |

TABLE 8: LUMBER & ENGINEERED WOOD USED IN COLUMNS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber & Engineered Wood | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Engineered wood | | | | | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | |
| Northeast | 6 | na | 1 | 0 | na | na | 2 | 9 |
| New England | 1 | na | 0 | 0 | na | na | 0 | 2 |
| Mid Atlantic | 5 | na | 1 | 0 | na | na | 2 | 7 |
| Midwest | 14 | na | 0 | 0 | na | na | 0 | 14 |
| E N Central | 6 | na | 0 | 0 | na | na | 0 | 6 |
| W N Central | 8 | na | 0 | 0 | na | na | 0 | 8 |
| South | 44 | na | 1 | 0 | na | na | 2 | 46 |
| South Atlantic | 18 | na | 1 | 0 | na | na | 2 | 19 |
| E S Central | 7 | na | 0 | 0 | na | na | 0 | 7 |
| W S Central | 19 | na | 0 | 0 | na | na | 1 | 20 |
| West | 12 | na | 0 | 0 | na | na | 0 | 12 |
| Mountain | 6 | na | 0 | 0 | na | na | 0 | 6 |
| Pacific | 6 | na | 0 | 0 | na | na | 0 | 6 |
| US Total | 76 | na | 2 | 0 | na | na | 5 | 81 |
| HEALTH | | | | | | | | |
| Northeast | 139 | na | 1 | 0 | na | na | 2 | 142 |
| New England | 49 | na | 0 | 0 | na | na | 0 | 49 |
| Mid Atlantic | 91 | na | 1 | 0 | na | na | 2 | 93 |
| Midwest | 193 | na | 3 | 0 | na | na | 7 | 200 |
| E N Central | 113 | na | 3 | 0 | na | na | 7 | 120 |
| W N Central | 80 | na | 0 | 0 | na | na | 0 | 80 |
| South | 395 | na | 2 | 0 | na | na | 5 | 400 |
| South Atlantic | 238 | na | 1 | 0 | na | na | 2 | 240 |
| E S Central | 37 | na | 0 | 0 | na | na | 0 | 37 |
| W S Central | 120 | na | 1 | 0 | na | na | 2 | 123 |
| West | 141 | na | 1 | 0 | na | na | 4 | 145 |
| Mountain | 44 | na | 1 | 0 | na | na | 3 | 47 |
| Pacific | 97 | na | 0 | 0 | na | na | 0 | 98 |
| US Total | 869 | na | 7 | 1 | na | na | 18 | 887 |
| PUBLIC | | | | | | | | |
| Northeast | 109 | na | 0 | 0 | na | na | 0 | 109 |
| New England | 33 | na | 0 | 0 | na | na | 0 | 33 |
| Mid Atlantic | 76 | na | 0 | 0 | na | na | 0 | 76 |
| Midwest | 151 | na | 1 | 0 | na | na | 2 | 152 |
| E N Central | 74 | na | 0 | 0 | na | na | 1 | 75 |
| W N Central | 77 | na | 0 | 0 | na | na | 1 | 77 |
| South | 448 | na | 1 | 0 | na | na | 3 | 451 |
| South Atlantic | 279 | na | 0 | 0 | na | na | 1 | 280 |
| E S Central | 66 | na | 1 | 0 | na | na | 2 | 68 |
| W S Central | 103 | na | 0 | 0 | na | na | 0 | 103 |
| West | 135 | na | 1 | 0 | na | na | 4 | 139 |
| Mountain | 52 | na | 0 | 0 | na | na | 0 | 52 |
| Pacific | 83 | na | 1 | 0 | na | na | 3 | 87 |
| US Total | 842 | na | 4 | 0 | na | na | 9 | 851 |

TABLE 8: LUMBER & ENGINEERED WOOD USED IN COLUMNS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber & Engineered Wood | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Engineered wood | | | | | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* |
| RECREATION | | | | | | | | |
| Northeast | 0 | na | 0 | 0 | na | na | 0 | 0 |
| New England | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mid Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Midwest | 0 | na | 1 | 0 | na | na | 3 | 3 |
| E N Central | 0 | na | 1 | 0 | na | na | 2 | 2 |
| W N Central | 0 | na | 0 | 0 | na | na | 1 | 1 |
| South | 0 | na | 0 | 0 | na | na | 1 | 1 |
| South Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W S Central | 0 | na | 0 | 0 | na | na | 1 | 1 |
| West | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mountain | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Pacific | 0 | na | 0 | 0 | na | na | 0 | 0 |
| US Total | 0 | na | 2 | 0 | na | na | 4 | 4 |
| MISCELLANEOUS | | | | | | | | |
| Northeast | 0 | na | 1 | 0 | na | na | 2 | 2 |
| New England | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mid Atlantic | 0 | na | 1 | 0 | na | na | 2 | 2 |
| Midwest | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W N Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| South | 0 | na | 0 | 0 | na | na | 0 | 0 |
| South Atlantic | 0 | na | 0 | 0 | na | na | 0 | 0 |
| E S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| W S Central | 0 | na | 0 | 0 | na | na | 0 | 0 |
| West | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Mountain | 0 | na | 0 | 0 | na | na | 0 | 0 |
| Pacific | 0 | na | 0 | 0 | na | na | 0 | 0 |
| US Total | 0 | na | 1 | 0 | na | na | 2 | 2 |
| ALL BUILDINGS | | | | | | | | |
| Northeast | 564 | na | 10 | 1 | na | na | 26 | 589 |
| New England | 173 | na | 1 | 0 | na | na | 3 | 176 |
| Mid Atlantic | 390 | na | 9 | 1 | na | na | 23 | 413 |
| Midwest | 789 | na | 9 | 1 | na | na | 22 | 811 |
| E N Central | 442 | na | 5 | 0 | na | na | 12 | 454 |
| W N Central | 347 | na | 4 | 0 | na | na | 9 | 357 |
| South | 2473 | na | 34 | 3 | na | na | 85 | 2558 |
| South Atlantic | 1332 | na | 25 | 2 | na | na | 63 | 1395 |
| E S Central | 414 | na | 6 | 1 | na | na | 15 | 428 |
| W S Central | 727 | na | 3 | 0 | na | na | 7 | 735 |
| West | 684 | na | 30 | 3 | na | na | 76 | 760 |
| Mountain | 252 | na | 2 | 0 | na | na | 4 | 256 |
| Pacific | 432 | na | 29 | 3 | na | na | 72 | 505 |
| US Total | 4510 | na | 84 | 8 | na | na | 209 | 4719 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 9: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN STAIRS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 0 | na[8] | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| New England | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Mid Atlantic | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| Midwest | 19 | na | na | na | na | na | na | 19 | 0 | 0 | 0 | 0 | 0 | 19 |
| E N Central | 11 | na | na | na | na | na | na | 11 | 0 | 0 | 0 | 0 | 0 | 11 |
| W N Central | 8 | na | na | na | na | na | na | 8 | 0 | 0 | 0 | 0 | 0 | 8 |
| South | 37 | na | na | na | na | na | na | 37 | 0 | 0 | 0 | 0 | 0 | 37 |
| South Atlantic | 24 | na | na | na | na | na | na | 24 | 0 | 0 | 0 | 0 | 0 | 24 |
| E S Central | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| W S Central | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| West | 14 | na | na | na | na | na | na | 14 | 0 | 0 | 0 | 0 | 0 | 14 |
| Mountain | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Pacific | 11 | na | na | na | na | na | na | 11 | 0 | 0 | 0 | 0 | 0 | 11 |
| US Total | 77 | na | na | na | na | na | na | 77 | 0 | 0 | 0 | 0 | 0 | 77 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 10 | na | na | na | na | na | na | 10 | 0 | 0 | 0 | 0 | 0 | 10 |
| New England | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Mid Atlantic | 8 | na | na | na | na | na | na | 8 | 0 | 0 | 0 | 0 | 0 | 8 |
| Midwest | 5 | na | na | na | na | na | na | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| E N Central | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| W N Central | 1 | na | na | na | na | na | na | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| South | 13 | na | na | na | na | na | na | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| South Atlantic | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| E S Central | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| W S Central | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| West | 5 | na | na | na | na | na | na | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| Mountain | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Pacific | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| US Total | 32 | na | na | na | na | na | na | 32 | 0 | 0 | 0 | 0 | 0 | 32 |

**Table 9: Lumber, Engineered Wood, & Wood Panels Used in Stairs by Building Type & Geography**

TABLE 9: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN STAIRS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 31 | na | na | na | na | na | na | 31 | 0 | 0 | 0 | 0 | 0 | 31 |
| New England | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| Mid Atlantic | 27 | na | na | na | na | na | na | 27 | 0 | 0 | 0 | 0 | 0 | 27 |
| Midwest | 62 | na | na | na | na | na | na | 62 | 0 | 0 | 0 | 0 | 0 | 62 |
| E N Central | 20 | na | na | na | na | na | na | 20 | 0 | 0 | 0 | 0 | 0 | 20 |
| W N Central | 42 | na | na | na | na | na | na | 42 | 0 | 0 | 0 | 0 | 0 | 42 |
| South | 142 | na | na | na | na | na | na | 142 | 0 | 0 | 0 | 0 | 0 | 142 |
| South Atlantic | 77 | na | na | na | na | na | na | 77 | 0 | 0 | 0 | 0 | 0 | 77 |
| E S Central | 22 | na | na | na | na | na | na | 22 | 0 | 0 | 0 | 0 | 0 | 22 |
| W S Central | 43 | na | na | na | na | na | na | 43 | 0 | 0 | 0 | 0 | 0 | 43 |
| West | 98 | na | na | na | na | na | na | 98 | 0 | 0 | 0 | 0 | 0 | 98 |
| Mountain | 40 | na | na | na | na | na | na | 40 | 0 | 0 | 0 | 0 | 0 | 40 |
| Pacific | 58 | na | na | na | na | na | na | 58 | 0 | 0 | 0 | 0 | 0 | 58 |
| US Total | 333 | na | na | na | na | na | na | 333 | 0 | 0 | 0 | 0 | 0 | 333 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| New England | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Mid Atlantic | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Midwest | 11 | na | na | na | na | na | na | 11 | 0 | 0 | 0 | 0 | 0 | 11 |
| E N Central | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| W N Central | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| South | 19 | na | na | na | na | na | na | 19 | 0 | 0 | 0 | 0 | 0 | 19 |
| South Atlantic | 8 | na | na | na | na | na | na | 8 | 0 | 0 | 0 | 0 | 0 | 8 |
| E S Central | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| W S Central | 8 | na | na | na | na | na | na | 8 | 0 | 0 | 0 | 0 | 0 | 8 |
| West | 9 | na | na | na | na | na | na | 9 | 0 | 0 | 0 | 0 | 0 | 9 |
| Mountain | 3 | na | na | na | na | na | na | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Pacific | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| US Total | 44 | na | na | na | na | na | na | 44 | 0 | 0 | 0 | 0 | 0 | 44 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 88 | na | na | na | na | na | na | 88 | 0 | 0 | 0 | 0 | 0 | 88 |
| New England | 30 | na | na | na | na | na | na | 30 | 0 | 0 | 0 | 0 | 0 | 30 |
| Mid Atlantic | 59 | na | na | na | na | na | na | 59 | 0 | 0 | 0 | 0 | 0 | 59 |
| Midwest | 75 | na | na | na | na | na | na | 75 | 0 | 0 | 0 | 0 | 0 | 75 |
| E N Central | 47 | na | na | na | na | na | na | 47 | 0 | 0 | 0 | 0 | 0 | 47 |
| W N Central | 28 | na | na | na | na | na | na | 28 | 0 | 0 | 0 | 0 | 0 | 28 |
| South | 168 | na | na | na | na | na | na | 168 | 0 | 0 | 0 | 0 | 0 | 168 |
| South Atlantic | 87 | na | na | na | na | na | na | 87 | 0 | 0 | 0 | 0 | 0 | 87 |
| E S Central | 27 | na | na | na | na | na | na | 27 | 0 | 0 | 0 | 0 | 0 | 27 |
| W S Central | 54 | na | na | na | na | na | na | 54 | 0 | 0 | 0 | 0 | 0 | 54 |
| West | 90 | na | na | na | na | na | na | 90 | 0 | 0 | 0 | 0 | 0 | 90 |
| Mountain | 16 | na | na | na | na | na | na | 16 | 0 | 0 | 0 | 0 | 0 | 16 |
| Pacific | 74 | na | na | na | na | na | na | 74 | 0 | 0 | 0 | 0 | 0 | 74 |
| US Total | 421 | na | na | na | na | na | na | 421 | 0 | 0 | 0 | 0 | 0 | 421 |

TABLE 9: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN STAIRS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 1 | na | na | na | na | na | na | 1 | 2 | 0 | 2 | 0 | 2 | 2 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W S Central | 1 | na | na | na | na | na | na | 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US Total | 2 | na | na | na | na | na | na | 2 | 3 | 0 | 3 | 0 | 3 | 3 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 80 | na | na | na | na | na | na | 80 | 0 | 0 | 0 | 0 | 0 | 80 |
| New England | 27 | na | na | na | na | na | na | 27 | 0 | 0 | 0 | 0 | 0 | 27 |
| Mid Atlantic | 53 | na | na | na | na | na | na | 53 | 0 | 0 | 0 | 0 | 0 | 53 |
| Midwest | 119 | na | na | na | na | na | na | 119 | 0 | 0 | 0 | 0 | 0 | 119 |
| E N Central | 74 | na | na | na | na | na | na | 74 | 0 | 0 | 0 | 0 | 0 | 74 |
| W N Central | 45 | na | na | na | na | na | na | 45 | 0 | 0 | 0 | 0 | 0 | 45 |
| South | 236 | na | na | na | na | na | na | 236 | 0 | 0 | 0 | 0 | 0 | 236 |
| South Atlantic | 133 | na | na | na | na | na | na | 133 | 0 | 0 | 0 | 0 | 0 | 133 |
| E S Central | 22 | na | na | na | na | na | na | 22 | 0 | 0 | 0 | 0 | 0 | 22 |
| W S Central | 81 | na | na | na | na | na | na | 81 | 0 | 0 | 0 | 0 | 0 | 81 |
| West | 98 | na | na | na | na | na | na | 98 | 0 | 0 | 0 | 0 | 0 | 98 |
| Mountain | 29 | na | na | na | na | na | na | 29 | 0 | 0 | 0 | 0 | 0 | 29 |
| Pacific | 69 | na | na | na | na | na | na | 69 | 0 | 0 | 0 | 0 | 0 | 69 |
| US Total | 533 | na | na | na | na | na | na | 533 | 0 | 0 | 0 | 0 | 0 | 533 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 20 | na | na | na | na | na | na | 20 | 0 | 0 | 0 | 0 | 0 | 20 |
| New England | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| Mid Atlantic | 15 | na | na | na | na | na | na | 15 | 0 | 0 | 0 | 0 | 0 | 15 |
| Midwest | 33 | na | na | na | na | na | na | 33 | 0 | 0 | 0 | 0 | 0 | 33 |
| E N Central | 16 | na | na | na | na | na | na | 16 | 0 | 0 | 0 | 0 | 0 | 16 |
| W N Central | 17 | na | na | na | na | na | na | 17 | 0 | 0 | 0 | 0 | 0 | 17 |
| South | 106 | na | na | na | na | na | na | 106 | 0 | 0 | 0 | 0 | 0 | 106 |
| South Atlantic | 68 | na | na | na | na | na | na | 68 | 0 | 0 | 0 | 0 | 0 | 68 |
| E S Central | 15 | na | na | na | na | na | na | 15 | 0 | 0 | 0 | 0 | 0 | 15 |
| W S Central | 23 | na | na | na | na | na | na | 23 | 0 | 0 | 0 | 0 | 0 | 23 |
| West | 33 | na | na | na | na | na | na | 33 | 0 | 0 | 0 | 0 | 0 | 33 |
| Mountain | 13 | na | na | na | na | na | na | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| Pacific | 20 | na | na | na | na | na | na | 20 | 0 | 0 | 0 | 0 | 0 | 20 |
| US Total | 192 | na | na | na | na | na | na | 192 | 0 | 0 | 0 | 0 | 0 | 192 |

TABLE 9: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN STAIRS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 244 | na | na | na | na | na | na | 244 | 0 | 0 | 0 | 0 | 0 | 244 |
| New England | 75 | na | na | na | na | na | na | 75 | 0 | 0 | 0 | 0 | 0 | 75 |
| Mid Atlantic | 169 | na | na | na | na | na | na | 169 | 0 | 0 | 0 | 0 | 0 | 169 |
| Midwest | 323 | na | na | na | na | na | na | 323 | 0 | 0 | 0 | 0 | 0 | 323 |
| E N Central | 179 | na | na | na | na | na | na | 179 | 0 | 0 | 0 | 0 | 0 | 179 |
| W N Central | 144 | na | na | na | na | na | na | 144 | 0 | 0 | 0 | 0 | 0 | 144 |
| South | 722 | na | na | na | na | na | na | 722 | 2 | 0 | 2 | 0 | 2 | 722 |
| South Atlantic | 405 | na | na | na | na | na | na | 405 | 1 | 0 | 1 | 0 | 1 | 405 |
| E S Central | 98 | na | na | na | na | na | na | 98 | 0 | 0 | 0 | 0 | 0 | 98 |
| W S Central | 219 | na | na | na | na | na | na | 219 | 1 | 0 | 1 | 0 | 1 | 219 |
| West | 347 | na | na | na | na | na | na | 347 | 0 | 0 | 0 | 0 | 0 | 347 |
| Mountain | 107 | na | na | na | na | na | na | 107 | 0 | 0 | 0 | 0 | 0 | 107 |
| Pacific | 240 | na | na | na | na | na | na | 240 | 0 | 0 | 0 | 0 | 0 | 240 |
| US Total | 1,635 | na | na | na | na | na | na | 1,635 | 3 | 0 | 3 | 0 | 3 | 1,636 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 10: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN SIDING, SOFFIT, FASCIA, SHUTTERS & EXTERIOR TRIM IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 1,053 | na[8] | na | na | na | na | na | 1,053 | 0 | 0 | 0 | 0 | 0 | 1,053 |
| New England | 272 | na | na | na | na | na | na | 272 | 0 | 0 | 0 | 0 | 0 | 272 |
| Mid Atlantic | 782 | na | na | na | na | na | na | 782 | 0 | 0 | 0 | 0 | 0 | 782 |
| Midwest | 1,457 | na | na | na | na | na | na | 1,457 | 0 | 0 | 0 | 0 | 0 | 1,457 |
| E N Central | 858 | na | na | na | na | na | na | 858 | 0 | 0 | 0 | 0 | 0 | 858 |
| W N Central | 598 | na | na | na | na | na | na | 598 | 0 | 0 | 0 | 0 | 0 | 598 |
| South | 5,294 | na | na | na | na | na | na | 5,294 | 0 | 0 | 0 | 0 | 0 | 5,294 |
| South Atlantic | 2,794 | na | na | na | na | na | na | 2,794 | 0 | 0 | 0 | 0 | 0 | 2,794 |
| E S Central | 1,081 | na | na | na | na | na | na | 1,081 | 0 | 0 | 0 | 0 | 0 | 1,081 |
| W S Central | 1,418 | na | na | na | na | na | na | 1,418 | 0 | 0 | 0 | 0 | 0 | 1,418 |
| West | 1,222 | na | na | na | na | na | na | 1,222 | 0 | 0 | 0 | 0 | 0 | 1,222 |
| Mountain | 558 | na | na | na | na | na | na | 558 | 0 | 0 | 0 | 0 | 0 | 558 |
| Pacific | 664 | na | na | na | na | na | na | 664 | 0 | 0 | 0 | 0 | 0 | 664 |
| US Total | 9,026 | na | na | na | na | na | na | 9,026 | 0 | 0 | 0 | 0 | 0 | 9,026 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 82 | na | na | na | na | na | na | 82 | 0 | 0 | 0 | 0 | 0 | 82 |
| New England | 22 | na | na | na | na | na | na | 22 | 0 | 0 | 0 | 0 | 0 | 22 |
| Mid Atlantic | 60 | na | na | na | na | na | na | 60 | 0 | 0 | 0 | 0 | 0 | 60 |
| Midwest | 51 | na | na | na | na | na | na | 51 | 0 | 0 | 0 | 0 | 0 | 51 |
| E N Central | 32 | na | na | na | na | na | na | 32 | 0 | 0 | 0 | 0 | 0 | 32 |
| W N Central | 20 | na | na | na | na | na | na | 20 | 0 | 0 | 0 | 0 | 0 | 20 |
| South | 122 | na | na | na | na | na | na | 122 | 0 | 0 | 0 | 0 | 0 | 122 |
| South Atlantic | 58 | na | na | na | na | na | na | 58 | 0 | 0 | 0 | 0 | 0 | 58 |
| E S Central | 18 | na | na | na | na | na | na | 18 | 0 | 0 | 0 | 0 | 0 | 18 |
| W S Central | 45 | na | na | na | na | na | na | 45 | 0 | 0 | 0 | 0 | 0 | 45 |
| West | 50 | na | na | na | na | na | na | 50 | 0 | 0 | 0 | 0 | 0 | 50 |
| Mountain | 18 | na | na | na | na | na | na | 18 | 0 | 0 | 0 | 0 | 0 | 18 |
| Pacific | 32 | na | na | na | na | na | na | 32 | 0 | 0 | 0 | 0 | 0 | 32 |
| US Total | 305 | na | na | na | na | na | na | 305 | 0 | 0 | 0 | 0 | 0 | 305 |

**Table 10: Lumber, Engineered Wood, & Wood Panels Used in Siding, Soffit, Fascia, Shutters & Exterior Trim by Building Type & Geography**

TABLE 10: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN SIDING, SOFFIT, FASCIA, SHUTTERS & EXTERIOR TRIM IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 9 | na | na | na | na | na | na | 9 | 0 | 0 | 0 | 0 | 0 | 9 |
| New England | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Mid Atlantic | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| Midwest | 14 | na | na | na | na | na | na | 14 | 0 | 0 | 0 | 0 | 0 | 14 |
| E N Central | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| W N Central | 10 | na | na | na | na | na | na | 10 | 0 | 0 | 0 | 0 | 0 | 10 |
| South | 34 | na | na | na | na | na | na | 34 | 0 | 0 | 0 | 0 | 0 | 34 |
| South Atlantic | 18 | na | na | na | na | na | na | 18 | 0 | 0 | 0 | 0 | 0 | 18 |
| E S Central | 5 | na | na | na | na | na | na | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| W S Central | 12 | na | na | na | na | na | na | 12 | 0 | 0 | 0 | 0 | 0 | 12 |
| West | 21 | na | na | na | na | na | na | 21 | 0 | 0 | 0 | 0 | 0 | 21 |
| Mountain | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| Pacific | 13 | na | na | na | na | na | na | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| US Total | 78 | na | na | na | na | na | na | 78 | 0 | 0 | 0 | 0 | 0 | 78 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 139 | na | na | na | na | na | na | 139 | 26 | 0 | 26 | 0 | 26 | 152 |
| New England | 57 | na | na | na | na | na | na | 57 | 10 | 0 | 10 | 0 | 10 | 61 |
| Mid Atlantic | 83 | na | na | na | na | na | na | 83 | 16 | 0 | 16 | 0 | 16 | 91 |
| Midwest | 420 | na | na | na | na | na | na | 420 | 43 | 0 | 43 | 0 | 43 | 442 |
| E N Central | 226 | na | na | na | na | na | na | 226 | 29 | 0 | 29 | 0 | 29 | 240 |
| W N Central | 195 | na | na | na | na | na | na | 195 | 15 | 0 | 15 | 0 | 15 | 202 |
| South | 1,324 | na | na | na | na | na | na | 1,324 | 76 | 0 | 76 | 0 | 76 | 1,362 |
| South Atlantic | 440 | na | na | na | na | na | na | 440 | 31 | 0 | 31 | 0 | 31 | 455 |
| E S Central | 178 | na | na | na | na | na | na | 178 | 10 | 0 | 10 | 0 | 10 | 183 |
| W S Central | 706 | na | na | na | na | na | na | 706 | 35 | 0 | 35 | 0 | 35 | 724 |
| West | 477 | na | na | na | na | na | na | 477 | 32 | 0 | 32 | 0 | 32 | 493 |
| Mountain | 98 | na | na | na | na | na | na | 98 | 11 | 0 | 11 | 0 | 11 | 104 |
| Pacific | 379 | na | na | na | na | na | na | 379 | 21 | 0 | 21 | 0 | 21 | 389 |
| US Total | 2,361 | na | na | na | na | na | na | 2,361 | 177 | 0 | 177 | 0 | 177 | 2,449 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 613 | na | na | na | na | na | na | 613 | 409 | 0 | 409 | 2 | 411 | 819 |
| New England | 201 | na | na | na | na | na | na | 201 | 154 | 0 | 154 | 0 | 154 | 278 |
| Mid Atlantic | 413 | na | na | na | na | na | na | 413 | 255 | 0 | 255 | 1 | 257 | 541 |
| Midwest | 519 | na | na | na | na | na | na | 519 | 338 | 0 | 338 | 1 | 339 | 688 |
| E N Central | 315 | na | na | na | na | na | na | 315 | 204 | 0 | 204 | 1 | 205 | 417 |
| W N Central | 204 | na | na | na | na | na | na | 204 | 133 | 0 | 133 | 1 | 134 | 271 |
| South | 1,162 | na | na | na | na | na | na | 1,162 | 744 | 0 | 744 | 3 | 747 | 1,536 |
| South Atlantic | 591 | na | na | na | na | na | na | 591 | 375 | 0 | 375 | 1 | 376 | 779 |
| E S Central | 197 | na | na | na | na | na | na | 197 | 127 | 0 | 127 | 1 | 127 | 261 |
| W S Central | 375 | na | na | na | na | na | na | 375 | 242 | 0 | 242 | 1 | 243 | 497 |
| West | 576 | na | na | na | na | na | na | 576 | 364 | 0 | 364 | 1 | 365 | 759 |
| Mountain | 108 | na | na | na | na | na | na | 108 | 69 | 0 | 69 | 0 | 69 | 143 |
| Pacific | 469 | na | na | na | na | na | na | 469 | 295 | 0 | 295 | 1 | 296 | 616 |
| US Total | 2,871 | na | na | na | na | na | na | 2,871 | 1,855 | 0 | 1,855 | 7 | 1,862 | 3,802 |

TABLE 10: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN SIDING, SOFFIT, FASCIA, SHUTTERS & EXTERIOR TRIM IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 29 | na | na | na | na | na | na | 29 | 0 | 0 | 0 | 0 | 0 | 29 |
| New England | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Mid Atlantic | 26 | na | na | na | na | na | na | 26 | 0 | 0 | 0 | 0 | 0 | 26 |
| Midwest | 78 | na | na | na | na | na | na | 78 | 0 | 0 | 0 | 0 | 0 | 78 |
| E N Central | 34 | na | na | na | na | na | na | 34 | 0 | 0 | 0 | 0 | 0 | 34 |
| W N Central | 43 | na | na | na | na | na | na | 43 | 0 | 0 | 0 | 0 | 0 | 43 |
| South | 260 | na | na | na | na | na | na | 260 | 0 | 0 | 0 | 0 | 0 | 260 |
| South Atlantic | 113 | na | na | na | na | na | na | 113 | 0 | 0 | 0 | 0 | 0 | 113 |
| E S Central | 40 | na | na | na | na | na | na | 40 | 0 | 0 | 0 | 0 | 0 | 40 |
| W S Central | 106 | na | na | na | na | na | na | 106 | 0 | 0 | 0 | 0 | 0 | 106 |
| West | 86 | na | na | na | na | na | na | 86 | 0 | 0 | 0 | 0 | 0 | 86 |
| Mountain | 44 | na | na | na | na | na | na | 44 | 0 | 0 | 0 | 0 | 0 | 44 |
| Pacific | 42 | na | na | na | na | na | na | 42 | 0 | 0 | 0 | 0 | 0 | 42 |
| US Total | 452 | na | na | na | na | na | na | 452 | 0 | 0 | 0 | 0 | 0 | 452 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 273 | na | na | na | na | na | na | 273 | 1 | 0 | 1 | 0 | 1 | 274 |
| New England | 73 | na | na | na | na | na | na | 73 | 1 | 0 | 1 | 0 | 1 | 73 |
| Mid Atlantic | 201 | na | na | na | na | na | na | 201 | 1 | 0 | 1 | 0 | 1 | 201 |
| Midwest | 442 | na | na | na | na | na | na | 442 | 3 | 0 | 3 | 0 | 3 | 443 |
| E N Central | 292 | na | na | na | na | na | na | 292 | 2 | 0 | 2 | 0 | 2 | 293 |
| W N Central | 149 | na | na | na | na | na | na | 149 | 1 | 0 | 1 | 0 | 1 | 150 |
| South | 907 | na | na | na | na | na | na | 907 | 10 | 0 | 10 | 0 | 10 | 912 |
| South Atlantic | 511 | na | na | na | na | na | na | 511 | 6 | 0 | 6 | 0 | 6 | 514 |
| E S Central | 86 | na | na | na | na | na | na | 86 | 1 | 0 | 1 | 0 | 1 | 86 |
| W S Central | 310 | na | na | na | na | na | na | 310 | 4 | 0 | 4 | 0 | 4 | 311 |
| West | 374 | na | na | na | na | na | na | 374 | 2 | 0 | 2 | 0 | 2 | 375 |
| Mountain | 119 | na | na | na | na | na | na | 119 | 1 | 0 | 1 | 0 | 1 | 120 |
| Pacific | 255 | na | na | na | na | na | na | 255 | 2 | 0 | 2 | 0 | 2 | 256 |
| US Total | 1,996 | na | na | na | na | na | na | 1,996 | 17 | 0 | 17 | 0 | 17 | 2,004 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 123 | na | na | na | na | na | na | 123 | 0 | 0 | 0 | 0 | 0 | 123 |
| New England | 35 | na | na | na | na | na | na | 35 | 0 | 0 | 0 | 0 | 0 | 35 |
| Mid Atlantic | 88 | na | na | na | na | na | na | 88 | 0 | 0 | 0 | 0 | 0 | 88 |
| Midwest | 194 | na | na | na | na | na | na | 194 | 0 | 0 | 0 | 0 | 0 | 194 |
| E N Central | 98 | na | na | na | na | na | na | 98 | 0 | 0 | 0 | 0 | 0 | 98 |
| W N Central | 96 | na | na | na | na | na | na | 96 | 0 | 0 | 0 | 0 | 0 | 96 |
| South | 431 | na | na | na | na | na | na | 431 | 0 | 0 | 0 | 0 | 0 | 431 |
| South Atlantic | 219 | na | na | na | na | na | na | 219 | 0 | 0 | 0 | 0 | 0 | 219 |
| E S Central | 99 | na | na | na | na | na | na | 99 | 0 | 0 | 0 | 0 | 0 | 99 |
| W S Central | 114 | na | na | na | na | na | na | 114 | 0 | 0 | 0 | 0 | 0 | 114 |
| West | 164 | na | na | na | na | na | na | 164 | 0 | 0 | 0 | 0 | 0 | 164 |
| Mountain | 64 | na | na | na | na | na | na | 64 | 0 | 0 | 0 | 0 | 0 | 64 |
| Pacific | 100 | na | na | na | na | na | na | 100 | 0 | 0 | 0 | 0 | 0 | 100 |
| US Total | 912 | na | na | na | na | na | na | 912 | 0 | 0 | 0 | 0 | 0 | 912 |

TABLE 10: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN SIDING, SOFFIT, FASCIA, SHUTTERS & EXTERIOR TRIM IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 225 | na | na | na | na | na | na | 225 | 0 | 0 | 0 | 0 | 0 | 225 |
| New England | 76 | na | na | na | na | na | na | 76 | 0 | 0 | 0 | 0 | 0 | 76 |
| Mid Atlantic | 149 | na | na | na | na | na | na | 149 | 0 | 0 | 0 | 0 | 0 | 149 |
| Midwest | 321 | na | na | na | na | na | na | 321 | 0 | 0 | 0 | 0 | 0 | 321 |
| E N Central | 150 | na | na | na | na | na | na | 150 | 0 | 0 | 0 | 0 | 0 | 150 |
| W N Central | 171 | na | na | na | na | na | na | 171 | 0 | 0 | 0 | 0 | 0 | 171 |
| South | 477 | na | na | na | na | na | na | 477 | 0 | 0 | 0 | 0 | 0 | 477 |
| South Atlantic | 189 | na | na | na | na | na | na | 189 | 0 | 0 | 0 | 0 | 0 | 189 |
| E S Central | 75 | na | na | na | na | na | na | 75 | 0 | 0 | 0 | 0 | 0 | 75 |
| W S Central | 213 | na | na | na | na | na | na | 213 | 0 | 0 | 0 | 0 | 0 | 213 |
| West | 338 | na | na | na | na | na | na | 338 | 0 | 0 | 0 | 0 | 0 | 338 |
| Mountain | 120 | na | na | na | na | na | na | 120 | 0 | 0 | 0 | 0 | 0 | 120 |
| Pacific | 218 | na | na | na | na | na | na | 218 | 0 | 0 | 0 | 0 | 0 | 218 |
| US Total | 1,361 | na | na | na | na | na | na | 1,361 | 0 | 0 | 0 | 0 | 0 | 1,361 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| New England | 4 | na | na | na | na | na | na | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| Mid Atlantic | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Midwest | 17 | na | na | na | na | na | na | 17 | 0 | 0 | 0 | 0 | 0 | 17 |
| E N Central | 6 | na | na | na | na | na | na | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| W N Central | 11 | na | na | na | na | na | na | 11 | 0 | 0 | 0 | 0 | 0 | 11 |
| South | 37 | na | na | na | na | na | na | 37 | 0 | 0 | 0 | 0 | 0 | 37 |
| South Atlantic | 9 | na | na | na | na | na | na | 9 | 0 | 0 | 0 | 0 | 0 | 9 |
| E S Central | 17 | na | na | na | na | na | na | 17 | 0 | 0 | 0 | 0 | 0 | 17 |
| W S Central | 11 | na | na | na | na | na | na | 11 | 0 | 0 | 0 | 0 | 0 | 11 |
| West | 9 | na | na | na | na | na | na | 9 | 0 | 0 | 0 | 0 | 0 | 9 |
| Mountain | 2 | na | na | na | na | na | na | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Pacific | 7 | na | na | na | na | na | na | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| US Total | 70 | na | na | na | na | na | na | 70 | 0 | 0 | 0 | 0 | 0 | 70 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 2,553 | na | na | na | na | na | na | 2,553 | 436 | 0 | 436 | 2 | 438 | 2,771 |
| New England | 742 | na | na | na | na | na | na | 742 | 164 | 0 | 164 | 0 | 164 | 824 |
| Mid Atlantic | 1,811 | na | na | na | na | na | na | 1,811 | 272 | 0 | 272 | 1 | 273 | 1,947 |
| Midwest | 3,512 | na | na | na | na | na | na | 3,512 | 384 | 0 | 384 | 1 | 385 | 3,705 |
| E N Central | 2,016 | na | na | na | na | na | na | 2,016 | 235 | 0 | 235 | 1 | 235 | 2,133 |
| W N Central | 1,497 | na | na | na | na | na | na | 1,497 | 149 | 0 | 149 | 1 | 150 | 1,572 |
| South | 10,048 | na | na | na | na | na | na | 10,048 | 830 | 0 | 830 | 3 | 833 | 10,465 |
| South Atlantic | 4,941 | na | na | na | na | na | na | 4,941 | 412 | 0 | 412 | 1 | 413 | 5,148 |
| E S Central | 1,797 | na | na | na | na | na | na | 1,797 | 138 | 0 | 138 | 1 | 138 | 1,866 |
| W S Central | 3,310 | na | na | na | na | na | na | 3,310 | 281 | 0 | 281 | 1 | 282 | 3,451 |
| West | 3,318 | na | na | na | na | na | na | 3,318 | 399 | 0 | 399 | 1 | 400 | 3,518 |
| Mountain | 1,138 | na | na | na | na | na | na | 1,138 | 81 | 0 | 81 | 0 | 81 | 1,178 |
| Pacific | 2,180 | na | na | na | na | na | na | 2,180 | 318 | 0 | 318 | 1 | 318 | 2,340 |
| US Total | 19,431 | na | na | na | na | na | na | 19,431 | 2,049 | 0 | 2,049 | 7 | 2,056 | 20,459 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 11: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FINISHED FLOORS, WALLS, & CEILINGS IN LOW-RISE NONRESIDENTIALBUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 10 | na[8] | na | na | na | na | na | 10 | na | na | na | 3,302 | 3,302 | 1,661 |
| New England | 6 | na | na | na | na | na | na | 6 | na | na | na | 1,827 | 1,827 | 920 |
| Mid Atlantic | 4 | na | na | na | na | na | na | 4 | na | na | na | 1,475 | 1,475 | 742 |
| Midwest | 15 | na | na | na | na | na | na | 15 | na | na | na | 5,063 | 5,063 | 2,546 |
| E N Central | 9 | na | na | na | na | na | na | 9 | na | na | na | 3,073 | 3,073 | 1,545 |
| W N Central | 6 | na | na | na | na | na | na | 6 | na | na | na | 1,990 | 1,990 | 1,001 |
| South | 22 | na | na | na | na | na | na | 22 | na | na | na | 8,145 | 8,145 | 4,095 |
| South Atlantic | 15 | na | na | na | na | na | na | 15 | na | na | na | 5,246 | 5,246 | 2,638 |
| E S Central | 2 | na | na | na | na | na | na | 2 | na | na | na | 767 | 767 | 386 |
| W S Central | 6 | na | na | na | na | na | na | 6 | na | na | na | 2,132 | 2,132 | 1,071 |
| West | 11 | na | na | na | na | na | na | 11 | na | na | na | 3,839 | 3,839 | 1,930 |
| Mountain | 3 | na | na | na | na | na | na | 3 | na | na | na | 1,352 | 1,352 | 679 |
| Pacific | 7 | na | na | na | na | na | na | 7 | na | na | na | 2,488 | 2,488 | 1,251 |
| US Total | 58 | na | na | na | na | na | na | 58 | na | na | na | 20,350 | 20,350 | 10,233 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | na | na | na | 0 | 0 | 0 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | na | na | na | 430 | 430 | 215 |
| New England | 0 | na | na | na | na | na | na | 0 | na | na | na | 144 | 144 | 72 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 285 | 285 | 143 |
| Midwest | 0 | na | na | na | na | na | na | 0 | na | na | na | 364 | 364 | 182 |
| E N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 223 | 223 | 112 |
| W N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 141 | 141 | 71 |
| South | 0 | na | na | na | na | na | na | 0 | na | na | na | 679 | 679 | 340 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 415 | 415 | 207 |
| E S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 100 | 100 | 50 |
| W S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 164 | 164 | 82 |
| West | 0 | na | na | na | na | na | na | 0 | na | na | na | 292 | 292 | 146 |
| Mountain | 0 | na | na | na | na | na | na | 0 | na | na | na | 92 | 92 | 46 |
| Pacific | 0 | na | na | na | na | na | na | 0 | na | na | na | 201 | 201 | 100 |
| US Total | 0 | na | na | na | na | na | na | 0 | na | na | na | 1,766 | 1,766 | 883 |

**Table 11: Lumber, Engineered Wood, & Wood Panels Used in Finished Floors, Walls, & Ceilings by Building Type & Geography**

TABLE 11: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FINISHED FLOORS, WALLS, & CEILINGS IN LOW-RISE NONRESIDENTIALBUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 128 | na | na | na | na | na | na | 128 | na | na | na | 35 | 35 | 146 |
| New England | 15 | na | na | na | na | na | na | 15 | na | na | na | 5 | 5 | 18 |
| Mid Atlantic | 113 | na | na | na | na | na | na | 113 | na | na | na | 31 | 31 | 128 |
| Midwest | 260 | na | na | na | na | na | na | 260 | na | na | na | 70 | 70 | 295 |
| E N Central | 93 | na | na | na | na | na | na | 93 | na | na | na | 23 | 23 | 105 |
| W N Central | 167 | na | na | na | na | na | na | 167 | na | na | na | 46 | 46 | 190 |
| South | 642 | na | na | na | na | na | na | 642 | na | na | na | 163 | 163 | 723 |
| South Atlantic | 351 | na | na | na | na | na | na | 351 | na | na | na | 89 | 89 | 395 |
| E S Central | 93 | na | na | na | na | na | na | 93 | na | na | na | 25 | 25 | 106 |
| W S Central | 198 | na | na | na | na | na | na | 198 | na | na | na | 49 | 49 | 223 |
| West | 347 | na | na | na | na | na | na | 347 | na | na | na | 107 | 107 | 401 |
| Mountain | 186 | na | na | na | na | na | na | 186 | na | na | na | 46 | 46 | 209 |
| Pacific | 161 | na | na | na | na | na | na | 161 | na | na | na | 61 | 61 | 192 |
| US Total | 1,377 | na | na | na | na | na | na | 1,377 | na | na | na | 375 | 375 | 1,565 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 9,256 | na | na | na | na | na | na | 9,256 | na | na | na | 1,291 | 1,291 | 9,902 |
| New England | 3,664 | na | na | na | na | na | na | 3,664 | na | na | na | 688 | 688 | 4,008 |
| Mid Atlantic | 5,592 | na | na | na | na | na | na | 5,592 | na | na | na | 603 | 603 | 5,893 |
| Midwest | 16,881 | na | na | na | na | na | na | 16,881 | na | na | na | 1,793 | 1,793 | 17,778 |
| E N Central | 10,942 | na | na | na | na | na | na | 10,942 | na | na | na | 989 | 989 | 11,436 |
| W N Central | 5,939 | na | na | na | na | na | na | 5,939 | na | na | na | 804 | 804 | 6,341 |
| South | 33,396 | na | na | na | na | na | na | 33,396 | na | na | na | 2,026 | 2,026 | 34,408 |
| South Atlantic | 14,751 | na | na | na | na | na | na | 14,751 | na | na | na | 1,322 | 1,322 | 15,412 |
| E S Central | 4,946 | na | na | na | na | na | na | 4,946 | na | na | na | 163 | 163 | 5,027 |
| W S Central | 13,699 | na | na | na | na | na | na | 13,699 | na | na | na | 541 | 541 | 13,969 |
| West | 12,387 | na | na | na | na | na | na | 12,387 | na | na | na | 1,115 | 1,115 | 12,945 |
| Mountain | 3,984 | na | na | na | na | na | na | 3,984 | na | na | na | 376 | 376 | 4,172 |
| Pacific | 8,402 | na | na | na | na | na | na | 8,402 | na | na | na | 740 | 740 | 8,772 |
| US Total | 71,920 | na | na | na | na | na | na | 71,920 | na | na | na | 6,224 | 6,224 | 75,032 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 1,232 | na | na | na | na | na | na | 1,232 | na | na | na | 618 | 618 | 1,541 |
| New England | 401 | na | na | na | na | na | na | 401 | na | na | na | 206 | 206 | 504 |
| Mid Atlantic | 831 | na | na | na | na | na | na | 831 | na | na | na | 412 | 412 | 1,037 |
| Midwest | 1,074 | na | na | na | na | na | na | 1,074 | na | na | na | 524 | 524 | 1,336 |
| E N Central | 716 | na | na | na | na | na | na | 716 | na | na | na | 332 | 332 | 882 |
| W N Central | 358 | na | na | na | na | na | na | 358 | na | na | na | 192 | 192 | 454 |
| South | 2,786 | na | na | na | na | na | na | 2,786 | na | na | na | 1,211 | 1,211 | 3,391 |
| South Atlantic | 1,519 | na | na | na | na | na | na | 1,519 | na | na | na | 634 | 634 | 1,836 |
| E S Central | 374 | na | na | na | na | na | na | 374 | na | na | na | 186 | 186 | 467 |
| W S Central | 893 | na | na | na | na | na | na | 893 | na | na | na | 390 | 390 | 1,088 |
| West | 1,545 | na | na | na | na | na | na | 1,545 | na | na | na | 657 | 657 | 1,873 |
| Mountain | 283 | na | na | na | na | na | na | 283 | na | na | na | 120 | 120 | 343 |
| Pacific | 1,262 | na | na | na | na | na | na | 1,262 | na | na | na | 537 | 537 | 1,531 |
| US Total | 6,637 | na | na | na | na | na | na | 6,637 | na | na | na | 3,010 | 3,010 | 8,142 |

TABLE 11: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FINISHED FLOORS, WALLS, & CEILINGS IN LOW-RISE NONRESIDENTIALBUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 119 | na | na | na | na | na | na | 119 | na | na | na | 34 | 34 | 136 |
| New England | 9 | na | na | na | na | na | na | 9 | na | na | na | 2 | 2 | 10 |
| Mid Atlantic | 110 | na | na | na | na | na | na | 110 | na | na | na | 32 | 32 | 126 |
| Midwest | 279 | na | na | na | na | na | na | 279 | na | na | na | 84 | 84 | 321 |
| E N Central | 117 | na | na | na | na | na | na | 117 | na | na | na | 32 | 32 | 133 |
| W N Central | 162 | na | na | na | na | na | na | 162 | na | na | na | 52 | 52 | 188 |
| South | 1,077 | na | na | na | na | na | na | 1,077 | na | na | na | 301 | 301 | 1,227 |
| South Atlantic | 394 | na | na | na | na | na | na | 394 | na | na | na | 117 | 117 | 453 |
| E S Central | 157 | na | na | na | na | na | na | 157 | na | na | na | 43 | 43 | 179 |
| W S Central | 525 | na | na | na | na | na | na | 525 | na | na | na | 140 | 140 | 595 |
| West | 324 | na | na | na | na | na | na | 324 | na | na | na | 86 | 86 | 367 |
| Mountain | 157 | na | na | na | na | na | na | 157 | na | na | na | 42 | 42 | 178 |
| Pacific | 167 | na | na | na | na | na | na | 167 | na | na | na | 44 | 44 | 189 |
| US Total | 1,799 | na | na | na | na | na | na | 1,799 | na | na | na | 504 | 504 | 2,051 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 135 | na | na | na | na | na | na | 135 | na | na | na | 245 | 245 | 257 |
| New England | 46 | na | na | na | na | na | na | 46 | na | na | na | 82 | 82 | 87 |
| Mid Atlantic | 90 | na | na | na | na | na | na | 90 | na | na | na | 162 | 162 | 171 |
| Midwest | 177 | na | na | na | na | na | na | 177 | na | na | na | 323 | 323 | 338 |
| E N Central | 104 | na | na | na | na | na | na | 104 | na | na | na | 190 | 190 | 199 |
| W N Central | 73 | na | na | na | na | na | na | 73 | na | na | na | 133 | 133 | 139 |
| South | 326 | na | na | na | na | na | na | 326 | na | na | na | 598 | 598 | 625 |
| South Atlantic | 141 | na | na | na | na | na | na | 141 | na | na | na | 266 | 266 | 274 |
| E S Central | 36 | na | na | na | na | na | na | 36 | na | na | na | 66 | 66 | 69 |
| W S Central | 148 | na | na | na | na | na | na | 148 | na | na | na | 267 | 267 | 282 |
| West | 167 | na | na | na | na | na | na | 167 | na | na | na | 302 | 302 | 319 |
| Mountain | 47 | na | na | na | na | na | na | 47 | na | na | na | 85 | 85 | 90 |
| Pacific | 120 | na | na | na | na | na | na | 120 | na | na | na | 217 | 217 | 229 |
| US Total | 805 | na | na | na | na | na | na | 805 | na | na | na | 1,468 | 1,468 | 1,539 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 369 | na | na | na | na | na | na | 369 | na | na | na | 589 | 589 | 663 |
| New England | 123 | na | na | na | na | na | na | 123 | na | na | na | 169 | 169 | 207 |
| Mid Atlantic | 246 | na | na | na | na | na | na | 246 | na | na | na | 420 | 420 | 456 |
| Midwest | 724 | na | na | na | na | na | na | 724 | na | na | na | 1,047 | 1,047 | 1,247 |
| E N Central | 381 | na | na | na | na | na | na | 381 | na | na | na | 497 | 497 | 630 |
| W N Central | 343 | na | na | na | na | na | na | 343 | na | na | na | 550 | 550 | 618 |
| South | 2,384 | na | na | na | na | na | na | 2,384 | na | na | na | 3,334 | 3,334 | 4,051 |
| South Atlantic | 1,603 | na | na | na | na | na | na | 1,603 | na | na | na | 2,141 | 2,141 | 2,673 |
| E S Central | 275 | na | na | na | na | na | na | 275 | na | na | na | 484 | 484 | 517 |
| W S Central | 507 | na | na | na | na | na | na | 507 | na | na | na | 709 | 709 | 861 |
| West | 1,145 | na | na | na | na | na | na | 1,145 | na | na | na | 1,058 | 1,058 | 1,674 |
| Mountain | 447 | na | na | na | na | na | na | 447 | na | na | na | 399 | 399 | 646 |
| Pacific | 698 | na | na | na | na | na | na | 698 | na | na | na | 659 | 659 | 1,028 |
| US Total | 4,622 | na | na | na | na | na | na | 4,622 | na | na | na | 6,028 | 6,028 | 7,636 |

TABLE 11: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN FINISHED FLOORS, WALLS, & CEILINGS IN LOW-RISE NONRESIDENTIALBUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 383 | na | na | na | na | na | na | 383 | na | na | na | 109 | 109 | 437 |
| New England | 126 | na | na | na | na | na | na | 126 | na | na | na | 38 | 38 | 145 |
| Mid Atlantic | 257 | na | na | na | na | na | na | 257 | na | na | na | 71 | 71 | 292 |
| Midwest | 472 | na | na | na | na | na | na | 472 | na | na | na | 144 | 144 | 544 |
| E N Central | 182 | na | na | na | na | na | na | 182 | na | na | na | 59 | 59 | 212 |
| W N Central | 290 | na | na | na | na | na | na | 290 | na | na | na | 84 | 84 | 332 |
| South | 745 | na | na | na | na | na | na | 745 | na | na | na | 207 | 207 | 848 |
| South Atlantic | 322 | na | na | na | na | na | na | 322 | na | na | na | 88 | 88 | 366 |
| E S Central | 150 | na | na | na | na | na | na | 150 | na | na | na | 37 | 37 | 169 |
| W S Central | 273 | na | na | na | na | na | na | 273 | na | na | na | 81 | 81 | 313 |
| West | 314 | na | na | na | na | na | na | 314 | na | na | na | 139 | 139 | 383 |
| Mountain | 196 | na | na | na | na | na | na | 196 | na | na | na | 55 | 55 | 223 |
| Pacific | 118 | na | na | na | na | na | na | 118 | na | na | na | 84 | 84 | 160 |
| US Total | 1,913 | na | na | na | na | na | na | 1,913 | na | na | na | 599 | 599 | 2,212 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | na | na | na | 197 | 197 | 98 |
| New England | 0 | na | na | na | na | na | na | 0 | na | na | na | 92 | 92 | 46 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 105 | 105 | 52 |
| Midwest | 0 | na | na | na | na | na | na | 0 | na | na | na | 307 | 307 | 153 |
| E N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 120 | 120 | 60 |
| W N Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 186 | 186 | 93 |
| South | 0 | na | na | na | na | na | na | 0 | na | na | na | 479 | 479 | 239 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | na | na | na | 139 | 139 | 69 |
| E S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 166 | 166 | 83 |
| W S Central | 0 | na | na | na | na | na | na | 0 | na | na | na | 174 | 174 | 87 |
| West | 0 | na | na | na | na | na | na | 0 | na | na | na | 384 | 384 | 192 |
| Mountain | 0 | na | na | na | na | na | na | 0 | na | na | na | 21 | 21 | 10 |
| Pacific | 0 | na | na | na | na | na | na | 0 | na | na | na | 363 | 363 | 182 |
| US Total | 0 | na | na | na | na | na | na | 0 | na | na | na | 1,366 | 1,366 | 683 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 11,632 | na | na | na | na | na | na | 11,632 | na | na | na | 6,849 | 6,849 | 15,056 |
| New England | 4,390 | na | na | na | na | na | na | 4,390 | na | na | na | 3,254 | 3,254 | 6,017 |
| Mid Atlantic | 7,242 | na | na | na | na | na | na | 7,242 | na | na | na | 3,595 | 3,595 | 9,040 |
| Midwest | 19,882 | na | na | na | na | na | na | 19,882 | na | na | na | 9,719 | 9,719 | 24,741 |
| E N Central | 12,544 | na | na | na | na | na | na | 12,544 | na | na | na | 5,540 | 5,540 | 15,314 |
| W N Central | 7,338 | na | na | na | na | na | na | 7,338 | na | na | na | 4,178 | 4,178 | 9,428 |
| South | 41,376 | na | na | na | na | na | na | 41,376 | na | na | na | 17,143 | 17,143 | 49,948 |
| South Atlantic | 19,095 | na | na | na | na | na | na | 19,095 | na | na | na | 10,456 | 10,456 | 24,323 |
| E S Central | 6,033 | na | na | na | na | na | na | 6,033 | na | na | na | 2,039 | 2,039 | 7,053 |
| W S Central | 16,248 | na | na | na | na | na | na | 16,248 | na | na | na | 4,648 | 4,648 | 18,572 |
| West | 16,240 | na | na | na | na | na | na | 16,240 | na | na | na | 7,981 | 7,981 | 20,230 |
| Mountain | 5,303 | na | na | na | na | na | na | 5,303 | na | na | na | 2,587 | 2,587 | 6,597 |
| Pacific | 10,937 | na | na | na | na | na | na | 10,937 | na | na | na | 5,394 | 5,394 | 13,633 |
| US Total | 89,130 | na | na | na | na | na | na | 89,130 | na | na | na | 41,691 | 41,691 | 109,975 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 12: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN DOORS, WINDOWS, INTERIOR TRIM & MOLDINGS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 1,153 | na[8] | na | na | na | na | na | 1,153 | na | na | na | 86 | 86 | 1,196 |
| New England | 663 | na | na | na | na | na | na | 663 | na | na | na | 36 | 36 | 681 |
| Mid Atlantic | 490 | na | na | na | na | na | na | 490 | na | na | na | 49 | 49 | 515 |
| Midwest | 1,701 | na | na | na | na | na | na | 1,701 | na | na | na | 131 | 131 | 1,767 |
| E N Central | 1,003 | na | na | na | na | na | na | 1,003 | na | na | na | 72 | 72 | 1,039 |
| W N Central | 699 | na | na | na | na | na | na | 699 | na | na | na | 58 | 58 | 728 |
| South | 2,827 | na | na | na | na | na | na | 2,827 | na | na | na | 343 | 343 | 2,999 |
| South Atlantic | 1,840 | na | na | na | na | na | na | 1,840 | na | na | na | 201 | 201 | 1,941 |
| E S Central | 263 | na | na | na | na | na | na | 263 | na | na | na | 58 | 58 | 292 |
| W S Central | 724 | na | na | na | na | na | na | 724 | na | na | na | 84 | 84 | 766 |
| West | 1,119 | na | na | na | na | na | na | 1,119 | na | na | na | 76 | 76 | 1,157 |
| Mountain | 353 | na | na | na | na | na | na | 353 | na | na | na | 35 | 35 | 370 |
| Pacific | 766 | na | na | na | na | na | na | 766 | na | na | na | 41 | 41 | 787 |
| US Total | 6,801 | na | na | na | na | na | na | 6,801 | na | na | na | 636 | 636 | 7,118 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 218 | na | na | na | na | na | na | 218 | na | na | na | 0 | 0 | 218 |
| New England | 113 | na | na | na | na | na | na | 113 | na | na | na | 0 | 0 | 113 |
| Mid Atlantic | 105 | na | na | na | na | na | na | 105 | na | na | na | 0 | 0 | 105 |
| Midwest | 728 | na | na | na | na | na | na | 728 | na | na | na | 0 | 0 | 728 |
| E N Central | 401 | na | na | na | na | na | na | 401 | na | na | na | 0 | 0 | 401 |
| W N Central | 327 | na | na | na | na | na | na | 327 | na | na | na | 0 | 0 | 327 |
| South | 757 | na | na | na | na | na | na | 757 | na | na | na | 0 | 0 | 757 |
| South Atlantic | 550 | na | na | na | na | na | na | 550 | na | na | na | 0 | 0 | 550 |
| E S Central | 119 | na | na | na | na | na | na | 119 | na | na | na | 0 | 0 | 119 |
| W S Central | 88 | na | na | na | na | na | na | 88 | na | na | na | 0 | 0 | 88 |
| West | 322 | na | na | na | na | na | na | 322 | na | na | na | 0 | 0 | 322 |
| Mountain | 53 | na | na | na | na | na | na | 53 | na | na | na | 0 | 0 | 53 |
| Pacific | 269 | na | na | na | na | na | na | 269 | na | na | na | 0 | 0 | 269 |
| US Total | 2,024 | na | na | na | na | na | na | 2,024 | na | na | na | 0 | 0 | 2,024 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 2,074 | na | na | na | na | na | na | 2,074 | na | na | na | 0 | 0 | 2,074 |
| New England | 322 | na | na | na | na | na | na | 322 | na | na | na | 0 | 0 | 322 |
| Mid Atlantic | 1,752 | na | na | na | na | na | na | 1,752 | na | na | na | 0 | 0 | 1,752 |
| Midwest | 1,277 | na | na | na | na | na | na | 1,277 | na | na | na | 0 | 0 | 1,277 |
| E N Central | 1,078 | na | na | na | na | na | na | 1,078 | na | na | na | 0 | 0 | 1,078 |
| W N Central | 198 | na | na | na | na | na | na | 198 | na | na | na | 0 | 0 | 198 |
| South | 3,027 | na | na | na | na | na | na | 3,027 | na | na | na | 0 | 0 | 3,027 |
| South Atlantic | 1,574 | na | na | na | na | na | na | 1,574 | na | na | na | 0 | 0 | 1,574 |
| E S Central | 821 | na | na | na | na | na | na | 821 | na | na | na | 0 | 0 | 821 |
| W S Central | 632 | na | na | na | na | na | na | 632 | na | na | na | 0 | 0 | 632 |
| West | 1,255 | na | na | na | na | na | na | 1,255 | na | na | na | 0 | 0 | 1,255 |
| Mountain | 400 | na | na | na | na | na | na | 400 | na | na | na | 0 | 0 | 400 |
| Pacific | 855 | na | na | na | na | na | na | 855 | na | na | na | 0 | 0 | 855 |
| US Total | 7,632 | na | na | na | na | na | na | 7,632 | na | na | na | 0 | 0 | 7,632 |

**Table 12: Lumber, Engineered Wood, & Wood Panels Used in Doors, Windows, Interior Trim & Moldings by Building Type & Geography**

TABLE 12: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN DOORS, WINDOWS, INTERIOR TRIM & MOLDINGS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 587 | na | na | na | na | na | na | 587 | na | na | na | 35 | 35 | 605 |
| New England | 68 | na | na | na | na | na | na | 68 | na | na | na | 0 | 0 | 68 |
| Mid Atlantic | 519 | na | na | na | na | na | na | 519 | na | na | na | 35 | 35 | 536 |
| Midwest | 1,096 | na | na | na | na | na | na | 1,096 | na | na | na | 0 | 0 | 1,096 |
| E N Central | 389 | na | na | na | na | na | na | 389 | na | na | na | 0 | 0 | 389 |
| W N Central | 707 | na | na | na | na | na | na | 707 | na | na | na | 0 | 0 | 707 |
| South | 2,976 | na | na | na | na | na | na | 2,976 | na | na | na | 249 | 249 | 3,100 |
| South Atlantic | 1,498 | na | na | na | na | na | na | 1,498 | na | na | na | 30 | 30 | 1,513 |
| E S Central | 394 | na | na | na | na | na | na | 394 | na | na | na | 0 | 0 | 394 |
| W S Central | 1,084 | na | na | na | na | na | na | 1,084 | na | na | na | 219 | 219 | 1,193 |
| West | 1,808 | na | na | na | na | na | na | 1,808 | na | na | na | 58 | 58 | 1,837 |
| Mountain | 815 | na | na | na | na | na | na | 815 | na | na | na | 58 | 58 | 844 |
| Pacific | 993 | na | na | na | na | na | na | 993 | na | na | na | 0 | 0 | 993 |
| US Total | 6,466 | na | na | na | na | na | na | 6,466 | na | na | na | 342 | 342 | 6,637 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 1,600 | na | na | na | na | na | na | 1,600 | na | na | na | 14 | 14 | 1,607 |
| New England | 658 | na | na | na | na | na | na | 658 | na | na | na | 6 | 6 | 661 |
| Mid Atlantic | 943 | na | na | na | na | na | na | 943 | na | na | na | 7 | 7 | 947 |
| Midwest | 3,724 | na | na | na | na | na | na | 3,724 | na | na | na | 27 | 27 | 3,738 |
| E N Central | 2,474 | na | na | na | na | na | na | 2,474 | na | na | na | 17 | 17 | 2,482 |
| W N Central | 1,251 | na | na | na | na | na | na | 1,251 | na | na | na | 10 | 10 | 1,256 |
| South | 6,788 | na | na | na | na | na | na | 6,788 | na | na | na | 115 | 115 | 6,845 |
| South Atlantic | 2,882 | na | na | na | na | na | na | 2,882 | na | na | na | 49 | 49 | 2,906 |
| E S Central | 862 | na | na | na | na | na | na | 862 | na | na | na | 12 | 12 | 868 |
| W S Central | 3,044 | na | na | na | na | na | na | 3,044 | na | na | na | 54 | 54 | 3,071 |
| West | 2,321 | na | na | na | na | na | na | 2,321 | na | na | na | 31 | 31 | 2,337 |
| Mountain | 737 | na | na | na | na | na | na | 737 | na | na | na | 6 | 6 | 740 |
| Pacific | 1,584 | na | na | na | na | na | na | 1,584 | na | na | na | 25 | 25 | 1,596 |
| US Total | 14,433 | na | na | na | na | na | na | 14,433 | na | na | na | 186 | 186 | 14,527 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 3,154 | na | na | na | na | na | na | 3,154 | na | na | na | 2,033 | 2,033 | 4,170 |
| New England | 581 | na | na | na | na | na | na | 581 | na | na | na | 225 | 225 | 694 |
| Mid Atlantic | 2,573 | na | na | na | na | na | na | 2,573 | na | na | na | 1,808 | 1,808 | 3,477 |
| Midwest | 2,436 | na | na | na | na | na | na | 2,436 | na | na | na | 1,386 | 1,386 | 3,129 |
| E N Central | 1,747 | na | na | na | na | na | na | 1,747 | na | na | na | 1,076 | 1,076 | 2,285 |
| W N Central | 689 | na | na | na | na | na | na | 689 | na | na | na | 309 | 309 | 843 |
| South | 7,561 | na | na | na | na | na | na | 7,561 | na | na | na | 4,735 | 4,735 | 9,928 |
| South Atlantic | 4,449 | na | na | na | na | na | na | 4,449 | na | na | na | 2,977 | 2,977 | 5,938 |
| E S Central | 1,031 | na | na | na | na | na | na | 1,031 | na | na | na | 584 | 584 | 1,323 |
| W S Central | 2,081 | na | na | na | na | na | na | 2,081 | na | na | na | 1,174 | 1,174 | 2,668 |
| West | 3,810 | na | na | na | na | na | na | 3,810 | na | na | na | 2,206 | 2,206 | 4,913 |
| Mountain | 650 | na | na | na | na | na | na | 650 | na | na | na | 358 | 358 | 829 |
| Pacific | 3,160 | na | na | na | na | na | na | 3,160 | na | na | na | 1,848 | 1,848 | 4,084 |
| US Total | 16,961 | na | na | na | na | na | na | 16,961 | na | na | na | 10,359 | 10,359 | 22,141 |

TABLE 12: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN DOORS, WINDOWS, INTERIOR TRIM & MOLDINGS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 203 | na | na | na | na | na | na | 203 | na | na | na | 0 | 0 | 203 |
| New England | 25 | na | na | na | na | na | na | 25 | na | na | na | 0 | 0 | 25 |
| Mid Atlantic | 179 | na | na | na | na | na | na | 179 | na | na | na | 0 | 0 | 179 |
| Midwest | 359 | na | na | na | na | na | na | 359 | na | na | na | 0 | 0 | 359 |
| E N Central | 166 | na | na | na | na | na | na | 166 | na | na | na | 0 | 0 | 166 |
| W N Central | 193 | na | na | na | na | na | na | 193 | na | na | na | 0 | 0 | 193 |
| South | 1,302 | na | na | na | na | na | na | 1,302 | na | na | na | 0 | 0 | 1,302 |
| South Atlantic | 534 | na | na | na | na | na | na | 534 | na | na | na | 0 | 0 | 534 |
| E S Central | 181 | na | na | na | na | na | na | 181 | na | na | na | 0 | 0 | 181 |
| W S Central | 587 | na | na | na | na | na | na | 587 | na | na | na | 0 | 0 | 587 |
| West | 410 | na | na | na | na | na | na | 410 | na | na | na | 0 | 0 | 410 |
| Mountain | 178 | na | na | na | na | na | na | 178 | na | na | na | 0 | 0 | 178 |
| Pacific | 232 | na | na | na | na | na | na | 232 | na | na | na | 0 | 0 | 232 |
| US Total | 2,273 | na | na | na | na | na | na | 2,273 | na | na | na | 0 | 0 | 2,273 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 7,469 | na | na | na | na | na | na | 7,469 | na | na | na | 5,412 | 5,412 | 10,175 |
| New England | 2,046 | na | na | na | na | na | na | 2,046 | na | na | na | 1,486 | 1,486 | 2,789 |
| Mid Atlantic | 5,422 | na | na | na | na | na | na | 5,422 | na | na | na | 3,927 | 3,927 | 7,385 |
| Midwest | 9,460 | na | na | na | na | na | na | 9,460 | na | na | na | 6,310 | 6,310 | 12,615 |
| E N Central | 5,843 | na | na | na | na | na | na | 5,843 | na | na | na | 3,932 | 3,932 | 7,808 |
| W N Central | 3,617 | na | na | na | na | na | na | 3,617 | na | na | na | 2,378 | 2,378 | 4,806 |
| South | 20,935 | na | na | na | na | na | na | 20,935 | na | na | na | 13,935 | 13,935 | 27,902 |
| South Atlantic | 12,970 | na | na | na | na | na | na | 12,970 | na | na | na | 9,122 | 9,122 | 17,531 |
| E S Central | 2,040 | na | na | na | na | na | na | 2,040 | na | na | na | 1,391 | 1,391 | 2,735 |
| W S Central | 5,925 | na | na | na | na | na | na | 5,925 | na | na | na | 3,422 | 3,422 | 7,636 |
| West | 7,450 | na | na | na | na | na | na | 7,450 | na | na | na | 4,313 | 4,313 | 9,606 |
| Mountain | 2,840 | na | na | na | na | na | na | 2,840 | na | na | na | 2,099 | 2,099 | 3,889 |
| Pacific | 4,609 | na | na | na | na | na | na | 4,609 | na | na | na | 2,215 | 2,215 | 5,717 |
| US Total | 45,312 | na | na | na | na | na | na | 45,312 | na | na | na | 29,971 | 29,971 | 60,298 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 935 | na | na | na | na | na | na | 935 | na | na | na | 249 | 249 | 1,060 |
| New England | 272 | na | na | na | na | na | na | 272 | na | na | na | 81 | 81 | 313 |
| Mid Atlantic | 663 | na | na | na | na | na | na | 663 | na | na | na | 168 | 168 | 748 |
| Midwest | 1,732 | na | na | na | na | na | na | 1,732 | na | na | na | 728 | 728 | 2,096 |
| E N Central | 1,010 | na | na | na | na | na | na | 1,010 | na | na | na | 441 | 441 | 1,230 |
| W N Central | 722 | na | na | na | na | na | na | 722 | na | na | na | 287 | 287 | 865 |
| South | 5,418 | na | na | na | na | na | na | 5,418 | na | na | na | 2,114 | 2,114 | 6,476 |
| South Atlantic | 3,013 | na | na | na | na | na | na | 3,013 | na | na | na | 1,069 | 1,069 | 3,548 |
| E S Central | 499 | na | na | na | na | na | na | 499 | na | na | na | 241 | 241 | 620 |
| W S Central | 1,906 | na | na | na | na | na | na | 1,906 | na | na | na | 804 | 804 | 2,308 |
| West | 2,667 | na | na | na | na | na | na | 2,667 | na | na | na | 1,580 | 1,580 | 3,457 |
| Mountain | 1,323 | na | na | na | na | na | na | 1,323 | na | na | na | 958 | 958 | 1,802 |
| Pacific | 1,344 | na | na | na | na | na | na | 1,344 | na | na | na | 622 | 622 | 1,655 |
| US Total | 10,753 | na | na | na | na | na | na | 10,753 | na | na | na | 4,671 | 4,671 | 13,088 |

TABLE 12: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN DOORS, WINDOWS, INTERIOR TRIM & MOLDINGS IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] | I-Joist | Glulam | SCL[2] | Rim Board[3] | CLT[4] | Total[5] | TOTAL | Softwood Plywood | OSB | Total | Panels[6] | Total[7] | TOTAL |
| | *Th. bf* | *Th. lf* | *Th. bf* | *Th. cf* | *Th. ft²* | *Th. cf* | *Th. bfe* | *Th. bfe* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 96 | na | na | na | na | na | na | 96 | na | na | na | 31 | 31 | 112 |
| New England | 33 | na | na | na | na | na | na | 33 | na | na | na | 14 | 14 | 39 |
| Mid Atlantic | 64 | na | na | na | na | na | na | 64 | na | na | na | 18 | 18 | 73 |
| Midwest | 68,291 | na | na | na | na | na | na | 68,291 | na | na | na | 9 | 9 | 68,295 |
| E N Central | 68,224 | na | na | na | na | na | na | 68,224 | na | na | na | 0 | 0 | 68,224 |
| W N Central | 67 | na | na | na | na | na | na | 67 | na | na | na | 9 | 9 | 72 |
| South | 297 | na | na | na | na | na | na | 297 | na | na | na | 109 | 109 | 352 |
| South Atlantic | 119 | na | na | na | na | na | na | 119 | na | na | na | 44 | 44 | 141 |
| E S Central | 54 | na | na | na | na | na | na | 54 | na | na | na | 27 | 27 | 67 |
| W S Central | 124 | na | na | na | na | na | na | 124 | na | na | na | 38 | 38 | 143 |
| West | 114 | na | na | na | na | na | na | 114 | na | na | na | 55 | 55 | 141 |
| Mountain | 81 | na | na | na | na | na | na | 81 | na | na | na | 47 | 47 | 104 |
| Pacific | 33 | na | na | na | na | na | na | 33 | na | na | na | 9 | 9 | 37 |
| US Total | 68,798 | na | na | na | na | na | na | 68,798 | na | na | na | 204 | 204 | 68,900 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 167 | na | na | na | na | na | na | 167 | na | na | na | 0 | 0 | 167 |
| New England | 50 | na | na | na | na | na | na | 50 | na | na | na | 0 | 0 | 50 |
| Mid Atlantic | 117 | na | na | na | na | na | na | 117 | na | na | na | 0 | 0 | 117 |
| Midwest | 330 | na | na | na | na | na | na | 330 | na | na | na | 0 | 0 | 330 |
| E N Central | 115 | na | na | na | na | na | na | 115 | na | na | na | 0 | 0 | 115 |
| W N Central | 215 | na | na | na | na | na | na | 215 | na | na | na | 0 | 0 | 215 |
| South | 352 | na | na | na | na | na | na | 352 | na | na | na | 0 | 0 | 352 |
| South Atlantic | 142 | na | na | na | na | na | na | 142 | na | na | na | 0 | 0 | 142 |
| E S Central | 20 | na | na | na | na | na | na | 20 | na | na | na | 0 | 0 | 20 |
| W S Central | 190 | na | na | na | na | na | na | 190 | na | na | na | 0 | 0 | 190 |
| West | 514 | na | na | na | na | na | na | 514 | na | na | na | 0 | 0 | 514 |
| Mountain | 24 | na | na | na | na | na | na | 24 | na | na | na | 0 | 0 | 24 |
| Pacific | 490 | na | na | na | na | na | na | 490 | na | na | na | 0 | 0 | 490 |
| US Total | 1,363 | na | na | na | na | na | na | 1,363 | na | na | na | 0 | 0 | 1,363 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 17,657 | na | na | na | na | na | na | 17,657 | na | na | na | 7,860 | 7,860 | 21,587 |
| New England | 4,830 | na | na | na | na | na | na | 4,830 | na | na | na | 1,848 | 1,848 | 5,754 |
| Mid Atlantic | 12,827 | na | na | na | na | na | na | 12,827 | na | na | na | 6,013 | 6,013 | 15,833 |
| Midwest | 91,132 | na | na | na | na | na | na | 91,132 | na | na | na | 8,590 | 8,590 | 95,427 |
| E N Central | 82,448 | na | na | na | na | na | na | 82,448 | na | na | na | 5,538 | 5,538 | 85,217 |
| W N Central | 8,684 | na | na | na | na | na | na | 8,684 | na | na | na | 3,052 | 3,052 | 10,210 |
| South | 52,240 | na | na | na | na | na | na | 52,240 | na | na | na | 21,601 | 21,601 | 63,040 |
| South Atlantic | 29,571 | na | na | na | na | na | na | 29,571 | na | na | na | 13,493 | 13,493 | 36,317 |
| E S Central | 6,283 | na | na | na | na | na | na | 6,283 | na | na | na | 2,313 | 2,313 | 7,439 |
| W S Central | 16,386 | na | na | na | na | na | na | 16,386 | na | na | na | 5,795 | 5,795 | 19,284 |
| West | 21,789 | na | na | na | na | na | na | 21,789 | na | na | na | 8,320 | 8,320 | 25,949 |
| Mountain | 7,453 | na | na | na | na | na | na | 7,453 | na | na | na | 3,560 | 3,560 | 9,233 |
| Pacific | 14,335 | na | na | na | na | na | na | 14,335 | na | na | na | 4,760 | 4,760 | 16,715 |
| US Total | 182,818 | na | na | na | na | na | na | 182,818 | na | na | na | 46,371 | 46,371 | 206,003 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 13: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN CABINETRY & BUILT-IN FURNITURE
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 235 | na[8] | na | na | na | na | na | 235 | na | na | na | 3,855 | 3,855 | 2,163 |
| New England | 140 | na | na | na | na | na | na | 140 | na | na | na | 2,296 | 2,296 | 1,289 |
| Mid Atlantic | 95 | na | na | na | na | na | na | 95 | na | na | na | 1,559 | 1,559 | 875 |
| Midwest | 350 | na | na | na | na | na | na | 350 | na | na | na | 5,722 | 5,722 | 3,211 |
| E N Central | 205 | na | na | na | na | na | na | 205 | na | na | na | 3,354 | 3,354 | 1,882 |
| W N Central | 145 | na | na | na | na | na | na | 145 | na | na | na | 2,368 | 2,368 | 1,329 |
| South | 527 | na | na | na | na | na | na | 527 | na | na | na | 8,621 | 8,621 | 4,837 |
| South Atlantic | 349 | na | na | na | na | na | na | 349 | na | na | na | 5,717 | 5,717 | 3,208 |
| E S Central | 44 | na | na | na | na | na | na | 44 | na | na | na | 717 | 717 | 402 |
| W S Central | 134 | na | na | na | na | na | na | 134 | na | na | na | 2,187 | 2,187 | 1,227 |
| West | 244 | na | na | na | na | na | na | 244 | na | na | na | 3,989 | 3,989 | 2,238 |
| Mountain | 76 | na | na | na | na | na | na | 76 | na | na | na | 1,245 | 1,245 | 699 |
| Pacific | 168 | na | na | na | na | na | na | 168 | na | na | na | 2,744 | 2,744 | 1,540 |
| US Total | 1,355 | na | na | na | na | na | na | 1,355 | na | na | na | 22,188 | 22,188 | 12,449 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 6 | na | na | na | na | na | na | 6 | na | na | na | 124 | 124 | 68 |
| New England | 3 | na | na | na | na | na | na | 3 | na | na | na | 56 | 56 | 31 |
| Mid Atlantic | 3 | na | na | na | na | na | na | 3 | na | na | na | 69 | 69 | 38 |
| Midwest | 17 | na | na | na | na | na | na | 17 | na | na | na | 338 | 338 | 186 |
| E N Central | 10 | na | na | na | na | na | na | 10 | na | na | na | 195 | 195 | 107 |
| W N Central | 7 | na | na | na | na | na | na | 7 | na | na | na | 143 | 143 | 78 |
| South | 33 | na | na | na | na | na | na | 33 | na | na | na | 656 | 656 | 361 |
| South Atlantic | 22 | na | na | na | na | na | na | 22 | na | na | na | 431 | 431 | 237 |
| E S Central | 6 | na | na | na | na | na | na | 6 | na | na | na | 115 | 115 | 63 |
| W S Central | 5 | na | na | na | na | na | na | 5 | na | na | na | 110 | 110 | 60 |
| West | 11 | na | na | na | na | na | na | 11 | na | na | na | 226 | 226 | 124 |
| Mountain | 2 | na | na | na | na | na | na | 2 | na | na | na | 47 | 47 | 26 |
| Pacific | 9 | na | na | na | na | na | na | 9 | na | na | na | 179 | 179 | 98 |
| US Total | 67 | na | na | na | na | na | na | 67 | na | na | na | 1,344 | 1,344 | 739 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 303 | na | na | na | na | na | na | 303 | na | na | na | 4,284 | 4,284 | 2,445 |
| New England | 40 | na | na | na | na | na | na | 40 | na | na | na | 570 | 570 | 326 |
| Mid Atlantic | 263 | na | na | na | na | na | na | 263 | na | na | na | 3,713 | 3,713 | 2,120 |
| Midwest | 143 | na | na | na | na | na | na | 143 | na | na | na | 2,017 | 2,017 | 1,151 |
| E N Central | 120 | na | na | na | na | na | na | 120 | na | na | na | 1,691 | 1,691 | 965 |
| W N Central | 23 | na | na | na | na | na | na | 23 | na | na | na | 326 | 326 | 186 |
| South | 378 | na | na | na | na | na | na | 378 | na | na | na | 5,335 | 5,335 | 3,045 |
| South Atlantic | 223 | na | na | na | na | na | na | 223 | na | na | na | 3,154 | 3,154 | 1,801 |
| E S Central | 87 | na | na | na | na | na | na | 87 | na | na | na | 1,224 | 1,224 | 699 |
| W S Central | 68 | na | na | na | na | na | na | 68 | na | na | na | 957 | 957 | 546 |
| West | 141 | na | na | na | na | na | na | 141 | na | na | na | 1,985 | 1,985 | 1,133 |
| Mountain | 48 | na | na | na | na | na | na | 48 | na | na | na | 676 | 676 | 386 |
| Pacific | 93 | na | na | na | na | na | na | 93 | na | na | na | 1,309 | 1,309 | 747 |
| US Total | 965 | na | na | na | na | na | na | 965 | na | na | na | 13,621 | 13,621 | 7,775 |

**Table 13: Lumber, Engineered Wood, & Wood Panels Used in Cabinetry & Built-In Furniture by Building Type & Geography**

TABLE 13: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN CABINETRY & BUILT-IN FURNITURE
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 60 | na | na | na | na | na | na | 60 | na | na | na | 760 | 760 | 439 |
| New England | 7 | na | na | na | na | na | na | 7 | na | na | na | 91 | 91 | 53 |
| Mid Atlantic | 52 | na | na | na | na | na | na | 52 | na | na | na | 669 | 669 | 387 |
| Midwest | 120 | na | na | na | na | na | na | 120 | na | na | na | 1,532 | 1,532 | 886 |
| E N Central | 43 | na | na | na | na | na | na | 43 | na | na | na | 545 | 545 | 315 |
| W N Central | 77 | na | na | na | na | na | na | 77 | na | na | na | 987 | 987 | 571 |
| South | 288 | na | na | na | na | na | na | 288 | na | na | na | 3,679 | 3,679 | 2,128 |
| South Atlantic | 153 | na | na | na | na | na | na | 153 | na | na | na | 1,954 | 1,954 | 1,130 |
| E S Central | 43 | na | na | na | na | na | na | 43 | na | na | na | 551 | 551 | 319 |
| W S Central | 92 | na | na | na | na | na | na | 92 | na | na | na | 1,173 | 1,173 | 678 |
| West | 160 | na | na | na | na | na | na | 160 | na | na | na | 2,037 | 2,037 | 1,178 |
| Mountain | 83 | na | na | na | na | na | na | 83 | na | na | na | 1,053 | 1,053 | 609 |
| Pacific | 77 | na | na | na | na | na | na | 77 | na | na | na | 984 | 984 | 569 |
| US Total | 627 | na | na | na | na | na | na | 627 | na | na | na | 8,007 | 8,007 | 4,631 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 575 | na | na | na | na | na | na | 575 | na | na | na | 6,934 | 6,934 | 4,041 |
| New England | 257 | na | na | na | na | na | na | 257 | na | na | na | 3,157 | 3,157 | 1,835 |
| Mid Atlantic | 318 | na | na | na | na | na | na | 318 | na | na | na | 3,776 | 3,776 | 2,206 |
| Midwest | 1,264 | na | na | na | na | na | na | 1,264 | na | na | na | 15,380 | 15,380 | 8,954 |
| E N Central | 865 | na | na | na | na | na | na | 865 | na | na | na | 10,483 | 10,483 | 6,106 |
| W N Central | 399 | na | na | na | na | na | na | 399 | na | na | na | 4,897 | 4,897 | 2,848 |
| South | 2,620 | na | na | na | na | na | na | 2,620 | na | na | na | 31,953 | 31,953 | 18,596 |
| South Atlantic | 1,164 | na | na | na | na | na | na | 1,164 | na | na | na | 14,152 | 14,152 | 8,240 |
| E S Central | 351 | na | na | na | na | na | na | 351 | na | na | na | 4,307 | 4,307 | 2,505 |
| W S Central | 1,104 | na | na | na | na | na | na | 1,104 | na | na | na | 13,494 | 13,494 | 7,851 |
| West | 1,001 | na | na | na | na | na | na | 1,001 | na | na | na | 12,131 | 12,131 | 7,067 |
| Mountain | 324 | na | na | na | na | na | na | 324 | na | na | na | 3,972 | 3,972 | 2,310 |
| Pacific | 678 | na | na | na | na | na | na | 678 | na | na | na | 8,159 | 8,159 | 4,757 |
| US Total | 5,460 | na | na | na | na | na | na | 5,460 | na | na | na | 66,397 | 66,397 | 38,658 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 172 | na | na | na | na | na | na | 172 | na | na | na | 1,842 | 1,842 | 1,093 |
| New England | 52 | na | na | na | na | na | na | 52 | na | na | na | 566 | 566 | 335 |
| Mid Atlantic | 120 | na | na | na | na | na | na | 120 | na | na | na | 1,276 | 1,276 | 758 |
| Midwest | 192 | na | na | na | na | na | na | 192 | na | na | na | 1,992 | 1,992 | 1,188 |
| E N Central | 123 | na | na | na | na | na | na | 123 | na | na | na | 1,296 | 1,296 | 771 |
| W N Central | 69 | na | na | na | na | na | na | 69 | na | na | na | 696 | 696 | 417 |
| South | 506 | na | na | na | na | na | na | 506 | na | na | na | 5,286 | 5,286 | 3,149 |
| South Atlantic | 249 | na | na | na | na | na | na | 249 | na | na | na | 2,634 | 2,634 | 1,566 |
| E S Central | 89 | na | na | na | na | na | na | 89 | na | na | na | 919 | 919 | 548 |
| W S Central | 168 | na | na | na | na | na | na | 168 | na | na | na | 1,733 | 1,733 | 1,035 |
| West | 287 | na | na | na | na | na | na | 287 | na | na | na | 2,950 | 2,950 | 1,762 |
| Mountain | 54 | na | na | na | na | na | na | 54 | na | na | na | 561 | 561 | 335 |
| Pacific | 233 | na | na | na | na | na | na | 233 | na | na | na | 2,389 | 2,389 | 1,427 |
| US Total | 1,158 | na | na | na | na | na | na | 1,158 | na | na | na | 12,070 | 12,070 | 7,193 |

TABLE 13: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN CABINETRY & BUILT-IN FURNITURE IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 25 | na | na | na | na | na | na | 25 | na | na | na | 335 | 335 | 192 |
| New England | 2 | na | na | na | na | na | na | 2 | na | na | na | 30 | 30 | 17 |
| Mid Atlantic | 23 | na | na | na | na | na | na | 23 | na | na | na | 305 | 305 | 175 |
| Midwest | 63 | na | na | na | na | na | na | 63 | na | na | na | 845 | 845 | 486 |
| E N Central | 25 | na | na | na | na | na | na | 25 | na | na | na | 329 | 329 | 189 |
| W N Central | 38 | na | na | na | na | na | na | 38 | na | na | na | 516 | 516 | 297 |
| South | 271 | na | na | na | na | na | na | 271 | na | na | na | 3,632 | 3,632 | 2,087 |
| South Atlantic | 96 | na | na | na | na | na | na | 96 | na | na | na | 1,286 | 1,286 | 739 |
| E S Central | 40 | na | na | na | na | na | na | 40 | na | na | na | 536 | 536 | 308 |
| W S Central | 135 | na | na | na | na | na | na | 135 | na | na | na | 1,810 | 1,810 | 1,040 |
| West | 79 | na | na | na | na | na | na | 79 | na | na | na | 1,057 | 1,057 | 607 |
| Mountain | 37 | na | na | na | na | na | na | 37 | na | na | na | 491 | 491 | 282 |
| Pacific | 42 | na | na | na | na | na | na | 42 | na | na | na | 566 | 566 | 325 |
| US Total | 437 | na | na | na | na | na | na | 437 | na | na | na | 5,869 | 5,869 | 3,372 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 516 | na | na | na | na | na | na | 516 | na | na | na | 8,295 | 8,295 | 4,663 |
| New England | 175 | na | na | na | na | na | na | 175 | na | na | na | 2,815 | 2,815 | 1,582 |
| Mid Atlantic | 341 | na | na | na | na | na | na | 341 | na | na | na | 5,480 | 5,480 | 3,081 |
| Midwest | 695 | na | na | na | na | na | na | 695 | na | na | na | 11,175 | 11,175 | 6,282 |
| E N Central | 400 | na | na | na | na | na | na | 400 | na | na | na | 6,444 | 6,444 | 3,623 |
| W N Central | 294 | na | na | na | na | na | na | 294 | na | na | na | 4,731 | 4,731 | 2,660 |
| South | 1,245 | na | na | na | na | na | na | 1,245 | na | na | na | 20,036 | 20,036 | 11,263 |
| South Atlantic | 579 | na | na | na | na | na | na | 579 | na | na | na | 9,323 | 9,323 | 5,241 |
| E S Central | 144 | na | na | na | na | na | na | 144 | na | na | na | 2,320 | 2,320 | 1,304 |
| W S Central | 522 | na | na | na | na | na | na | 522 | na | na | na | 8,393 | 8,393 | 4,718 |
| West | 647 | na | na | na | na | na | na | 647 | na | na | na | 10,407 | 10,407 | 5,850 |
| Mountain | 182 | na | na | na | na | na | na | 182 | na | na | na | 2,935 | 2,935 | 1,650 |
| Pacific | 464 | na | na | na | na | na | na | 464 | na | na | na | 7,472 | 7,472 | 4,201 |
| US Total | 3,102 | na | na | na | na | na | na | 3,102 | na | na | na | 49,913 | 49,913 | 28,059 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 73 | na | na | na | na | na | na | 73 | na | na | na | 1,134 | 1,134 | 640 |
| New England | 24 | na | na | na | na | na | na | 24 | na | na | na | 370 | 370 | 209 |
| Mid Atlantic | 49 | na | na | na | na | na | na | 49 | na | na | na | 764 | 764 | 431 |
| Midwest | 144 | na | na | na | na | na | na | 144 | na | na | na | 2,241 | 2,241 | 1,265 |
| E N Central | 72 | na | na | na | na | na | na | 72 | na | na | na | 1,115 | 1,115 | 630 |
| W N Central | 73 | na | na | na | na | na | na | 73 | na | na | na | 1,126 | 1,126 | 635 |
| South | 526 | na | na | na | na | na | na | 526 | na | na | na | 8,168 | 8,168 | 4,610 |
| South Atlantic | 358 | na | na | na | na | na | na | 358 | na | na | na | 5,561 | 5,561 | 3,139 |
| E S Central | 42 | na | na | na | na | na | na | 42 | na | na | na | 653 | 653 | 369 |
| W S Central | 126 | na | na | na | na | na | na | 126 | na | na | na | 1,955 | 1,955 | 1,103 |
| West | 176 | na | na | na | na | na | na | 176 | na | na | na | 2,731 | 2,731 | 1,541 |
| Mountain | 77 | na | na | na | na | na | na | 77 | na | na | na | 1,193 | 1,193 | 673 |
| Pacific | 99 | na | na | na | na | na | na | 99 | na | na | na | 1,538 | 1,538 | 868 |
| US Total | 920 | na | na | na | na | na | na | 920 | na | na | na | 14,274 | 14,274 | 8,057 |

TABLE 13: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN CABINETRY & BUILT-IN FURNITURE IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 62 | na | na | na | na | na | na | 62 | na | na | na | 920 | 920 | 522 |
| New England | 20 | na | na | na | na | na | na | 20 | na | na | na | 296 | 296 | 168 |
| Mid Atlantic | 42 | na | na | na | na | na | na | 42 | na | na | na | 624 | 624 | 354 |
| Midwest | 81 | na | na | na | na | na | na | 81 | na | na | na | 1,200 | 1,200 | 681 |
| E N Central | 32 | na | na | na | na | na | na | 32 | na | na | na | 468 | 468 | 266 |
| W N Central | 49 | na | na | na | na | na | na | 49 | na | na | na | 732 | 732 | 415 |
| South | 112 | na | na | na | na | na | na | 112 | na | na | na | 1,655 | 1,655 | 939 |
| South Atlantic | 46 | na | na | na | na | na | na | 46 | na | na | na | 681 | 681 | 387 |
| E S Central | 22 | na | na | na | na | na | na | 22 | na | na | na | 330 | 330 | 187 |
| W S Central | 43 | na | na | na | na | na | na | 43 | na | na | na | 644 | 644 | 365 |
| West | 39 | na | na | na | na | na | na | 39 | na | na | na | 579 | 579 | 329 |
| Mountain | 22 | na | na | na | na | na | na | 22 | na | na | na | 321 | 321 | 182 |
| Pacific | 17 | na | na | na | na | na | na | 17 | na | na | na | 258 | 258 | 146 |
| US Total | 294 | na | na | na | na | na | na | 294 | na | na | na | 4,354 | 4,354 | 2,471 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 8 | na | na | na | na | na | na | 8 | na | na | na | 127 | 127 | 71 |
| New England | 2 | na | na | na | na | na | na | 2 | na | na | na | 39 | 39 | 22 |
| Mid Atlantic | 5 | na | na | na | na | na | na | 5 | na | na | na | 89 | 89 | 50 |
| Midwest | 7 | na | na | na | na | na | na | 7 | na | na | na | 117 | 117 | 66 |
| E N Central | 4 | na | na | na | na | na | na | 4 | na | na | na | 68 | 68 | 38 |
| W N Central | 3 | na | na | na | na | na | na | 3 | na | na | na | 50 | 50 | 28 |
| South | 11 | na | na | na | na | na | na | 11 | na | na | na | 187 | 187 | 105 |
| South Atlantic | 6 | na | na | na | na | na | na | 6 | na | na | na | 107 | 107 | 60 |
| E S Central | 1 | na | na | na | na | na | na | 1 | na | na | na | 12 | 12 | 7 |
| W S Central | 4 | na | na | na | na | na | na | 4 | na | na | na | 68 | 68 | 38 |
| West | 22 | na | na | na | na | na | na | 22 | na | na | na | 371 | 371 | 208 |
| Mountain | 1 | na | na | na | na | na | na | 1 | na | na | na | 18 | 18 | 10 |
| Pacific | 21 | na | na | na | na | na | na | 21 | na | na | na | 353 | 353 | 198 |
| US Total | 48 | na | na | na | na | na | na | 48 | na | na | na | 803 | 803 | 450 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 2,035 | na | na | na | na | na | na | 2,035 | na | na | na | 28,610 | 28,610 | 16,340 |
| New England | 723 | na | na | na | na | na | na | 723 | na | na | na | 10,286 | 10,286 | 5,866 |
| Mid Atlantic | 1,312 | na | na | na | na | na | na | 1,312 | na | na | na | 18,324 | 18,324 | 10,474 |
| Midwest | 3,076 | na | na | na | na | na | na | 3,076 | na | na | na | 42,560 | 42,560 | 24,356 |
| E N Central | 1,898 | na | na | na | na | na | na | 1,898 | na | na | na | 25,988 | 25,988 | 14,892 |
| W N Central | 1,177 | na | na | na | na | na | na | 1,177 | na | na | na | 16,572 | 16,572 | 9,463 |
| South | 6,517 | na | na | na | na | na | na | 6,517 | na | na | na | 89,208 | 89,208 | 51,120 |
| South Atlantic | 3,246 | na | na | na | na | na | na | 3,246 | na | na | na | 45,001 | 45,001 | 25,747 |
| E S Central | 869 | na | na | na | na | na | na | 869 | na | na | na | 11,684 | 11,684 | 6,711 |
| W S Central | 2,401 | na | na | na | na | na | na | 2,401 | na | na | na | 32,523 | 32,523 | 18,663 |
| West | 2,806 | na | na | na | na | na | na | 2,806 | na | na | na | 38,463 | 38,463 | 22,038 |
| Mountain | 905 | na | na | na | na | na | na | 905 | na | na | na | 12,512 | 12,512 | 7,161 |
| Pacific | 1,901 | na | na | na | na | na | na | 1,901 | na | na | na | 25,951 | 25,951 | 14,877 |
| US Total | 14,433 | na | na | na | na | na | na | 14,433 | na | na | na | 198,841 | 198,841 | 113,854 |

[1]Includes framing lumber and boards.

[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.

[3]Includes OSB and strand lumber rim boards.

[4]Cross laminated timber (CLT). Small volumes due to product infancy.

[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).

[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.

[7]1 $ft^2$, 3/8" basis = 0.5 bfe.

[8]na = Not Applicable

TABLE 14: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN OUTDOOR STRUCTURES
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| STORES | | | | | | | | | | | | | | |
| Northeast | 229 | na[8] | na | na | na | na | na | 229 | 0 | na | 0 | na | 0 | 229 |
| New England | 122 | na | na | na | na | na | na | 122 | 0 | na | 0 | na | 0 | 122 |
| Mid Atlantic | 107 | na | na | na | na | na | na | 107 | 0 | na | 0 | na | 0 | 107 |
| Midwest | 315 | na | na | na | na | na | na | 315 | 0 | na | 0 | na | 0 | 315 |
| E N Central | 189 | na | na | na | na | na | na | 189 | 0 | na | 0 | na | 0 | 189 |
| W N Central | 126 | na | na | na | na | na | na | 126 | 0 | na | 0 | na | 0 | 126 |
| South | 557 | na | na | na | na | na | na | 557 | 4 | na | 4 | na | 4 | 560 |
| South Atlantic | 355 | na | na | na | na | na | na | 355 | 2 | na | 2 | na | 2 | 356 |
| E S Central | 49 | na | na | na | na | na | na | 49 | 0 | na | 0 | na | 0 | 49 |
| W S Central | 153 | na | na | na | na | na | na | 153 | 2 | na | 2 | na | 2 | 155 |
| West | 275 | na | na | na | na | na | na | 275 | 2 | na | 2 | na | 2 | 276 |
| Mountain | 83 | na | na | na | na | na | na | 83 | 0 | na | 0 | na | 0 | 83 |
| Pacific | 191 | na | na | na | na | na | na | 191 | 2 | na | 2 | na | 2 | 192 |
| US Total | 1,376 | na | na | na | na | na | na | 1,376 | 6 | na | 6 | na | 6 | 1,379 |
| INDUSTRIAL | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| South Atlantic | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| West | 5 | na | na | na | na | na | na | 5 | 0 | na | 0 | na | 0 | 5 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 5 | na | na | na | na | na | na | 5 | 0 | na | 0 | na | 0 | 5 |
| US Total | 9 | na | na | na | na | na | na | 9 | 0 | na | 0 | na | 0 | 9 |
| OFFICES | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| West | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| US Total | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |

**Table 14: Lumber, Engineered Wood, & Wood Panels Used in Outdoor Structures by Building Type & Geography**

TABLE 14: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN OUTDOOR STRUCTURES
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| HOTELS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 6 | na | na | na | na | na | na | 6 | 1 | na | 1 | na | 1 | 7 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 6 | na | na | na | na | na | na | 6 | 1 | na | 1 | na | 1 | 7 |
| West | 4 | na | na | na | na | na | na | 4 | 1 | na | 1 | na | 1 | 4 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 4 | na | na | na | na | na | na | 4 | 1 | na | 1 | na | 1 | 4 |
| US Total | 10 | na | na | na | na | na | na | 10 | 2 | na | 2 | na | 2 | 11 |
| SCHOOLS | | | | | | | | | | | | | | |
| Northeast | 12 | na | na | na | na | na | na | 12 | 2 | na | 2 | na | 2 | 13 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 12 | na | na | na | na | na | na | 12 | 2 | na | 2 | na | 2 | 13 |
| Midwest | 12 | na | na | na | na | na | na | 12 | 0 | na | 0 | na | 0 | 12 |
| E N Central | 9 | na | na | na | na | na | na | 9 | 0 | na | 0 | na | 0 | 9 |
| W N Central | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| South | 22 | na | na | na | na | na | na | 22 | 4 | na | 4 | na | 4 | 24 |
| South Atlantic | 15 | na | na | na | na | na | na | 15 | 3 | na | 3 | na | 3 | 17 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 6 | na | na | na | na | na | na | 6 | 1 | na | 1 | na | 1 | 7 |
| West | 40 | na | na | na | na | na | na | 40 | 2 | na | 2 | na | 2 | 41 |
| Mountain | 6 | na | na | na | na | na | na | 6 | 1 | na | 1 | na | 1 | 7 |
| Pacific | 34 | na | na | na | na | na | na | 34 | 1 | na | 1 | na | 1 | 34 |
| US Total | 86 | na | na | na | na | na | na | 86 | 9 | na | 9 | na | 9 | 91 |
| COLLEGES | | | | | | | | | | | | | | |
| Northeast | 10 | na | na | na | na | na | na | 10 | 2 | na | 2 | na | 2 | 11 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 10 | na | na | na | na | na | na | 10 | 2 | na | 2 | na | 2 | 11 |
| Midwest | 11 | na | na | na | na | na | na | 11 | 1 | na | 1 | na | 1 | 11 |
| E N Central | 10 | na | na | na | na | na | na | 10 | 1 | na | 1 | na | 1 | 11 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 9 | na | na | na | na | na | na | 9 | 0 | na | 0 | na | 0 | 9 |
| South Atlantic | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| E S Central | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| W S Central | 1 | na | na | na | na | na | na | 1 | 0 | na | 0 | na | 0 | 1 |
| West | 15 | na | na | na | na | na | na | 15 | 2 | na | 2 | na | 2 | 16 |
| Mountain | 10 | na | na | na | na | na | na | 10 | 1 | na | 1 | na | 1 | 11 |
| Pacific | 5 | na | na | na | na | na | na | 5 | 1 | na | 1 | na | 1 | 6 |
| US Total | 45 | na | na | na | na | na | na | 45 | 5 | na | 5 | na | 5 | 48 |

TABLE 14: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN OUTDOOR STRUCTURES
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RELIGIOUS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 23 | na | na | na | na | na | na | 23 | 4 | na | 4 | na | 4 | 25 |
| South Atlantic | 15 | na | na | na | na | na | na | 15 | 2 | na | 2 | na | 2 | 16 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 8 | na | na | na | na | na | na | 8 | 2 | na | 2 | na | 2 | 9 |
| West | 3 | na | na | na | na | na | na | 3 | 0 | na | 0 | na | 0 | 3 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 3 | na | na | na | na | na | na | 3 | 0 | na | 0 | na | 0 | 3 |
| US Total | 26 | na | na | na | na | na | na | 26 | 4 | na | 4 | na | 4 | 28 |
| HEALTH | | | | | | | | | | | | | | |
| Northeast | 10 | na | na | na | na | na | na | 10 | 1 | na | 1 | na | 1 | 11 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 10 | na | na | na | na | na | na | 10 | 1 | na | 1 | na | 1 | 11 |
| Midwest | 24 | na | na | na | na | na | na | 24 | 3 | na | 3 | na | 3 | 26 |
| E N Central | 20 | na | na | na | na | na | na | 20 | 3 | na | 3 | na | 3 | 22 |
| W N Central | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| South | 70 | na | na | na | na | na | na | 70 | 12 | na | 12 | na | 12 | 76 |
| South Atlantic | 50 | na | na | na | na | na | na | 50 | 8 | na | 8 | na | 8 | 55 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 19 | na | na | na | na | na | na | 19 | 3 | na | 3 | na | 3 | 21 |
| West | 9 | na | na | na | na | na | na | 9 | 0 | na | 0 | na | 0 | 9 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 9 | na | na | na | na | na | na | 9 | 0 | na | 0 | na | 0 | 9 |
| US Total | 113 | na | na | na | na | na | na | 113 | 16 | na | 16 | na | 16 | 121 |
| PUBLIC | | | | | | | | | | | | | | |
| Northeast | 19 | na | na | na | na | na | na | 19 | 3 | na | 3 | na | 3 | 20 |
| New England | 7 | na | na | na | na | na | na | 7 | 1 | na | 1 | na | 1 | 8 |
| Mid Atlantic | 11 | na | na | na | na | na | na | 11 | 2 | na | 2 | na | 2 | 12 |
| Midwest | 21 | na | na | na | na | na | na | 21 | 3 | na | 3 | na | 3 | 23 |
| E N Central | 13 | na | na | na | na | na | na | 13 | 2 | na | 2 | na | 2 | 14 |
| W N Central | 9 | na | na | na | na | na | na | 9 | 1 | na | 1 | na | 1 | 9 |
| South | 50 | na | na | na | na | na | na | 50 | 8 | na | 8 | na | 8 | 54 |
| South Atlantic | 28 | na | na | na | na | na | na | 28 | 5 | na | 5 | na | 5 | 31 |
| E S Central | 11 | na | na | na | na | na | na | 11 | 1 | na | 1 | na | 1 | 12 |
| W S Central | 11 | na | na | na | na | na | na | 11 | 1 | na | 1 | na | 1 | 12 |
| West | 29 | na | na | na | na | na | na | 29 | 2 | na | 2 | na | 2 | 30 |
| Mountain | 4 | na | na | na | na | na | na | 4 | 0 | na | 0 | na | 0 | 4 |
| Pacific | 25 | na | na | na | na | na | na | 25 | 2 | na | 2 | na | 2 | 26 |
| US Total | 120 | na | na | na | na | na | na | 120 | 16 | na | 16 | na | 16 | 128 |

TABLE 14: LUMBER, ENGINEERED WOOD, & WOOD PANELS USED IN OUTDOOR STRUCTURES
IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE,
CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Lumber, Engineered Wood, and Wood Panels | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lumber & Engineered Wood | | | | | | | | Wood Panels | | | | | |
| | | Engineered wood | | | | | | | Structural Panels | | | Non-Structural | | |
| | Lumber[1] *Th. bf* | I-Joist *Th. lf* | Glulam *Th. bf* | SCL[2] *Th. cf* | Rim Board[3] *Th. ft²* | CLT[4] *Th. cf* | Total[5] *Th. bfe* | TOTAL *Th. bfe* | Softwood Plywood *Th. ft²* | OSB *Th. ft²* | Total *Th. ft²* | Panels[6] *Th. ft²* | Total[7] *Th. ft²* | TOTAL *Th. bfe* |
| RECREATION | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| West | 15 | na | na | na | na | na | na | 15 | 3 | na | 3 | na | 3 | 17 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 15 | na | na | na | na | na | na | 15 | 3 | na | 3 | na | 3 | 17 |
| US Total | 15 | na | na | na | na | na | na | 15 | 3 | na | 3 | na | 3 | 17 |
| MISCELLANEOUS | | | | | | | | | | | | | | |
| Northeast | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| New England | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Mid Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Midwest | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W N Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| South Atlantic | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| E S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| W S Central | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| West | 1 | na | na | na | na | na | na | 1 | 0 | na | 0 | na | 0 | 1 |
| Mountain | 0 | na | na | na | na | na | na | 0 | 0 | na | 0 | na | 0 | 0 |
| Pacific | 1 | na | na | na | na | na | na | 1 | 0 | na | 0 | na | 0 | 1 |
| US Total | 1 | na | na | na | na | na | na | 1 | 0 | na | 0 | na | 0 | 1 |
| ALL BUILDINGS | | | | | | | | | | | | | | |
| Northeast | 280 | na | na | na | na | na | na | 280 | 9 | na | 9 | na | 9 | 284 |
| New England | 130 | na | na | na | na | na | na | 130 | 1 | na | 1 | na | 1 | 131 |
| Mid Atlantic | 150 | na | na | na | na | na | na | 150 | 8 | na | 8 | na | 8 | 154 |
| Midwest | 383 | na | na | na | na | na | na | 383 | 8 | na | 8 | na | 8 | 387 |
| E N Central | 241 | na | na | na | na | na | na | 241 | 7 | na | 7 | na | 7 | 245 |
| W N Central | 142 | na | na | na | na | na | na | 142 | 1 | na | 1 | na | 1 | 143 |
| South | 742 | na | na | na | na | na | na | 742 | 32 | na | 32 | na | 32 | 758 |
| South Atlantic | 473 | na | na | na | na | na | na | 473 | 21 | na | 21 | na | 21 | 483 |
| E S Central | 64 | na | na | na | na | na | na | 64 | 1 | na | 1 | na | 1 | 64 |
| W S Central | 206 | na | na | na | na | na | na | 206 | 11 | na | 11 | na | 11 | 211 |
| West | 396 | na | na | na | na | na | na | 396 | 12 | na | 12 | na | 12 | 402 |
| Mountain | 104 | na | na | na | na | na | na | 104 | 3 | na | 3 | na | 3 | 105 |
| Pacific | 292 | na | na | na | na | na | na | 292 | 9 | na | 9 | na | 9 | 297 |
| US Total | 1,802 | na | na | na | na | na | na | 1,802 | 61 | na | 61 | na | 61 | 1,832 |

[1]Includes framing lumber and boards.
[2]Structural Composite Lumber (SCL) includes includes laminated veneer lumber, parallel strand lumber, laminated strand lumber, and oriented strand lumber.
[3]Includes OSB and strand lumber rim boards.
[4]Cross laminated timber (CLT). Small volumes due to product infancy.
[5]Includes glulam, and the board foot equivalent (bfe) of engineered wood (1 lf I-joist = 2 bfe; 1 $ft^3$ SCL and CLT = 16 bfe, 1 $ft^2$, 3/8" basis = 0.5 BF bfe).
[6]Includes hardboard, insulation board, particleboard, medium density fiberboard, and hardwood plywood.
[7]1 $ft^2$, 3/8" basis = 0.5 bfe.
[8]na = Not Applicable

TABLE 15: NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION
BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Application | | | | Census Region | | | | Census Division | | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Lumber (Th. bf)* | | | | | | | | | | | | | | | | | |
| Stores | 8,453 | 284,956 | 36,329 | 62,523 | 32,503 | 72,513 | 261,169 | 26,076 | 9,323 | 23,181 | 40,953 | 31,560 | 184,447 | 34,939 | 41,782 | 13,782 | 12,294 | 392,261 |
| Industrial | 4,028 | 52 | 452 | 0 | 1,910 | 1,081 | 663 | 878 | 1,662 | 248 | 702 | 379 | 242 | 27 | 395 | 168 | 711 | 4,532 |
| Offices | 53,710 | 90,811 | 33,858 | 396 | 59,422 | 32,132 | 69,726 | 17,495 | 21,665 | 37,757 | 21,435 | 10,697 | 44,649 | 10,161 | 14,916 | 9,984 | 7,510 | 178,775 |
| Hotels | 28,605 | 9,372 | 673 | 15 | 5,670 | 9,314 | 17,171 | 6,510 | 2,104 | 3,565 | 4,059 | 5,256 | 9,138 | 1,773 | 6,260 | 2,576 | 3,934 | 38,665 |
| Schools | 7,340 | 131,713 | 73,691 | 5,264 | 17,091 | 62,868 | 104,936 | 33,113 | 5,592 | 11,500 | 46,459 | 16,409 | 45,228 | 18,132 | 41,575 | 8,712 | 24,401 | 218,009 |
| Colleges | 41,304 | 42,293 | 18,421 | 4,558 | 19,625 | 16,189 | 47,458 | 23,304 | 8,729 | 10,896 | 9,534 | 6,655 | 22,212 | 12,060 | 13,186 | 5,262 | 18,042 | 106,576 |
| Religious | 18,121 | 6,649 | 43,734 | 300 | 4,114 | 8,456 | 26,867 | 29,367 | 1,291 | 2,824 | 4,017 | 4,439 | 10,249 | 3,650 | 12,968 | 23,886 | 5,481 | 68,804 |
| Health | 19,654 | 48,991 | 17,788 | 2,079 | 25,099 | 15,681 | 34,087 | 13,645 | 16,899 | 8,200 | 8,759 | 6,922 | 20,545 | 4,520 | 9,022 | 5,608 | 8,037 | 88,512 |
| Public | 33,945 | 65,324 | 20,896 | 1,829 | 23,649 | 27,833 | 51,957 | 18,554 | 11,307 | 12,343 | 15,850 | 11,983 | 31,904 | 7,543 | 12,511 | 7,920 | 10,634 | 121,994 |
| Recreation | 1,665 | 8,552 | 1,703 | 1,434 | 1,493 | 1,817 | 6,594 | 3,452 | 533 | 960 | 595 | 1,221 | 2,887 | 657 | 3,050 | 2,547 | 905 | 13,354 |
| Misc | 6,063 | 14,155 | 762 | 49 | 5,568 | 3,561 | 10,669 | 1,232 | 5,126 | 441 | 1,775 | 1,786 | 6,116 | 903 | 3,650 | 622 | 610 | 21,030 |
| All Buildings | 222,887 | 702,869 | 248,309 | 78,448 | 196,145 | 251,445 | 631,296 | 173,626 | 84,231 | 111,914 | 154,138 | 97,307 | 377,618 | 94,364 | 159,314 | 81,068 | 92,558 | 1,252,512 |
| | *Engineered Wood (Th. bfe)* | | | | | | | | | | | | | | | | | |
| Stores | 11,614 | 9,199 | 0 | 0 | 5,816 | 4,209 | 7,628 | 3,159 | 5,028 | 789 | 3,342 | 867 | 4,687 | 144 | 2,798 | 1,280 | 1,880 | 20,813 |
| Industrial | 38 | 15 | 0 | 0 | 14 | 11 | 21 | 7 | 11 | 3 | 9 | 2 | 10 | 1 | 10 | 4 | 3 | 53 |
| Offices | 76,684 | 3,037 | 1,985 | 0 | 12,042 | 27,976 | 10,529 | 31,159 | 6,880 | 5,162 | 13,632 | 14,344 | 6,482 | 390 | 3,657 | 29,302 | 1,857 | 81,706 |
| Hotels | 38,304 | 6,367 | 1,641 | 0 | 5,826 | 16,528 | 18,031 | 5,927 | 1,570 | 4,255 | 7,816 | 8,712 | 7,221 | 1,559 | 9,252 | 2,246 | 3,681 | 46,311 |
| Schools | 143,703 | 4,407 | 8,595 | 0 | 19,806 | 60,884 | 45,405 | 30,611 | 5,359 | 14,447 | 48,921 | 11,963 | 24,103 | 10,776 | 10,526 | 1,829 | 28,782 | 156,706 |
| Colleges | 24,712 | 969 | 2,921 | 0 | 5,998 | 2,814 | 14,743 | 5,048 | 3,293 | 2,705 | 1,660 | 1,154 | 4,792 | 5,385 | 4,566 | 1,202 | 3,846 | 28,603 |
| Religious | 12,807 | 1,360 | 6,219 | 0 | 4,016 | 3,982 | 8,606 | 3,783 | 98 | 3,918 | 1,857 | 2,125 | 3,470 | 2,280 | 2,856 | 2,956 | 827 | 20,387 |
| Health | 30,906 | 4,762 | 1,008 | 0 | 15,217 | 6,276 | 11,474 | 3,708 | 12,318 | 2,899 | 4,044 | 2,232 | 7,971 | 1,812 | 1,691 | 2,043 | 1,665 | 36,676 |
| Public | 267,969 | 4,937 | 11,931 | 0 | 51,680 | 41,745 | 158,115 | 33,296 | 35,694 | 15,987 | 29,716 | 12,029 | 96,049 | 3,451 | 58,615 | 7,703 | 25,594 | 284,837 |
| Recreation | 6,076 | 6,661 | 0 | 0 | 2,805 | 917 | 7,188 | 1,827 | 253 | 2,552 | 391 | 526 | 3,882 | 1,024 | 2,282 | 931 | 896 | 12,737 |
| Misc | 2,876 | 0 | 8,125 | 0 | 1,883 | 2,639 | 4,310 | 2,169 | 1,479 | 403 | 1,915 | 724 | 1,863 | 139 | 2,308 | 777 | 1,392 | 11,002 |
| All Buildings | 615,689 | 41,714 | 42,426 | 0 | 125,102 | 167,982 | 286,052 | 120,694 | 71,982 | 53,120 | 113,304 | 54,678 | 160,531 | 26,960 | 98,561 | 50,273 | 70,422 | 699,829 |

TABLE 15: NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Application | | | | Census Region | | | | Census Division | | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Structural Panels ($ft^2$)* | | | | | | | | | | | | | | | | | |
| Stores | 374 | 236,358 | 226,392 | 0 | 52,668 | 130,407 | 230,371 | 49,678 | 20,051 | 32,617 | 83,301 | 47,106 | 152,664 | 20,522 | 57,185 | 22,612 | 27,066 | 463,124 |
| Industrial | 85 | 8,352 | 0 | 0 | 785 | 2,275 | 4,610 | 767 | 361 | 424 | 1,475 | 800 | 3,312 | 749 | 549 | 220 | 548 | 8,437 |
| Offices | 21,109 | 121,603 | 56,279 | 0 | 71,651 | 33,061 | 78,479 | 15,800 | 13,916 | 57,735 | 21,614 | 11,447 | 50,216 | 18,470 | 9,792 | 8,400 | 7,400 | 198,991 |
| Hotels | 56,950 | 32,026 | 1,131 | 0 | 8,690 | 21,487 | 44,452 | 15,478 | 775 | 7,915 | 8,170 | 13,317 | 23,129 | 5,675 | 15,648 | 6,838 | 8,640 | 90,107 |
| Schools | 9,250 | 11,950 | 41,906 | 419 | 4,992 | 19,693 | 25,801 | 13,039 | 2,424 | 2,569 | 15,274 | 4,419 | 9,113 | 3,684 | 13,004 | 2,193 | 10,845 | 63,525 |
| Colleges | 28,094 | 65,006 | 35,216 | 2,940 | 18,427 | 19,387 | 68,798 | 24,644 | 7,192 | 11,236 | 13,546 | 5,841 | 33,079 | 20,341 | 15,378 | 6,344 | 18,300 | 131,256 |
| Religious | 20,013 | 5,916 | 18,815 | 0 | 3,413 | 6,782 | 21,476 | 13,072 | 194 | 3,219 | 3,071 | 3,711 | 8,528 | 3,574 | 9,373 | 9,209 | 3,863 | 44,744 |
| Health | 10,274 | 55,570 | 38,901 | 7 | 22,735 | 21,771 | 43,718 | 16,529 | 14,655 | 8,080 | 11,315 | 10,456 | 25,364 | 5,789 | 12,564 | 7,026 | 9,503 | 104,752 |
| Public | 32,429 | 90,020 | 29,992 | 0 | 23,440 | 32,862 | 61,688 | 34,451 | 8,912 | 14,528 | 19,146 | 13,717 | 37,998 | 9,751 | 13,938 | 22,129 | 12,322 | 152,441 |
| Recreation | 0 | 13,623 | 7,925 | 0 | 2,703 | 3,891 | 9,975 | 4,979 | 762 | 1,940 | 718 | 3,173 | 3,431 | 1,624 | 4,920 | 3,702 | 1,277 | 21,548 |
| Misc | 3,651 | 9,765 | 5,487 | 0 | 3,365 | 4,097 | 6,702 | 4,739 | 1,736 | 1,629 | 2,582 | 1,515 | 3,594 | 298 | 2,810 | 691 | 4,049 | 18,904 |
| All Buildings | 182,228 | 650,189 | 462,045 | 3,366 | 212,869 | 295,713 | 596,069 | 193,177 | 70,977 | 141,892 | 180,213 | 115,501 | 350,429 | 90,478 | 155,162 | 89,364 | 103,812 | 1,297,828 |
| | *Non-Structural Panels (Th. $ft^2$)* | | | | | | | | | | | | | | | | | |
| Stores | 0 | na[1] | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Industrial | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offices | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hotels | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Schools | 49,960 | na | na | 0 | 6,162 | 13,662 | 21,851 | 8,284 | 3,694 | 2,468 | 9,999 | 3,663 | 10,009 | 4,776 | 7,066 | 1,141 | 7,143 | 49,960 |
| Colleges | 454 | na | na | 9 | 74 | 75 | 194 | 120 | 19 | 55 | 41 | 34 | 72 | 43 | 78 | 31 | 89 | 463 |
| Religious | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Health | 822 | na | na | 0 | 292 | 151 | 254 | 125 | 159 | 132 | 85 | 65 | 164 | 47 | 44 | 53 | 72 | 822 |
| Public | 26,872 | na | na | 0 | 11,261 | 0 | 10,576 | 5,034 | 10,594 | 667 | 0 | 0 | 7,187 | 44 | 3,345 | 2,763 | 2,271 | 26,872 |
| Recreation | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Misc | 0 | na | na | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| All Buildings | 78,107 | na | na | 9 | 17,789 | 13,888 | 32,876 | 13,563 | 14,467 | 3,322 | 10,126 | 3,762 | 17,432 | 4,910 | 10,533 | 3,988 | 9,575 | 78,115 |

TABLE 15: NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES 2011 (CONTINUED)

| | Application | | | | Census Region | | | | Census Division | | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Lumber, Engineered Wood, Structural Panels, and Non-Structural Panels (Th. bfe)* | | | | | | | | | | | | | | | | | |
| Stores | 20,253 | 412,335 | 149,525 | 62,523 | 64,654 | 141,925 | 383,982 | 54,075 | 24,376 | 40,278 | 85,946 | 55,980 | 265,466 | 45,344 | 73,172 | 26,368 | 27,707 | 644,636 |
| Industrial | 4,108 | 4,243 | 452 | 0 | 2,317 | 2,229 | 2,989 | 1,268 | 1,854 | 463 | 1,449 | 780 | 1,908 | 402 | 679 | 281 | 987 | 8,803 |
| Offices | 140,948 | 154,650 | 63,982 | 396 | 107,289 | 76,639 | 119,494 | 56,554 | 35,503 | 71,786 | 45,875 | 30,764 | 76,240 | 19,786 | 23,469 | 43,487 | 13,067 | 359,976 |
| Hotels | 95,384 | 31,751 | 2,880 | 15 | 15,841 | 36,586 | 57,428 | 20,175 | 4,062 | 11,778 | 15,960 | 20,626 | 27,923 | 6,169 | 23,336 | 8,241 | 11,934 | 130,030 |
| Schools | 180,648 | 142,095 | 103,240 | 5,474 | 42,475 | 140,430 | 174,167 | 74,385 | 14,010 | 28,465 | 108,017 | 32,413 | 78,892 | 33,138 | 62,136 | 12,209 | 62,177 | 431,457 |
| Colleges | 80,290 | 75,765 | 38,951 | 6,033 | 34,874 | 28,735 | 96,697 | 40,734 | 15,627 | 19,246 | 17,987 | 10,747 | 43,579 | 27,638 | 25,479 | 9,651 | 31,082 | 201,038 |
| Religious | 40,935 | 10,967 | 59,361 | 300 | 9,837 | 15,829 | 46,212 | 39,686 | 1,485 | 8,352 | 7,409 | 8,420 | 17,984 | 7,717 | 20,511 | 31,446 | 8,240 | 111,563 |
| Health | 56,108 | 81,538 | 38,247 | 2,083 | 51,829 | 32,918 | 67,547 | 25,681 | 36,624 | 15,205 | 18,504 | 14,414 | 41,280 | 9,250 | 17,017 | 11,191 | 14,490 | 177,975 |
| Public | 331,565 | 115,271 | 47,822 | 1,829 | 92,680 | 86,009 | 246,205 | 71,593 | 56,753 | 35,927 | 55,139 | 30,870 | 150,546 | 15,891 | 79,767 | 28,069 | 43,524 | 496,487 |
| Recreation | 7,741 | 22,025 | 5,665 | 1,434 | 5,649 | 4,679 | 18,769 | 7,768 | 1,167 | 4,482 | 1,345 | 3,334 | 8,485 | 2,493 | 7,792 | 5,329 | 2,439 | 36,865 |
| Misc | 10,765 | 19,038 | 11,631 | 49 | 9,133 | 8,249 | 18,330 | 5,771 | 7,474 | 1,659 | 4,981 | 3,268 | 9,776 | 1,191 | 7,363 | 1,745 | 4,026 | 41,483 |
| All Buildings | 968,744 | 1,069,678 | 521,757 | 80,135 | 436,576 | 574,227 | 1,231,820 | 397,690 | 198,935 | 237,641 | 362,611 | 211,617 | 722,080 | 169,018 | 340,723 | 178,017 | 219,674 | 2,640,314 |

[1]na = Not Applicable

TABLE 16: PERCENT NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES 2011

| | Application | | | | Census Region | | | | Census Division | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Lumber (% bf)* | | | | | | | | | | | | | | | | | |
| Stores | 2.2% | 72.6% | 9.3% | 15.9% | 2.6% | 5.8% | 20.9% | 2.1% | 0.7% | 1.9% | 3.3% | 2.5% | 14.7% | 2.8% | 3.3% | 1.1% | 1.0% | 31.3% |
| Industrial | 88.9% | 1.2% | 10.0% | 0.0% | 0.2% | 0.1% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.4% |
| Offices | 30.0% | 50.8% | 18.9% | 0.2% | 4.7% | 2.6% | 5.6% | 1.4% | 1.7% | 3.0% | 1.7% | 0.9% | 3.6% | 0.8% | 1.2% | 0.8% | 0.6% | 14.3% |
| Hotels | 74.0% | 24.2% | 1.7% | 0.0% | 0.5% | 0.7% | 1.4% | 0.5% | 0.2% | 0.3% | 0.3% | 0.4% | 0.7% | 0.1% | 0.5% | 0.2% | 0.3% | 3.1% |
| Schools | 3.4% | 60.4% | 33.8% | 2.4% | 1.4% | 5.0% | 8.4% | 2.6% | 0.4% | 0.9% | 3.7% | 1.3% | 3.6% | 1.4% | 3.3% | 0.7% | 1.9% | 17.4% |
| Colleges | 38.8% | 39.7% | 17.3% | 4.3% | 1.6% | 1.3% | 3.8% | 1.9% | 0.7% | 0.9% | 0.8% | 0.5% | 1.8% | 1.0% | 1.1% | 0.4% | 1.4% | 8.5% |
| Religious | 26.3% | 9.7% | 63.6% | 0.4% | 0.3% | 0.7% | 2.1% | 2.3% | 0.1% | 0.2% | 0.3% | 0.4% | 0.8% | 0.3% | 1.0% | 1.9% | 0.4% | 5.5% |
| Health | 22.2% | 55.3% | 20.1% | 2.3% | 2.0% | 1.3% | 2.7% | 1.1% | 1.3% | 0.7% | 0.7% | 0.6% | 1.6% | 0.4% | 0.7% | 0.4% | 0.6% | 7.1% |
| Public | 27.8% | 53.5% | 17.1% | 1.5% | 1.9% | 2.2% | 4.1% | 1.5% | 0.9% | 1.0% | 1.3% | 1.0% | 2.5% | 0.6% | 1.0% | 0.6% | 0.8% | 9.7% |
| Recreation | 12.5% | 64.0% | 12.8% | 10.7% | 0.1% | 0.1% | 0.5% | 0.3% | 0.0% | 0.1% | 0.0% | 0.1% | 0.2% | 0.1% | 0.2% | 0.2% | 0.1% | 1.1% |
| Misc | 28.8% | 67.3% | 3.6% | 0.2% | 0.4% | 0.3% | 0.9% | 0.1% | 0.4% | 0.0% | 0.1% | 0.1% | 0.5% | 0.1% | 0.3% | 0.0% | 0.0% | 1.7% |
| All Buildings | 17.8% | 56.1% | 19.8% | 6.3% | 15.7% | 20.1% | 50.4% | 13.9% | 6.7% | 8.9% | 12.3% | 7.8% | 30.1% | 7.5% | 12.7% | 6.5% | 7.4% | 100.0% |
| | *Engineered Wood (% bfe)* | | | | | | | | | | | | | | | | | |
| Stores | 1.7% | 1.3% | 0.0% | 0.0% | 0.8% | 0.6% | 1.1% | 0.5% | 0.7% | 0.1% | 0.5% | 0.1% | 0.7% | 0.0% | 0.4% | 0.2% | 0.3% | 3.0% |
| Industrial | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Offices | 11.0% | 0.4% | 0.3% | 0.0% | 1.7% | 4.0% | 1.5% | 4.5% | 1.0% | 0.7% | 1.9% | 2.0% | 0.9% | 0.1% | 0.5% | 4.2% | 0.3% | 11.7% |
| Hotels | 5.5% | 0.9% | 0.2% | 0.0% | 0.8% | 2.4% | 2.6% | 0.8% | 0.2% | 0.6% | 1.1% | 1.2% | 1.0% | 0.2% | 1.3% | 0.3% | 0.5% | 6.6% |
| Schools | 20.5% | 0.6% | 1.2% | 0.0% | 2.8% | 8.7% | 6.5% | 4.4% | 0.8% | 2.1% | 7.0% | 1.7% | 3.4% | 1.5% | 1.5% | 0.3% | 4.1% | 22.4% |
| Colleges | 3.5% | 0.1% | 0.4% | 0.0% | 0.9% | 0.4% | 2.1% | 0.7% | 0.5% | 0.4% | 0.2% | 0.2% | 0.7% | 0.8% | 0.7% | 0.2% | 0.5% | 4.1% |
| Religious | 1.8% | 0.2% | 0.9% | 0.0% | 0.6% | 0.6% | 1.2% | 0.5% | 0.0% | 0.6% | 0.3% | 0.3% | 0.5% | 0.3% | 0.4% | 0.4% | 0.1% | 2.9% |
| Health | 4.4% | 0.7% | 0.1% | 0.0% | 2.2% | 0.9% | 1.6% | 0.5% | 1.8% | 0.4% | 0.6% | 0.3% | 1.1% | 0.3% | 0.2% | 0.3% | 0.2% | 5.2% |
| Public | 38.3% | 0.7% | 1.7% | 0.0% | 7.4% | 6.0% | 22.6% | 4.8% | 5.1% | 2.3% | 4.2% | 1.7% | 13.7% | 0.5% | 8.4% | 1.1% | 3.7% | 40.7% |
| Recreation | 0.9% | 1.0% | 0.0% | 0.0% | 0.4% | 0.1% | 1.0% | 0.3% | 0.0% | 0.4% | 0.1% | 0.1% | 0.6% | 0.1% | 0.3% | 0.1% | 0.1% | 1.8% |
| Misc | 0.4% | 0.0% | 1.2% | 0.0% | 0.3% | 0.4% | 0.6% | 0.3% | 0.2% | 0.1% | 0.3% | 0.1% | 0.3% | 0.0% | 0.3% | 0.1% | 0.2% | 1.6% |
| All Buildings | 88.0% | 6.0% | 6.1% | 0.0% | 17.9% | 24.0% | 40.9% | 17.2% | 10.3% | 7.6% | 16.2% | 7.8% | 22.9% | 3.9% | 14.1% | 7.2% | 10.1% | 100.0% |

TABLE 16: PERCENT NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES (CONTINUED)

| | Application | | | | Census Region | | | | Census Division | | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Structural Panels (% ft$^2$)* | | | | | | | | | | | | | | | | | |
| Stores | 0.0% | 18.2% | 17.4% | 0.0% | 4.1% | 10.0% | 17.8% | 3.8% | 1.5% | 2.5% | 6.4% | 3.6% | 11.8% | 1.6% | 4.4% | 1.7% | 2.1% | 35.7% |
| Industrial | 0.0% | 0.6% | 0.0% | 0.0% | 0.1% | 0.2% | 0.4% | 0.1% | 0.0% | 0.0% | 0.1% | 0.1% | 0.3% | 0.1% | 0.0% | 0.0% | 0.0% | 0.7% |
| Offices | 1.6% | 9.4% | 4.3% | 0.0% | 5.5% | 2.5% | 6.0% | 1.2% | 1.1% | 4.4% | 1.7% | 0.9% | 3.9% | 1.4% | 0.8% | 0.6% | 0.6% | 15.3% |
| Hotels | 4.4% | 2.5% | 0.1% | 0.0% | 0.7% | 1.7% | 3.4% | 1.2% | 0.1% | 0.6% | 0.6% | 1.0% | 1.8% | 0.4% | 1.2% | 0.5% | 0.7% | 6.9% |
| Schools | 0.7% | 0.9% | 3.2% | 0.0% | 0.4% | 1.5% | 2.0% | 1.0% | 0.2% | 0.2% | 1.2% | 0.3% | 0.7% | 0.3% | 1.0% | 0.2% | 0.8% | 4.9% |
| Colleges | 2.2% | 5.0% | 2.7% | 0.2% | 1.4% | 1.5% | 5.3% | 1.9% | 0.6% | 0.9% | 1.0% | 0.5% | 2.5% | 1.6% | 1.2% | 0.5% | 1.4% | 10.1% |
| Religious | 1.5% | 0.5% | 1.4% | 0.0% | 0.3% | 0.5% | 1.7% | 1.0% | 0.0% | 0.2% | 0.2% | 0.3% | 0.7% | 0.3% | 0.7% | 0.7% | 0.3% | 3.4% |
| Health | 0.8% | 4.3% | 3.0% | 0.0% | 1.8% | 1.7% | 3.4% | 1.3% | 1.1% | 0.6% | 0.9% | 0.8% | 2.0% | 0.4% | 1.0% | 0.5% | 0.7% | 8.1% |
| Public | 2.5% | 6.9% | 2.3% | 0.0% | 1.8% | 2.5% | 4.8% | 2.7% | 0.7% | 1.1% | 1.5% | 1.1% | 2.9% | 0.8% | 1.1% | 1.7% | 0.9% | 11.7% |
| Recreation | 0.0% | 1.0% | 0.6% | 0.0% | 0.2% | 0.3% | 0.8% | 0.4% | 0.1% | 0.1% | 0.1% | 0.2% | 0.3% | 0.1% | 0.4% | 0.3% | 0.1% | 1.7% |
| Misc | 0.3% | 0.8% | 0.4% | 0.0% | 0.3% | 0.3% | 0.5% | 0.4% | 0.1% | 0.1% | 0.2% | 0.1% | 0.3% | 0.0% | 0.2% | 0.1% | 0.3% | 1.5% |
| All Buildings | 14.0% | 50.1% | 35.6% | 0.3% | 16.4% | 22.8% | 45.9% | 14.9% | 5.5% | 10.9% | 13.9% | 8.9% | 27.0% | 7.0% | 12.0% | 6.9% | 8.0% | 100.0% |
| | *Non-Structural Panels (% ft$^2$)* | | | | | | | | | | | | | | | | | |
| Stores | 0.0% | na[1] | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Industrial | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Offices | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Hotels | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Schools | 64.0% | na | na | 0.0% | 7.9% | 17.5% | 28.0% | 10.6% | 4.7% | 3.2% | 12.8% | 4.7% | 12.8% | 6.1% | 9.0% | 1.5% | 9.1% | 64.0% |
| Colleges | 0.6% | na | na | 0.0% | 0.1% | 0.1% | 0.2% | 0.2% | 0.0% | 0.1% | 0.1% | 0.0% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% | 0.6% |
| Religious | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Health | 1.1% | na | na | 0.0% | 0.4% | 0.2% | 0.3% | 0.2% | 0.2% | 0.2% | 0.1% | 0.1% | 0.2% | 0.1% | 0.1% | 0.1% | 0.1% | 1.1% |
| Public | 34.4% | na | na | 0.0% | 14.4% | 0.0% | 13.5% | 6.4% | 13.6% | 0.9% | 0.0% | 0.0% | 9.2% | 0.1% | 4.3% | 3.5% | 2.9% | 34.4% |
| Recreation | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Misc | 0.0% | na | na | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| All Buildings | 100.0% | na | na | 0.0% | 22.8% | 17.8% | 42.1% | 17.4% | 18.5% | 4.3% | 13.0% | 4.8% | 22.3% | 6.3% | 13.5% | 5.1% | 12.3% | 100.0% |

TABLE 16: PERCENT NET POTENTIAL CHANGE IN WOOD VOLUME IN LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION BY BUILDING TYPE, APPLICATION, CENSUS REGION AND DIVISION, UNITED STATES (CONTINUED)

| | Application | | | | Census Region | | | | Census Division | | | | | | | | | US |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Floors | Walls | Roofs | Siding | Northeast | Midwest | South | West | New England | Middle Atlantic | E N Central | W N Central | South Atlantic | E S Central | W S Central | Mountain | Pacific | TOTAL |
| | *Lumber, Engineered Wood, Structural Panels, and Non-Structural Panels (% bfe)* | | | | | | | | | | | | | | | | | |
| Stores | 0.8% | 15.6% | 5.7% | 2.4% | 2.4% | 5.4% | 14.5% | 2.0% | 0.9% | 1.5% | 3.3% | 2.1% | 10.1% | 1.7% | 2.8% | 1.0% | 1.0% | 24.4% |
| Industrial | 0.2% | 0.2% | 0.0% | 0.0% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% | 0.0% | 0.1% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% |
| Offices | 5.3% | 5.9% | 2.4% | 0.0% | 4.1% | 2.9% | 4.5% | 2.1% | 1.3% | 2.7% | 1.7% | 1.2% | 2.9% | 0.7% | 0.9% | 1.6% | 0.5% | 13.6% |
| Hotels | 3.6% | 1.2% | 0.1% | 0.0% | 0.6% | 1.4% | 2.2% | 0.8% | 0.2% | 0.4% | 0.6% | 0.8% | 1.1% | 0.2% | 0.9% | 0.3% | 0.5% | 4.9% |
| Schools | 6.8% | 5.4% | 3.9% | 0.2% | 1.6% | 5.3% | 6.6% | 2.8% | 0.5% | 1.1% | 4.1% | 1.2% | 3.0% | 1.3% | 2.4% | 0.5% | 2.4% | 16.3% |
| Colleges | 3.0% | 2.9% | 1.5% | 0.2% | 1.3% | 1.1% | 3.7% | 1.5% | 0.6% | 0.7% | 0.7% | 0.4% | 1.7% | 1.0% | 1.0% | 0.4% | 1.2% | 7.6% |
| Religious | 1.6% | 0.4% | 2.2% | 0.0% | 0.4% | 0.6% | 1.8% | 1.5% | 0.1% | 0.3% | 0.3% | 0.3% | 0.7% | 0.3% | 0.8% | 1.2% | 0.3% | 4.2% |
| Health | 2.1% | 3.1% | 1.4% | 0.1% | 2.0% | 1.2% | 2.6% | 1.0% | 1.4% | 0.6% | 0.7% | 0.5% | 1.6% | 0.4% | 0.6% | 0.4% | 0.5% | 6.7% |
| Public | 12.6% | 4.4% | 1.8% | 0.1% | 3.5% | 3.3% | 9.3% | 2.7% | 2.1% | 1.4% | 2.1% | 1.2% | 5.7% | 0.6% | 3.0% | 1.1% | 1.6% | 18.8% |
| Recreation | 0.3% | 0.8% | 0.2% | 0.1% | 0.2% | 0.2% | 0.7% | 0.3% | 0.0% | 0.2% | 0.1% | 0.1% | 0.3% | 0.1% | 0.3% | 0.2% | 0.1% | 1.4% |
| Misc | 0.4% | 0.7% | 0.4% | 0.0% | 0.3% | 0.3% | 0.7% | 0.2% | 0.3% | 0.1% | 0.2% | 0.1% | 0.4% | 0.0% | 0.3% | 0.1% | 0.2% | 1.6% |
| All Buildings | 36.7% | 40.5% | 19.8% | 3.0% | 16.5% | 21.7% | 46.7% | 15.1% | 7.5% | 9.0% | 13.7% | 8.0% | 27.3% | 6.4% | 12.9% | 6.7% | 8.3% | 100.0% |

[1]na = Not Applicable

TABLE 17: ESTIMATED VALUE OF NEW LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION ADDED, FLOOR AREA BUILT, AND VALUE PER SQUARE FOOT OF FLOOR AREA BY BUILDING TYPE, UNITED STATES 2011

| | Value of New Construction | | Floor Area | Per SF of Floor Area |
|---|---|---|---|---|
| | 2011 | | 2011 | 2011 |
| | All | New & Additions | New & Additions | New & Additions |
| | *Bil. $* | *Bil. $* | *Th. Square Feet* | *$* |
| Stores | $19.8 | $9.9 | 152,454 | 64.9 |
| Industrial | $9.4 | $7.2 | 85,833 | 83.9 |
| Offices | $12.3 | $9.2 | 86,613 | 106.6 |
| Hotels | $3.5 | $2.9 | 21,167 | 135.0 |
| Schools | $47.5 | $19.0 | 152,045 | 125.3 |
| Colleges | $23.5 | $12.9 | 52,060 | 246.9 |
| Religious | $2.7 | $1.6 | 13,162 | 124.3 |
| Health | $31.5 | $15.8 | 70,446 | 224.6 |
| Public | $47.3 | $29.6 | 71,705 | 412.6 |
| Recreation | $4.6 | $1.4 | 18,793 | 73.0 |
| Misc | $6.3 | $3.4 | 8,832 | 384.3 |
| All Buildings | $208.4 | $112.9 | 733,110 | 154.0 |

**Table 17: Estimated Value, Construction Added, Floor Area Built, & Value Per Square Foot of Floor Area by Building Type**

TABLE 18: NEW NONRESIDENTIAL BUILDING CONSTRUCTION ADDED
BY NUMBER OF STORIES AND BUILDING TYPE, UNITED STATES 2011

| | Square Feet of New Buildings & Additions | | | | | Percent of SF of New Buildings & Additions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Greater Than 6 Stories | 6 Stories & Under | 5 & 6 Stories | 4 Stories & Under | TOTAL | Greater Than 6 Stories | 6 Stories & Under | 5 & 6 Stories | 4 Stories & Under | TOTAL |
| | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *%* | *%* | *%* | *%* | *%* |
| Stores | 2,604 | 152,454 | 7,843 | 144,611 | 155,058 | 1.7% | 98.3% | 5.1% | 93.3% | 100.0% |
| Industrial | 139 | 85,833 | 0 | 85,833 | 85,972 | 0.2% | 99.8% | 0.0% | 99.8% | 100.0% |
| Offices | 11,526 | 86,613 | 15,417 | 71,196 | 98,139 | 11.7% | 88.3% | 15.7% | 72.5% | 100.0% |
| Hotels | 10,543 | 21,167 | 7,846 | 13,321 | 31,710 | 33.2% | 66.8% | 24.7% | 42.0% | 100.0% |
| Schools | 3,036 | 152,045 | 7,464 | 144,581 | 155,081 | 2.0% | 98.0% | 4.8% | 93.2% | 100.0% |
| Colleges | 3,007 | 52,060 | 8,984 | 43,075 | 55,067 | 5.5% | 94.5% | 16.3% | 78.2% | 100.0% |
| Religious | 0 | 13,162 | 0 | 13,162 | 13,162 | 0.0% | 100.0% | 0.0% | 100.0% | 100.0% |
| Health | 14,448 | 70,446 | 12,334 | 58,112 | 84,894 | 17.0% | 83.0% | 14.5% | 68.5% | 100.0% |
| Public | 2,212 | 71,705 | 8,834 | 62,872 | 73,917 | 3.0% | 97.0% | 12.0% | 85.1% | 100.0% |
| Recreation | 1,626 | 18,793 | 4,580 | 14,213 | 20,419 | 8.0% | 92.0% | 22.4% | 69.6% | 100.0% |
| Misc | 8 | 8,832 | 356 | 8,476 | 8,840 | 0.1% | 99.9% | 4.0% | 95.9% | 100.0% |
| All Buildings | 49,150 | 733,110 | 73,657 | 659,453 | 782,260 | 6.3% | 93.7% | 9.4% | 84.3% | 100.0% |

**Table 18: Construction Added by Number of Stories and Building Type**

TABLE 19: DOLLARS OF REMODELING OF LOW-RISE NONRESIDENTIAL BUILDING CONSTRUCTION
BY BUILDING TYPE, UNITED STATES 2011

| | Dollars of Remodelling | | | | | Percent of Dollars of Remodelling | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Greater Than 6 Stories | 6 Stories & Under | 5 & 6 Stories | 4 Stories & Under | TOTAL | Greater Than 6 Stories | 6 Stories & Under | 5 & 6 Stories | 4 Stories & Under | TOTAL |
| | *Th. $* | *Th. $* | *Th. $* | *Th. $* | *Th. $* | *%* | *%* | *%* | *%* | *%* |
| Stores | na[1] | 9,906,909 | 184,404 | 9,722,505 | 9,906,909 | na | 100.0% | 1.9% | 98.1% | 100.0% |
| Industrial | na | 2,173,857 | 23,717 | 2,150,141 | 2,173,857 | na | 100.0% | 1.1% | 98.9% | 100.0% |
| Offices | na | 3,058,907 | 328,823 | 2,730,084 | 3,058,907 | na | 100.0% | 10.7% | 89.3% | 100.0% |
| Hotels | na | 684,625 | 62,948 | 621,678 | 684,625 | na | 100.0% | 9.2% | 90.8% | 100.0% |
| Schools | na | 28,460,752 | 591,243 | 27,869,509 | 28,460,752 | na | 100.0% | 2.1% | 97.9% | 100.0% |
| Colleges | na | 10,692,746 | 450,792 | 10,241,954 | 10,692,746 | na | 100.0% | 4.2% | 95.8% | 100.0% |
| Religious | na | 1,072,846 | 57,344 | 1,015,502 | 1,072,846 | na | 100.0% | 5.3% | 94.7% | 100.0% |
| Health | na | 15,645,188 | 1,493,342 | 14,151,846 | 15,645,188 | na | 100.0% | 9.5% | 90.5% | 100.0% |
| Public | na | 17,714,044 | 364,205 | 17,349,840 | 17,714,044 | na | 100.0% | 2.1% | 97.9% | 100.0% |
| Recreation | na | 3,212,672 | 739,498 | 2,473,174 | 3,212,672 | na | 100.0% | 23.0% | 77.0% | 100.0% |
| Misc | na | 2,857,711 | 55,662 | 2,802,050 | 2,857,711 | na | 100.0% | 1.9% | 98.1% | 100.0% |
| All Buildings | na | 95,480,258 | 4,351,976 | 91,128,282 | 95,480,258 | na | 100.0% | 4.6% | 95.4% | 100.0% |

[1]na = Not covered by this study.

**Table 19: Dollars of Remodeling by Building Type**

TABLE 20: NEW LOW-RISE NONRESIDENTIAL BUILDINGS THAT APPLIED FOR LEED CERTIFICATION
BY BUILDING TYPE, UNITED STATES 2011

| | Square Feet of New Buildings | | | | | Percent of SF of New Buildings | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Basic | Silver | Gold | Platinum | TOTAL | Basic | Silver | Gold | Platinum | TOTAL |
| | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *Th. ft²* | *%* | *%* | *%* | *%* | *%* |
| Stores | 7,557 | 1,518 | 7,917 | 0 | 16,992 | 44.5% | 8.9% | 46.6% | 0.0% | 100.0% |
| Industrial | 5,024 | 605 | 87 | 117 | 5,832 | 86.1% | 10.4% | 1.5% | 2.0% | 100.0% |
| Offices | 12,478 | 6,688 | 7,893 | 965 | 28,024 | 44.5% | 23.9% | 28.2% | 3.4% | 100.0% |
| Hotels | 2,402 | 592 | 351 | 0 | 3,345 | 71.8% | 17.7% | 10.5% | 0.0% | 100.0% |
| Schools | 13,733 | 24,876 | 10,184 | 4,362 | 53,155 | 25.8% | 46.8% | 19.2% | 8.2% | 100.0% |
| Colleges | 3,776 | 12,475 | 4,563 | 1,670 | 22,484 | 16.8% | 55.5% | 20.3% | 7.4% | 100.0% |
| Religious | 424 | 1,481 | 0 | 0 | 1,906 | 22.3% | 77.7% | 0.0% | 0.0% | 100.0% |
| Health | 4,115 | 4,690 | 2,274 | 889 | 11,968 | 34.4% | 39.2% | 19.0% | 7.4% | 100.0% |
| Public | 5,040 | 26,290 | 3,412 | 330 | 35,073 | 14.4% | 75.0% | 9.7% | 0.9% | 100.0% |
| Recreation | 2,502 | 965 | 0 | 0 | 3,467 | 72.2% | 27.8% | 0.0% | 0.0% | 100.0% |
| Misc | 633 | 553 | 398 | 348 | 1,932 | 32.7% | 28.6% | 20.6% | 18.0% | 100.0% |
| All Buildings | 57,683 | 80,732 | 37,080 | 8,682 | 184,177 | 31.3% | 43.8% | 20.1% | 4.7% | 100.0% |

**Table 20: LEED Certification by Building Type**

# APPENDIX B

## WOOD PRODUCTS USAGE METHODOLOGY

## WOOD PRODUCTS USAGE METHODOLOGY

Reed Construction Data (RCD) maintains a database of nonresidential construction projects developed to track building types, sizes, cost, geographic locations, and other general specifications, known as the RCD Projects Database. Of the nearly 60,000 projects added to the database for 2011, the majority were either new nonresidential buildings, additions to existing nonresidential building, or renovation of existing buildings. The project team developed the programming to query the RCD Projects Database for the year 2011 to obtain incidence rates of materials types and specifications for each building assembly for each of the eleven building types and by the Nine Census Divisions. The output of this analysis was balanced to the published U.S. Department of Commerce nonresidential put-in-place values to assure a reasonable representation by each building type and Census Division.

Each year, the engineering staff at RS Means obtains detailed specifications from a statistically representative sample of more than 10,000 new nonresidential building projects where new area is added, categorizing materials by CSI MasterFormat™.

The representativeness of the sample assures that the averages are reflective of all new nonresidential projects for the geographic areas and time period. Only building projects six stories or less were included in the database.

Where existing specifications are considered inadequate for a representative sample (due to minimum sample size for uncommon building types or small geographic areas), the engineering staff of RS Means used existing expertise and cost models to validate select projects to increase the sample size.

### CREATION OF DETAILED PROJECT DATABASE AND PRELIMINARY TABULATIONS

RS Means has developed and maintains a data modeling process using project details and specification text queries, manual quantity takeoffs (QTO's), and a SAS software platform that accurately converts these inputs into detailed materials usage data.

To obtain usage volumes for each nonresidential project, the project team applied the take-offs and materials volume modeling to each set of project specifications for the materials categories desired by the client and available in CSI MasterFormat™. Added to these were the QTO's for renovation projects where no new floor area has been added. The project team reviewed the tabular output from the preliminary tabulations and developed conversion factors for each output item. Waste factors were applied where considered relevant by the project team and client. The tabulations at this interim stage are "coefficients," which represent an amount of material used per square-foot of building space added.

Conversions to suitable metrics for industry usage and comparability to Home Innovation Research Labs Annual Builder and Consumer Practices Survey reports were then made. First, using the RCD specifications data, material usage rates were calculated for each market

segment. Second, these usage rates were tested by an AnOVa (Analysis of Variance) to determine if there are statistically significant differences in usage rates among the segments. Third, different material usage rates were applied per floor square foot per segment to projects bid in 2010/2011 to create a statistically weighted market size for each level of segmentation.

**USE OF QTO AND MODELS AND SPECIFICATION RESEARCH**

Reed Market Intelligence maintains 80 RSMeans cost models which are used by the construction marketplace, including the US Government, to estimate building envelope construction costs. These models are maintained by a staff of engineers, architects, and estimators who have worked in the construction market and expand on a 70 year history as the Gold Standard in cost data and modeling. These models are validated through ongoing industry contact and documentation of bids collected and maintained by Reed from throughout the country.

For this project, these models were used to determine quantity metrics for defined building assemblies and material items across the 2011 bid year market for defined building category segments for the 11 building types that were six stories and under.

In addition to the above active models, Reed selected a statistical sample of 160 projects distributed over the building types and geographic markets defined by the study. Estimators then performed Quantity Take Offs of materials designed into these projects from which quantity per square feet of floor space ratios were determined. This information was used to enhance RSMeans standard models to identify and verify current material usage practices across the defined building types and regions.

Finally, a database of 4,588 new construction and 18,506 renovation construction specifications was compiled from qualifying building projects bid in 2011. These documents were electronically searched to calculate materials usage rates.

All three sets of data input were used to determine quantity and usage of materials in commercial construction projects in 2011. The definitive usage rates are statistically tested to determine supported variances using ANOVA testing of rates by geographic regions and building categories to adjust for design practices in those segments. These input rates are then applied to the universe of projects covered by Reed in those segments to extrapolate quantities of materials usage in the specific segments requested. The inputs provided were either calculated quantities or rates per square feet of floor space usage.

**DEVELOPMENT OF ESTIMATES FOR NONRESIDENTIAL RENOVATIONS**

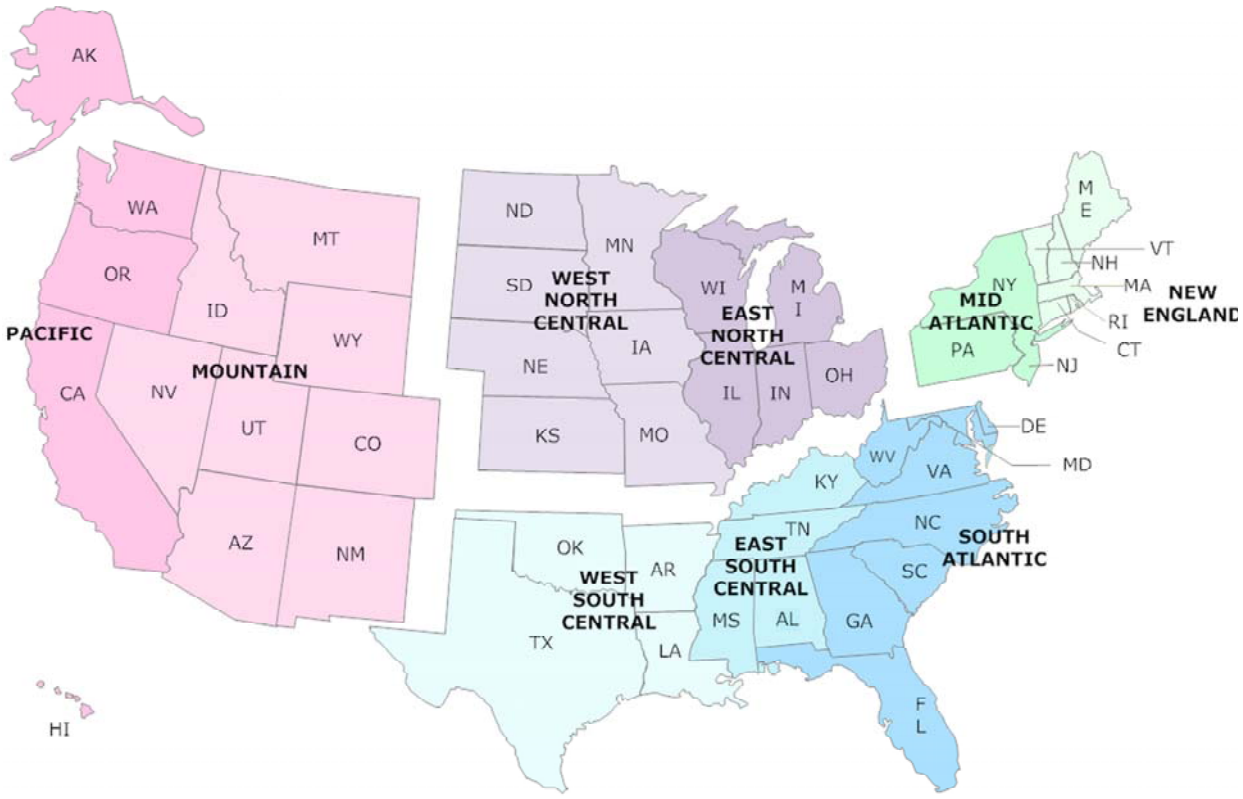
In the 2003 nonresidential study, lumber usage for renovations was estimated at 16% of the total nonresidential construction lumber usage. Because wood usage in renovation represents a substantial share of total nonresidential wood usage, the project team provided estimates of wood usage for renovation as well. Project plans and specifications for renovations are less uniform than for new construction, so the project team performed additional quantity takeoffs

from wood-using projects and apply its cost engineering expertise to develop models for calculating wood usage based on dollars of project cost—a method which has proven to be highly correlated with materials volume.

## GEOGRAPHIC AREAS

The data are arranged by nine geographic areas established by the U.S. Census Bureau in 1910, called Census Divisions. These nine Census Divisions include all 50 states and the District of Columbia and are shown in Figure 36 below.

**Figure 34. United States Census Region/Division Map**



## UNITS OF MEASURE

Figure 35 shows the various material types and their corresponding units of measure and abbreviations used in this report.

**Figure 35. Board Foot Equivalencies of Engineered Wood and Wood Panels**

| Wood product | Unit of measure | Abbreviation |
|---|---|---|
| Lumber, softwood and hard wood | board feet | bf |
| Engineered wood | board feet equivalent[6] | bfe |
| I-joist | linear feet | lf |
| Glulam | board feet | bf |
| SCL | cubic feet | $ft^3$ |
| Rim boards | square feet, 3/8-inch basis | $ft^2$ |
| Cross laminated timber | cubic feet | $ft^3$ |
| Total, lumber plus engineered wood | board feet equivalent | bfe |
| Softwood plywood, OSB, Nonstructural panels | square feet, 3/8-inch basis | $ft^2$ |

[6] Board foot equivalents (bfe) are the amounts of non-lumber wood products converted to equivalent board foot volume based on the following conversions: 1 lf (I-joist) = 2 bfe; 1 $ft^3$ = 16 bfe, and, 1 $ft^2$, 3/8" basis = 0.5 bfe.

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