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Wood Truss Use Across the Country: It's a Regional Thing by NAHB Research Center Staff

Because of regional variation in roof truss usage, it is important to understand how popular roof trusses are with builders and whether their popularity is growing or waning to take advantage of business growth opportunities and maintain an effective business strategy.

Each year, the NAHB Research Center implements the Annual Builder Practices Survey (ABPS), which queries the nation's builders to track trends in materials usage in new home construction. The ABPS collects data on roof structures, materials, species of lumber and other important factors that are critical to building systems manufacturers. In partnership with the Wood Truss Council of America, the NAHB Research Center has analyzed recent ABPS data to help understand the regional patterns of truss usage and any growth trends by region.

The findings reveal that substantial variations in wood truss usage exist—from a low of four percent of total roof area in Louisiana, to 97 percent of roof area in Nevada. While the share of roof trusses in new homes has hovered at about 65 percent nationally for the past decade, and most U.S. markets are mature with little growth, there have been some areas where roof truss usage has increased dramatically in the past few years.

GEOGRAPHIC DIFFERENCES IN ROOF TRUSS USAGE

The map in Figure 1 represents roof truss market penetration for new home construction based on 2001 ABPS data. Most evident is that new homes in the South Central states are least likely to have roof trusses, with four states under 20 percent share of all new residential roofs. Also noteworthy is that the New England and South Atlantic states (except Florida) have substantially lower shares of truss usage than Midwestern and Western states.

	Trusses	Rafters & Other
New England	31%	69%
Mid-Atlantic	63%	37%
East North Central	84%	16%
West North Central	77%	23%
South Atlantic	62%	38%
East South Central	33%	67%
West South Central	17%	83%
Mountain	90%	10%
Pacific	79%	21%
United States	63%	37%

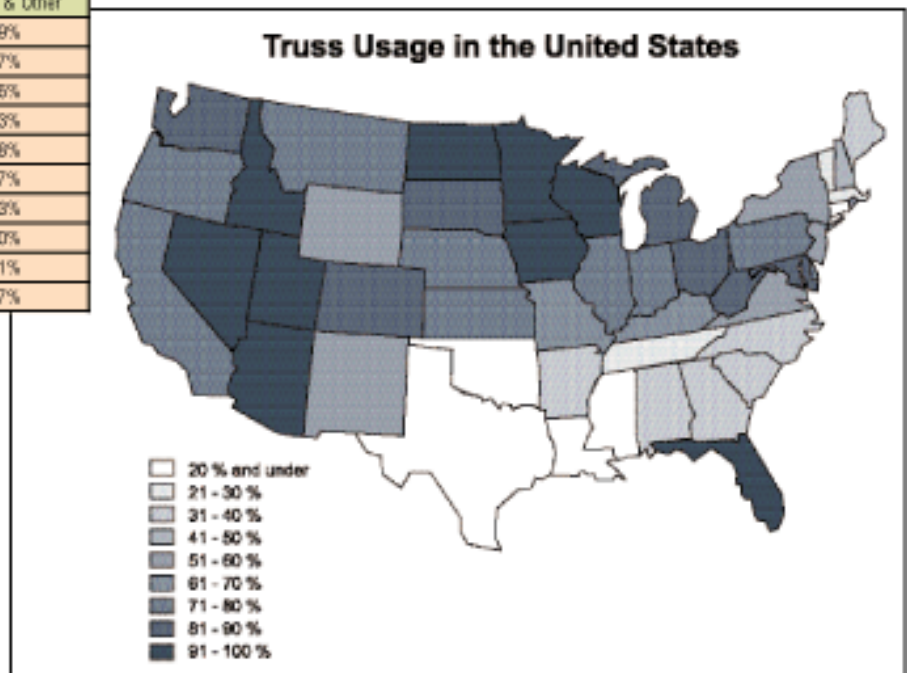


Figure 1. Map of Roof Truss Usage in New Homes, 2001.

CLICK ON IMAGE FOR LARGER VIEW

Why have trusses been slow to gain acceptance in some markets? Many have suggested that trusses result in overall cost savings and increased construction speed, provide for greater design flexibility, and are stronger than traditional rafter roofs. Complex roof shapes are now common and can be more efficiently assembled in the factory, making use of less skilled site labor. Others, however, cite the disadvantages of truss roofs, such as requiring a crane to lift trusses into place; that standard trusses result in no attic space; and in some markets, the installed cost of more complex trussed roofs is higher than rafter-framed roofs.

Analysis of 2002 ABPS data shows that, in each of the nine U.S. Census Divisions, starter homes—whose rooflines tend to be less complex—were significantly more likely to have truss roofs than were luxury homes. Further, larger builders were consistently more likely to use wood trusses than were smaller builders within each region. Regional differences, however, cannot be explained by these findings. Geographic areas with higher proportions of luxury homes were not necessarily those with low roof truss usage, and some areas dominated by high-volume builders, such as Texas, had low rates of roof truss usage. This overview suggests, however, that differences in locally-accepted construction practices are responsible for the wide geographic differences in the usage of roof trusses.

GEOGRAPHIC TRENDS

Roof truss usage also varies by year within regions as market conditions change. While the majority of new home markets seem stable, many are growing and some are also in decline. The fastest growing truss usage market in percentage points has been New England, which grew from 17 percent of the single-family home market in 1996, to 37 percent in 2002. The West South Central states—Texas, Louisiana, Oklahoma and Arkansas—have seen single-family home usage of trusses grow from eight to 21 percent in this same period. West North Central states have also seen a 15 percentage point rise since 1996, to 83 percent in 2002. A few mature roof truss markets have even declined. Pacific states' truss usage declined from 86 percent in 1996 to only 71 percent in

2000, but rebounded to 81 percent by 2002. Mid Atlantic states—New York, New Jersey and Pennsylvania— have also experienced a mild overall decline since 1996. Demand for roof trusses has been fairly stable in the South Atlantic, East South Central, Mountain and East North Central states.

TAKING ADVANTAGE OF OPPORTUNITIES

These findings have important implications for roof truss manufacturers and distributors who are planning to improve sales in current markets and to expand into new ones. Entering markets where the truss usage is stable or in decline will require some consideration of what home builders value in a structural roof system, and why competing systems are meeting these needs or desires as well as trusses or better. Areas with low truss usage represent significant market development opportunities if the advantages of trusses can be demonstrated. Truss manufacturers and distributors should be encouraged that rapid growth in many U.S. markets shows that construction practices can and do change.

The NAHB Research Center's Annual Builder and Consumer Practices Surveys present information on new home construction material purchases, such as materials by volume, size, style, type and other characteristics. The information can be analyzed by each of the nine U.S. Census divisions, on the state level, and/or by user-defined geographic areas. For information on customized reports, visit www.nahbrc.org and click on "Market Research," or contact Ed Hudson, director of market research and surveys, at ehudson@nahbrc.org. You can also call the NAHB Research Center's ToolBase Hotline at (800) 898-2842.

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