

## CINTRAFOR Decking Material Survey Results, 2009

The Center for International Trade in Forest Products (CINTRAFOR) at the University of Washington conducts period market research to understand and interpret the trends in material usage in the U.S. residential construction industry. CINTRAFOR has been collecting market information on the material usage trend in the U.S. deck building industry since 1995. This fact sheet presents a brief overview of the data collected through a web-based survey of professional deck builders and companies involved in building residential decks. To ensure that the respondents had relevant deck building experience, only those deck builders who built more than 5 decks over the past two years were allowed to take the survey. A total of 372 qualified respondents completed the survey, representing 43 states and providing representation across all regions of the US. The number of residential decks built by the respondents in 2008 ranged from 1 to 250, with more than 60% of the respondents building between 3 to 8 decks. A substantial number of deck builders (12% of the respondents) indicated that they built more than 20 decks in 2008.

The market for residential decking products in North America has become increasingly competitive over the past decade. Moreover, regulatory constraints on timber harvests from public forests and competition from substitute materials have significantly altered the competitive environment within the deck building industry. Past studies have indicated that wood plastic composite decking (WPC) and plastic lumber (PVC) are increasingly replacing treated softwood lumber and naturally durable species (i.e., redwood, western red cedar and tropical hardwoods) in deck building applications. The 2009 study results indicate that this

trend of gradual market displacement of naturally durable species and treated softwood lumber decking materials has continued. From Figure 1 it can be observed that over 66% of the respondents indicated that they have increased their usage of WPC and 37% of the respondents increased their usage of PVC as between 2006 to 2008, with less than 10% reporting that they had decreased their use of WPC and PVC. In contrast, a high percentage of respondents indicated that they have decreased their usage of pressure treated lumber (31%), western red cedar (36%) and redwood (35%) while less than 20% reported increasing their use of these materials.

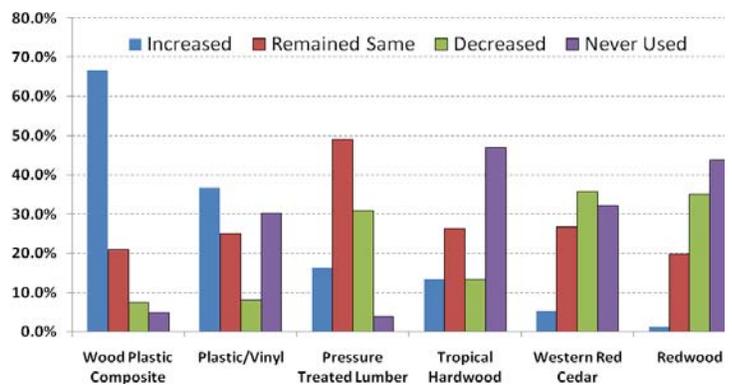


Figure 1: Changes in decking material usage between 2006 and 2008.

Table 1 presents the demographics of the deck builders surveyed, divided by census regions. The survey results reveal that the median cost of decks built in the West is significantly higher than the rest of the country, whereas, the median per unit cost of decks built in the Northeast is relatively higher than in the other regions of the country. The median size of decks built in the western US (400 square feet) was substantially

Table 1. Deck builder demographics and material usage, by region.

		Northeast (n=95)	Midwest (n=90)	South (n=117)	West (n=66)	Overall US (n=372)
Basic information on decks built	Median deck size (in sq. ft.)	350	300	320	400	350
	Median number of decks built	6	6	8	6	6
	Median cost per deck	\$7,500	\$5,600	\$5,000	\$9,000	\$6,500
	Median deck cost per sq. foot	\$21.43	\$15.50	\$15.31	\$18.57	\$18.00
Percentage of decks built by project type	Decks on existing home	46.3%	43.1%	39.8%	38.8%	42.5%
	Decks built on new home	11.8%	18.3%	16.6%	10.0%	13.9%
	Repair/replacement decks	41.8%	38.6%	43.5%	51.2%	43.6%
Decking material usage for deck surface	Western Red Cedar	9.8%	16.0%	6.0%	12.7%	10.6%
	Redwood	3.2%	5.5%	3.8%	19.4%	6.8%
	Pressure Treated Lumber	28.4%	30.8%	41.7%	10.3%	30.0%
	Wood Plastic Composite	30.3%	31.1%	27.6%	34.2%	30.4%
	Tropical Hardwood	10.1%	4.4%	6.1%	10.1%	7.4%
	Plastic/Vinyl	17.5%	11.2%	13.7%	8.4%	13.1%

larger than the in the other regions of the US. The survey respondents indicated that over 42% of their revenue came from building new decks on existing homes while an additional 44% came from repairing and replacing existing decks. This result suggests that deck builders should be insulated from the new housing downturn to some extent. Moreover, when homeowners are living in their houses longer they tend to invest in remodeling their houses; remodeling existing decks or installing new decks has traditionally been important aspects of renovating and remodeling houses.

While pressure treated lumber (PTL) remains the dominant material used in substructure applications with a market share over 80%, PTL only has a 30% share of the national deck surface market, Table 1. WPC is now the market leader in deck surface applications across all regions of the US, with the exception of the South where almost 40% of deck surfaces were built using PTL. In contrast, only about 10% of the deck surfaces built in the western US used PTL and WPC has emerged as the market leader with a 34% market share. The western US is also the region with the greatest use of naturally durable wood decking, perhaps reflecting the greater availability of these products. Plastic decking made its greatest inroad in the northeast where almost 18% of deck builders reported using this product.

### Decking material attribute importance ratings

The importance ratings reported by survey respondents for the different material attributes is useful in understanding the relationship between material attributes and their influence on deck builders choice of decking materials, Figure 2. Survey respondents were asked to rate the importance of decking material attributes in their material selection process using a scale of 1 – 7, where a score of 1 means that the attribute is not important, 4 is neutral and 7 means the attribute is extremely important. Consistent material quality and longevity of the decking materials were rated as the most important of all decking material attributes, followed by beauty, natural decay resistance, resistance to splintering and minimal surface checking. Low heat retention, reduced environmental impact and low material cost were rated as the least important decking material attributes. The vertical line in the figure represents the average importance rating for all of the attributes (5.83). The attributes which have importance rating scores greater than the average rating may be considered as having the greatest influence on the material specification process, as indicated by the red segment of each bar. Consistent material quality, beauty and long life emerged as the three most important attributes of decking materials. Other influential material attributes included natural decay resistance, resistance to splintering, minimal surface checking, ease of maintenance and availability.

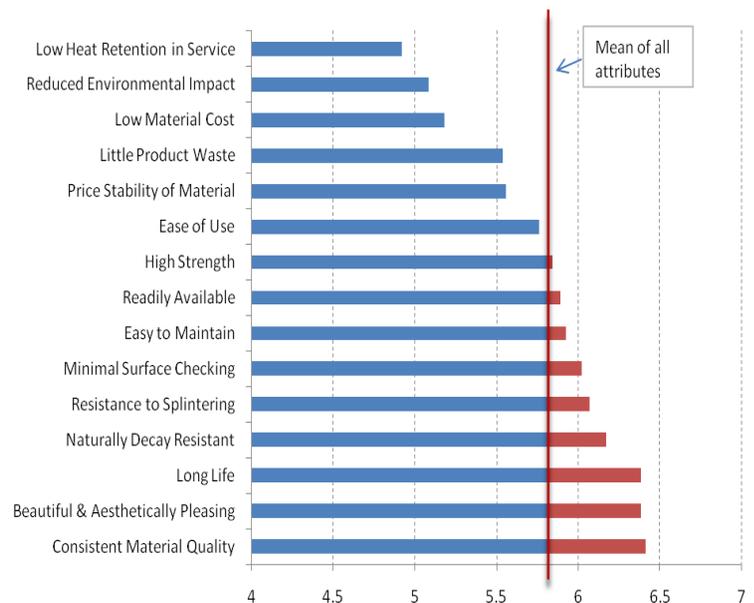


Figure 2: Attribute importance rating reported by survey respondents.

### Conclusions

WPC continues to gain favor among deck builders in decking surface applications, with almost two-thirds of the respondents reporting that their use of WPC's had increased between 2006 and 2008. The results also reveal a significant increase in the usage of PVC decking material. Among the naturally durable species, tropical hardwood maintained its market share while the domestically available naturally durable species (WRC and RW) experienced a reduction in usage in general, although they still have significant market shares in the midwestern and western US. The results of the survey indicate that innovative decking materials (such as WPC and PVC decking lumber) are steadily gaining acceptance in the US deck building industry at the expense of WRC and RW lumber. The decking material attribute ratings reveal that both WPC and plastic lumber are perceived to be superior to solid wood decking (including PTL) in terms of durability and ease of maintenance. Despite its declining market share (particularly in deck surface applications), pressure treated lumber continues to have a significant presence in the southern US, which can be attributed to its high availability, low cost and ease of usage.