

DECISION MAKING IN THE PURCHASE OF SIDING: A SURVEY OF ARCHITECTS, CONTRACTORS, AND HOMEOWNERS IN THE U.S. NORTHEAST

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ABSTRACT

Architects, builders, and homeowners in 12 northeastern U.S. states were surveyed to learn how siding products were selected in new residential construction projects. This study revealed that several issues control the selection and purchase of specific materials and products. Responses in this study defined existing market shares of wood and non-wood products in the Northeast region. The relative importance of performance, cost, appearance, and other factors in the product selection process were discussed. Logistic regression analysis tested the significance and correlation of the demographic data with the decision-making variables. A very small number of homeowners indicated they chose the siding for their home. However, architects and contractors indicated that homeowner opinion is important when selecting siding. Appearance and performance were more important influences on the selection of siding compared to cost and personal recommendations. Significant attributes indicated that siding is expected to fit the style of house and hold up over time. Respondents were less concerned with the environmental record and service life of the preferred siding; they were, however, concerned that siding may be easily damaged. Among cost factors, installation cost and having a good warranty ranked highest. Other important factors were product reputation and the respondents' first-hand knowledge of the product. Architects, contractors, and marketing managers for siding producers can use these results to: 1) focus on important siding product attributes that match their target customer perceptions; and 2) identify siding product concerns, features, and benefits for more effective promotion to customers and the ultimate homeowner.

Choosing the finish covering for the exterior walls of a home is an important decision. The choice of siding has a direct influence on appearance, performance, durability, repair, maintenance, and cost. Today's marketplace presents designers, builders, and homeowners with a long list of materials and products to choose from. It has been estimated in at least one investigation that the existing variety of materials, shapes, and surface treatments can be used to produce over 500 different wall coverings (4). Usually the siding market is segmented into several divisions based on the material used.

Wood siding has been an American favorite since Colonial days. But today, new products shape the marketplace. Nationally, wood and wood-based sid-

ing is installed on only 19 percent of new homes, down from 39 percent in 1978. Aluminum siding was introduced just after World War II and gained a modest level of acceptance for being the first "maintenance-free" siding. Its new-home share is anemic, dropping from 13 percent in 1978 to 5 percent in 1998 (1,2). Vinyl siding was introduced during the 1950s and has experienced steady market growth to the present (1,8,9). Fi-

ber-cement composites were invented more than 100 years ago, but have only recently captured attention as a low-cost, decay- and insect-resistant siding option. Fiber-cement siding holds about 6 percent of the national market, but is expected to grow considerably. Brick and stucco round out the list of options, each holding steady at about 19 percent of the new single-family construction market (1,2).

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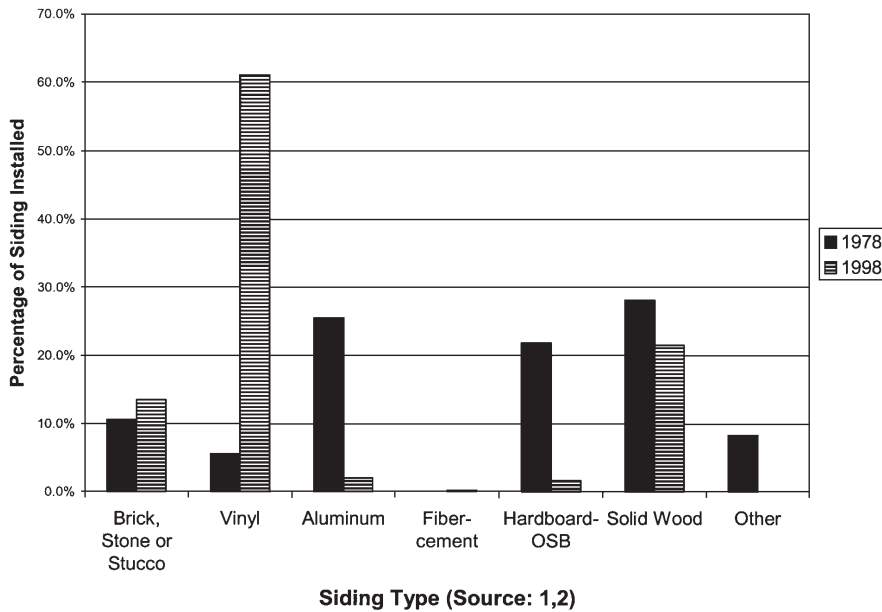


Figure 1. — Siding trends 1978 to 1998, Northeast region.

Regional preferences for residential siding materials are striking. Successful marketing plans depend on their ability to satisfy regional tastes. **Figure 1** presents existing National Association of Home Builders (NAHB) data showing changes in regional siding preferences for the period 1978 to 1998 (1). The chart shows combined data from the New England and Mid-Atlantic regions, which overlap the study area for this research. The biggest shift in market share over the past 20 years is vinyl's increase from 6 to 61 percent. This growth has come at the expense of some other materials: aluminum siding, which dropped from 26 to 2 percent; hardboard and other plywood panel siding, which fell from 22 to 2 percent; and solid wood siding, which fell from 28 to 22 percent.

For the purpose of this study, the category "hardboard/OSB" includes siding made of panel products, including hardboard, oriented strandboard (OSB), and plywood. The "solid wood" siding category includes both solid sawn lumber siding (such as clapboard or bevel siding of various species) and cedar shingles. Where results concern shingles, they are stated as such; other references to western red cedar or other species refer to solid sawn lumber siding as in bevel, ship-lap, or other profiles.

We note that the NAHB data also show differences in siding preferences between New England and the Mid-At-

lantic regions. For example, solid wood siding was installed on 38 percent of New England homes vs. only 6 percent of Mid-Atlantic. Vinyl had a 71 percent market share in the Mid-Atlantic vs. 51 percent in New England, and brick, stone, or stucco was installed on 20 percent of Mid-Atlantic homes vs. only 6 percent in New England (1,2). These results show important differences that should be investigated in future work. This study focused on architect, contractor, and homeowner behavior for the combined region and did not investigate these regional differences.

Shook and Eastin's results also highlight regional differences (10). Their survey of Puget Sound (Washington State) builders show higher market shares for OSB, hardboard, and wood-fiber cement followed by vinyl in 1995. Additionally, they highlight year-to-year variability in siding usage showing a -32.6 percent market share change in OSB from 1994 to 1995.

There are many competing materials to choose from and there are a variety of forces driving the decision-making process. Advertising and sales programs, installation and technical issues, and cost/benefit expectations influence homeowners, architects, and builders. The choice is complicated and many people, including professionals in the supply chain, are involved in the buying decision process. Eventually, the interaction

between architects, builders, and homeowners leads to a final specification. Successful marketing campaigns are built on a clear understanding of the decision-making process. Knowing what roles the various participants play is critical and is the focus of this study.

RESEARCH OBJECTIVES

A survey was designed and conducted to investigate how siding is selected for use on single-family homes in 12 northeastern U.S. States: six New England states, five Mid-Atlantic states, and Virginia. There were two primary objectives in this study: 1) identify key decision makers; and 2) identify key product attributes that influence the purchase decision process. The survey queried architects, contractors, and homeowners to gauge their influence on the choice of siding material and, in particular, the choice of wood as a siding material. Four broad areas were investigated: performance, cost, appearance, and reputation of siding materials. The survey instrument investigated a number of factors in each of these areas that might influence the ultimate choice of siding.

SURVEY DESIGN

ASSUMPTIONS

Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia comprised the survey region for this study. While there are demonstrated differences in siding preferences from state to state, and from town to town, this grouping of states represents a distinct socio-economic region with a similar climatic exposure. This study focused on the decision-making process employed by architects, contractors, and homeowners within the study area and did not address differences across states or regions.

Architects, contractors, and homeowners were identified as the primary decision makers of interest for this study. They are considered to be the individuals most likely to influence the specification and purchase of a siding product used on a new home. The architect, contractor, and homeowners surveyed in this study were selected at random from lists purchased from a professional mailing-list provider. The architect and contractor lists included professionals known to do business in the survey region.

New homeowners were judged to be more familiar with the material selection and purchase process than the general public; having recently made a major purchase, it was believed they would be more likely to recall their decision-making process. The mailing-list provider was able to supply a list of homeowners who had a mortgage dated within the last 2 years combined with a length-of-residency of 2 years or less. This provided an opportunity to reach recent homebuyers in the survey region.

Because of the cost limitations in a survey of this type, the accuracy of individual responses was not assessed. Homeowner responses may be subject to greater variance than those of architects and contractors due to the lack of familiarity with the specific siding products covered.

The addresses chosen for the mail survey were selected, at random, from the purchased lists. The intent of the study was to analyze the siding purchase decision process for the region as a whole. No attempt has been made to distinguish between any sub-groups of architects, contractors, and homeowners, nor is it the intent to generalize the results for other regions of the United States.

DISCUSSION

SURVEY RESPONSE

There were 700 surveys mailed: 100 to architects, 300 to contractors, and 300 to homeowners. Adjusting for undeliverable surveys, the overall response rate was 23.4 percent. Response rates varied by respondent type: architects had 38.3 percent, contractors had 19.2 percent, and homeowners had 22.5 percent. These response rates are typical for surveys involving contractors and homeowners. Forbes et al. (5), in a mail survey of furniture makers, had an overall response rate of 31 percent; for small firms (more typical of our population), they had a range of 21 to 25 percent. Hansen and Bush (7) found a 35 percent response for homeowners. Stalling and Sinclair (12) reported a 14.6 percent response rate for contractors and Shook and Eastin (11) had an 18.8 percent rate for contractors. **Table 1** shows survey returns by state and respondent type.

Non-response bias was tested using the technique suggested by Armstrong and Overton (3). Thirty-three questions, 11 each for architects, contractors, and homeowners were analyzed comparing

TABLE 1. — Survey response rates.

| State | No. of architect responses | No. of contractor responses | No. of homeowner responses | Totals |
|-----------------------|----------------------------|-----------------------------|----------------------------|--------|
| Connecticut | 1 | 1 | 0 | 2 |
| Delaware | 0 | 3 | 0 | 3 |
| Massachusetts | 4 | 7 | 0 | 11 |
| Maryland | 4 | 3 | 8 | 15 |
| Maine | 2 | 0 | 0 | 2 |
| Nebraska | 1 | 1 | 0 | 2 |
| New Jersey | 3 | 5 | 7 | 15 |
| New York | 8 | 9 | 16 | 33 |
| Pennsylvania | 9 | 16 | 27 | 52 |
| Rhode Island | 1 | 0 | 0 | 1 |
| Virginia | 2 | 6 | 8 | 16 |
| Vermont | 1 | 0 | 0 | 1 |
| Totals | 36 | 51 | 66 | 153 |
| No. of surveys mailed | 100 | 300 | 300 | 700 |
| Undeliverable | 6 | 34 | 7 | 47 |
| Response rate (%) | 38.3 | 19.2 | 22.5 | 23.4 |

early survey respondents with late respondents. Only one of the 33 questions revealed any statistically significant difference in the average response comparing the early and late groups. The one question was significant at the 0.10 alpha level. These findings indicate that the presence of non-response bias is minimal, and is unlikely to affect the results of this research.

DEMOGRAPHIC DESCRIPTION OF RESPONDENTS

Of the 36 architects who returned usable questionnaires, 35 indicated their gender. The respondents had a mean age of 50.4 (median = 48.5) years. Eighty-three percent were male, and 17 percent female. Seventy-two percent of the respondents indicated that their practice billings were less than \$500,000 annually. Seventeen percent indicated they grossed more than \$1 million per year. When asked how often they design for new construction, remodeling, and repair; architects ranked each type about equally. Using a scale of 1 to 5 (1 = never, 2 = rarely, 3 = sometimes, 4 = frequently, 5 = always), average rankings were: new construction (avg. = 3.89), remodeling (avg. = 4.03), and repair (avg. = 3.75). The architects queried typically work on single-family residential homes and light commercial construction rather than other types of construction.

The contractors surveyed were overwhelmingly male: 94 vs. 6 percent female. The mean age was 45.3 (median = 45.5) years. Fifty-eight percent of the

contractors surveyed indicated that their annual revenues were less than \$500,000. Twenty-three percent indicated that they grossed over \$1 million per year. Contractors were evenly split when asked how often they work on new construction or repair and remodeling. Contractors were asked how frequently they work on different types of structures, ranging from single-family homes to commercial buildings. The contractor sample indicated they most frequently work on single-family homes. Their average rankings, using the same scale as noted for architects, were: single-family (avg. = 3.41), multi-unit residential (avg. = 1.98), light-commercial (avg. = 2.58), and commercial (avg. = 2.31).

Although the mailing sample of 300 included new homeowners in 10 of the 12 survey region states, usable responses were returned for only 5 of these: New York, New Jersey, Pennsylvania, Maryland, and Virginia. These states account for 78 percent of the population in the survey region. The states that contributed no responses were either small in population or had no usable addresses provided by the purchased mailing list supplier. Caution should be used in extending any of the homeowner conclusions beyond these five states, particularly as no New England states were covered in the responses. The homeowners surveyed were 76 percent male and 24 percent female ($n = 65$). The average age reported was 40.2 (median = 38) years. Homeowners reported

owning an average of 2.43 (median = 2) homes to date. The reported occupancy rate averaged 2.95 (median = 3) people per home. Homeowners estimated the current value of their home as follows: 27 percent at less than \$100,000, 48 percent at between \$100,000 and \$200,000, and 25 percent greater than \$200,000. Annual household income varied widely.

DEMOGRAPHIC ANALYSIS

Logistic regression analysis was used to test the significance of demographic variables on the choice of solid wood as the preferred siding. A logistic regression is used to analyze data involving discrete choice variables. In our case, we were hoping to gain insight into why a decision maker chooses solid wood siding over other siding choices. Using the logit model as described in Griffiths et al. (6), three models were tested, one each for architects, contractors, and homeowners. Significant results were found in the model for architects. The SAS™ statistical software package was used to perform the logistic regression.

The architect model analyzed is as follows:

$$Siding_i = \beta_0 + \beta_1 \times Small_i + \beta_2 \times Medium_i + \beta_3 \times Single_i$$

$i = 1, 2, \dots, 35$

The categorical variable “small” is coded “1” if the firm revenues were less than \$100,000 and for firms with revenues between \$100,000 and \$1 million the “medium” variable was coded a “1.” The “single” variable captured the architect’s frequency of designing single-family homes. Architects responding that they “frequently” or “always” design single-family homes were coded a “1” for the “single” variable. Those who responded “sometimes,” “rarely,” or “never” were coded a “0.”

RESULTS

DEMOGRAPHIC ANALYSIS

For the architect model results see top of page.

The negative sign on the intercept indicates a strong bias for large firms to choose a siding type other than solid wood. The other statistically significant result at the 0.05 alpha level is the parameter estimate for the frequent designers of single-family homes. This shows a clear preference for solid wood siding among those architects who “frequently” or “always” design single-family homes

$$Siding_i = -3.5708 + 2.5076 \times Small_i + 1.8039 \times Medium_i + 2.1500 \times Single_i$$

(1.4288) (1.3917) (1.2498) (0.9289) Std. Errors
(0.0125) (0.0716) (0.1489) (0.0206) Chi-Square Probabilities

TABLE 2. — Average ratings of reasons for choosing siding.^a

| | Better performance | Lower cost | Better appearance | Recommended by others |
|------------------------------|--------------------|------------|-------------------|-----------------------|
| Architects (<i>n</i> = 29) | 4.00 | 2.92* | 4.26 (ac) | 2.71* |
| Contractors (<i>n</i> = 30) | 3.62 (ch) | 2.72 (ch) | 3.57 (ac,ch) | 3.14* |
| Homeowners (<i>n</i> = 62) | 4.37 (ch) | 3.47 (ch) | 4.36 (ch) | 3.13* |

^a Scale: 1 = not important; 2 = somewhat; 3 = average; 4 = very; 5 = extremely important. * indicates no statistically significant difference from a neutral response (3 = average). Comparison of means test indicates statistically significant (0.05 alpha level) pair-wise differences for: architects vs. contractor (ac); contractors vs. homeowners (ch).

vs. those who answered with a “never,” “rarely,” or “sometimes.”

Note that the positive signs on the parameter estimates for small and medium firms, although not statistically significant, provide evidence that smaller firms may be more likely to use solid wood as their preferred siding choice. The lack of a significant result for the firm size parameters may be attributed to the small data set (*n* = 35), although the results show the expected trend.

The SAS package can also be used to calculate an odds ratio that is interpreted as a change in the probability of selecting the dependent variable versus a reference group. Results of the odds ratio calculations are:

| Variable | Reference group | Odds ratio |
|------------------------|------------------------------|------------|
| Small firms | vs. large firms | 12.276 |
| Med. firms | vs. large firms | 6.073 |
| Frequent single family | vs. infrequent single family | 8.585 |

We interpret the odds ratio as follows: when comparing small firms to large firms, small firms are about 12 times more likely to use solid wood most frequently. Similarly, medium-size firms are only six times more likely than large firms to use solid wood. Lastly, those firms who frequently design single-family homes are about eight times more likely to be frequent users of solid wood siding compared to other firms.

Lack of significant results in the contractor and homeowner cases may be attributed to the small number of “solid wood” choosers in the data set.

ARCHITECT PERCEPTIONS

Each respondent group was asked to rate the importance of performance,

cost, appearance, and the recommendations of others in their purchase decision. Appearance and performance emerged as key drivers in the purchase decision for architects, contractors, and homeowners alike. **Table 2** lists the average ratings for each of the groups surveyed. Cost and the recommendation of others were consistently ranked lower.

The majority of respondents specified masonry (brick, stone, or stucco) or solid wood most frequently. There was very little difference found in the importance rankings when the brick group was compared to the solid wood group. All architects specified brick, stone, or stucco and 91.7 percent indicated they specified solid wood. Vinyl was specified by 55.6 percent of respondents and fiber-cement listed by only 8.3 percent.

Architects were asked what siding type they most frequently used. Forty-seven percent selected brick, stone, or stucco as their most frequently used siding type; 38 percent chose solid wood, 11 percent vinyl, and only 3 percent said fiber-cement. The most frequently used wood siding among architects surveyed was cedar shakes and shingles (58%), followed by western red cedar (23%), eastern white/Atlantic cedar (15%), and southern pine (4%).

Architects indicated that appearance and performance were the most important reasons to choose a particular siding. Survey participants were asked to rate the importance of four broad product attributes. Respondents rated the importance of product performance, cost, appearance, and the recommendation of others on a 5-point scale (1 = not important; 2 = somewhat important; 3 = of average importance; 4 = very important;

TABLE 3. — Average rating of siding appearance characteristics.^a

| | Architects (n = 35) | Contractors (n = 48) | Homeowners (n = 64) |
|-----------------------|---------------------|----------------------|---------------------|
| Able to change colors | 2.74* | 3.19* (ch) | 2.57 (ch) |
| Up-close appearance | 3.97 | 3.98 | 3.73 |
| Fits style of house | 4.39 | 4.04 | 4.30 |
| Fits the landscape | 3.79 | 3.71 | 3.97 |
| Fits neighborhood | 3.88 | 3.65 | 3.59 |
| Fits desired status | 3.45 | 3.63 | 3.66 |
| Holds up over time | 4.30 | 4.26 (ch) | 4.64 (ch) |

^a Scale: 1 = not important; 2 = somewhat; 3 = average; 4 = very; 5 = extremely important. * indicates no statistically significant difference from a neutral response (3 = average). Comparison of means test indicates statistically significant (0.05 alpha level) pair-wise differences for: contractors vs. homeowners (ch).

TABLE 4. — Average rating of information sources on siding choice.^a

| | Architects (n = 36) | Contractors (n = 49) | Homeowners (n = 63) |
|-------------------------------|---------------------|----------------------|---------------------|
| Advertising | 1.82 | 2.15 | 2.16 |
| My own knowledge | 4.22 (ah) | 4.16 (ch) | 3.63 (ah, ch) |
| Product reputation | 4.06 | 4.15 | 4.00 |
| Specified by architect | n/a | 3.04* | 3.05* |
| Chosen/specified by builder | 2.23 (ah) | n/a | 2.92* (ah) |
| Chosen/specified by homeowner | 3.12* (ac) | 3.66 (ac) | n/a |
| Specified by zoning | 2.38 | 2.90* | 2.78* |
| Magazine/technical articles | 3.22* (ah) | 3.04* (ch) | 2.34 (ah, ch) |
| Supplier/lumber retailer | 2.44 | 2.89* | 2.57 |

^a Scale: 1 = not important; 2 = somewhat; 3 = average; 4 = very; 5 = extremely important. * indicates no statistically significant difference from a neutral response (3 = average). Comparison of means test indicates statistically significant (0.05 alpha level) pair-wise differences for: architects vs. contractor (ac); architects vs. homeowners (ah); contractors vs. homeowners (ch).

5 = extremely important). Average ratings for architects (n = 29) were 4.26 for appearance and 4.00 for performance. Cost and the recommendation of others averaged 2.92 and 2.71, respectively. There were no statistically significant differences found when comparing the responses of those architects who most frequently use brick, stone, or stucco compared to those preferring solid wood.

Delving deeper into the reasons why appearance is important, architects were asked to rate how important each of the following were:

- Able to change colors
- Up-close appearance
- Fits style of house
- Fits the landscape
- Fits the neighborhood
- Fits desired status
- Holds up over time

Table 3 shows appearance ratings for the architects, contractors, and homeowners surveyed. For architects, “fits style of house” and “holds up over time” rated the highest, averaging 4.39 and

4.30, respectively (4 = very important). “Able to change colors” ranked lowest with an average of 2.74 (with 2 = somewhat important). Again, no differences were found regarding the appearance ratings when architects most frequently using brick, stone, or stucco were compared with those most frequently using solid wood.

Architects were also asked to rate how frequently they experienced performance problems with their first choice of siding material (1 = no problems; 2 = few problems; 3 = some; 4 = many; 5 = always have this problem). No performance issue averaged higher than a 2.19. Apparently, architects have “few problems” with the performance of the siding they use.

Lastly, architects were asked to rate the information sources that influenced their decision. Using the same importance scale as for appearance factors, the following information sources were considered:

- Advertising
- My own knowledge

- Product reputation
- Specified by contractor
- Chosen by homeowner
- Specified by zoning
- Technical articles
- Supplier

The sources “my own knowledge” and “product reputation” were the only two sources averaging above 4.0 (4 = very important); the average ratings were 4.22 and 4.06, respectively (Table 4). “Advertising” ranked lowest at 1.82 (2 = somewhat important). The mechanism for accumulating “my own knowledge” or “product reputation” was not addressed in this work. One must assume, however, that advertising plays at least an indirect role in forming that base of knowledge and reputation. This linkage should be explored in future work.

CONTRACTOR PERCEPTIONS

Contractors consider performance and appearance as having a more important influence on selection than do cost or recommendations. Average importance ratings were: performance (3.62), cost (2.72), appearance (3.57), and recommended by others (3.14) (Table 2). This ranking matches the results found for architects.

Contractors worked with a wide variety of siding types. Vinyl was reportedly used by 88 percent of contractors; followed by solid wood (77%); brick, stone, or stucco (47%); hardboard/OSB (47%); aluminum (31%); and fiber-cement (21%) (n = 51). When asked their first choice of solid wood type, western red cedar was selected by 67 percent of the respondents. Cedar shakes and shingles followed (27%), then eastern white/Atlantic cedar (15%). Contractors chose vinyl (61%) as the one siding type they used most frequently, followed by solid wood (26%) and brick, stone, or stucco (11%).

Contractors were asked to rate the frequency of occurrence of nine kinds of performance problems.

- Poor durability
- Easily damaged
- Material not available
- Poor environmental record
- Short service life
- Difficult to install
- Installed stability
- Inconsistent quality
- Not long enough

TABLE 5. — Contractors ranking of siding with most and least problems.^a

| | Having most | Having least |
|-------------------------|-----------------|--------------|
| | ----- (%) ----- | |
| Aluminum | 30.0 | 2.3 |
| Hardboard/OSB | 22.5 | 2.3 |
| Solid wood | 20.0 | 18.2 |
| Vinyl | 17.5 | 40.9 |
| Fiber-cement | 7.5 | 2.3 |
| Brick, stone, or stucco | 2.5 | 34.1 |
| Usable responses | (n = 40) | (n = 44) |

TABLE 6. — First choice in siding type.

| | Architects ^a (n = 36) | Contractors ^a (n = 47) | Homeowners ^b (n = 62) |
|-------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| | ----- (%) ----- | | |
| Brick, stone, or stucco | 47 | 11 | 56 |
| Vinyl | 11 | 61 | 29 |
| Aluminum | 0 | 0 | 2 |
| Fiber-cement | 3 | 0 | 0 |
| Hardboard/OSB | 0 | 2 | 0 |
| Solid wood | 39 | 26 | 13 |

^a Siding type used most frequently.

^b Given the choice for a new home.

The scale used for ranking was: 1 = none, 2 = few, 3 = some, 4 = many, and 5 = always. No problem type averaged higher than a 2.19 nor lower than 1.68 (2 = few problems). There were no statistically significant differences between the average ratings of those contractors frequently using solid wood vs. those who more frequently used other siding types.

Contractors were also given two open-ended questions: “Which siding material has the MOST problems?” and “Which siding material has the LEAST problems?” Responses are shown in **Table 5**. Aluminum (30%) and hardboard siding (23%) were labeled as having the “most” problems. Vinyl (41%) and brick, stone, or stucco (34%) were reported as having the least. Solid wood received mixed responses: 20 percent of respondents reported it as having the most problems and 18 percent reported it as having the least.

Contractors ranked “holds up over time” and “fits style of house” the highest of the appearance considerations with average ratings of 4.26 and 4.04, respectively (4 = very important) (**Table 3**). Up-close appearance also was of high importance (3.98). The remainder

of the characteristics had lower mean importance ratings.

HOMEOWNER PERCEPTIONS

As noted earlier, although surveys were mailed to 10 of the 12 states in the survey region, responses were generated from only 5 of these: New York, New Jersey, Pennsylvania, Maryland, and Virginia. These states made up the vast majority of new building activity in the region. Caution should be used in trying to generalize results from this analysis to the entire region.

Homeowners were asked if they were the first owner of a recently constructed house or owned a pre-existing house. Seventy-one percent of the respondents indicated that their current house was a pre-existing one. A follow-up question asked whether the homeowners had chosen the siding on their current homes. Only 11 percent of homeowners surveyed indicated they had chosen the siding on their homes. This result may indicate that homeowners play a lesser role in the siding choice process.

When asked what siding type they currently had on their homes, 47 percent of respondents indicated that they had vinyl siding, followed by 32 percent indicating they had brick, stone, or stucco (n = 66). Solid wood siding was indi-

cated by 15 percent of respondents, followed by aluminum (12%) and hardboard/OSB (11%). No respondent indicated that they currently had fiber-cement siding.

Homeowners’ preferences regarding the type of solid wood siding were also investigated. Cedar shakes and shingles were the most popular choice (39%), followed by western red cedar (18%), and redwood (12%) (n = 57).

Fifty-six percent of the homeowners surveyed would select brick, stone, or stucco as their first choice if they were going to build a new home (n = 62). Twenty-nine percent would choose vinyl and only 13 percent would select solid wood.

Echoing the results for architects and contractors, homeowners felt that “better performance” and “better appearance” ranked as the most important factors in siding choice, with average scores of 4.37 and 4.36, respectively (**Table 2**). “Cost” was given an average rating of 3.47 and the attribute of “recommended by others” a mean of 3.13.

Regarding appearance concerns, homeowners ranked “holds up over time” and “fits style of house” highest, with averages of 4.64 and 4.30, respectively (4 = very important) (**Table 3**).

COMPARISONS ACROSS SURVEY GROUPS

There are some clear differences when comparing preferences of the three survey groups. **Table 6** presents the preferred siding type for each respondent category. Architects and homeowners chose brick, stone, or stucco as their number one choice in siding. Contractors prefer vinyl. Architects and contractors chose solid wood as their second favorite siding. Homeowners listed vinyl as their second choice and wood third.

Table 7 shows respondent preferences for solid wood siding types. Cedar shakes and shingles and western red cedar were the two most popular types of solid wood siding for all groups. Contractors clearly preferred western red cedar. There is a long history of using beveled western red cedar siding in the Northeast and it is widely available. Architects and homeowners preferred cedar shakes and shingles.

Performance ranked as the most important reason for choosing siding, and most respondents felt that their preferred siding choice did not suffer greatly in any

of the performance areas questioned. Performance problem expectations (on the part of homeowners) or experience (for contractors and architects) for their preferred siding choice are shown in **Table 8**. Average ratings ranged near a 2 (few problems). The highest average rankings were from homeowners on the issues of “difficult to install” (2.51) and “installed stability” (2.39). Siding manufacturers, architects, and contractors may see this as an area to address in educating the homeowner.

Comparing the perceptions of each respondent category to the influences of others also reveals differences. Architects, for example, were asked to rate the importance of homeowner choice and builder specification (**Table 4**). As might be expected, the architects rated homeowner choice as more important (3.12; 3 = average importance) than builder specification (2.23; 2 = somewhat important). One might expect that the homeowner is paying the bill and this result holds intuitive appeal.

Contractors showed average ratings higher for homeowner influence (3.66) vs. architect influence (3.04), although this difference was not statistically significant. Homeowners found no difference in the influence of architects compared to contractors rating them both about average. Homeowners also rated “own knowledge” and the influence of “magazine/technical articles” lower than both architects and contractors.

CONCLUSIONS

Given the small fraction of homeowners indicating that they chose the siding on their homes, builders and architects appear to be the key decision makers regarding siding. A very small minority of homeowners selected the siding on their homes. However, both architects and contractors think that homeowner opinion is an important consideration.

Evidence is given of the influence of architect firm practice on the choice of solid wood siding. Firms concentrating on single-family design are more likely to choose solid wood siding than those firms that work primarily on multi-unit residential, light commercial, and commercial structures.

Additional research is needed to precisely determine how the collaboration of architect, builder, and homeowner influences the purchase decision process. The relatively small sample sizes in this

TABLE 7. — First choice in solid wood siding type.

| | Architects ^a (n = 26) | Contractors ^a (n = 30) | Homeowners ^b (n = 57) |
|------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| | ------(%)----- | | |
| Cedar shakes/shingles | 58 | 27 | 39 |
| Eastern white/Atlantic cedar | 15 | 3 | 9 |
| Southern pine | 4 | 0 | 9 |
| Redwood | 0 | 0 | 12 |
| Western red cedar | 23 | 67 | 18 |
| White pine | 0 | 3 | 4 |
| Douglas-fir | 0 | 0 | 0 |
| Hemlock | 0 | 0 | 0 |
| Cypress | 0 | 0 | 2 |
| Tropical hardwood | 0 | 0 | 7 |

^a Siding type used most frequently.

^b Given the choice for a new home.

TABLE 8. — Average performance problem expectations/experience for first choice in siding.^a

| | Architects (n = 36) | Contractors (n = 46) | Homeowners (n = 58) |
|---------------------------|------------------------|-------------------------|------------------------|
| Poor durability | 1.94 | 1.93 | 2.12 |
| Easily damaged | 2.19 | 2.16 | 2.26 |
| Material not available | 1.69 | 2.07 | 2.00 |
| Poor environmental record | 1.64 | 1.80 | 2.09 |
| Short service life | 1.61 | 1.68 | 1.98 |
| Difficult to install | 1.92 (ah) ^b | 2.04 | 2.51 (ah) |
| Installed stability | 2.00 | 2.10 | 2.39 |
| Inconsistent quality | 2.14 | 2.00 | 2.18 |
| Not long enough | 1.56 | 2.19 | 2.21 |

^a Scale: 1 = none; 2 = few; 3 = some; 4 = many; 5 = always.

^b Comparison of means test indicates statistically significant pair-wise differences for: architects vs. homeowners (ah).

study limit the ability to generalize the results. Follow-up survey work featuring a larger mailing and increased number of responses will tighten confidence intervals and would likely increase the number of significant findings.

Conducting focus groups is an additional method that can be used to gain further insights. The decision-making process is complex and factors that influence selection vary among architects, contractors, and homeowners.

Given the choice, architects prefer designing with brick, stone, or stucco, followed by solid wood as a second choice in siding. Contractors prefer vinyl by a wide margin, followed by wood. Homeowners prefer brick, stone, or stucco, followed by vinyl, then by solid wood.

The most highly valued sources of information that guide choice are the product’s reputation, and the product knowledge of architects, contractors, or

homeowners. This result should have a bearing on the type of advertising industry participants will choose to employ.

Clear differences exist among the key decision makers. Architects, contractors, and homeowners broadly agree that strong performance and good appearance are the key drivers that influence the choice of siding. Key appearance concerns were that the siding material “holds up over time” and that it “fits the style of the house.” Recent growth of the fiber-cement siding industry seems to support the notion that durability sells. Given the high ratings that architects and contractors give to homeowner influence, changes in homeowner tastes will help drive the future choice of siding.

All three groups ranked performance as a major concern. However, they anticipate having “few” performance problems with the siding they choose. Home-

owners and architects prefer brick, stone, or stucco, while builders prefer vinyl. Cedar shakes and shingles and western red cedar emerged as the favorite solid wood siding in this study.

LIMITATIONS OF STUDY

The primary goal of this work was to identify key decision makers and attributes affecting the choice of siding in the Northeast. This study comprised a broad survey region with a relatively small mailing. The number of responses by architects, contractors, and homeowners was small, although consistent with previous study response rates. Care should be taken when projecting the survey findings to region-wide behavior as the confidence intervals used must be wide. In order to narrow confidence intervals, additional data will be required.

Focus groups of the decision makers would provide additional insight into the decision-making process for siding choice. In order to provide a firm basis for action, additional survey work is needed in order to narrow confidence in-

tervals for prediction. This study has amassed a significant volume of data concerning current choices, problems, preferences, and opinions that can now be refined and extended.

Regional differences within the broad survey region should be explored. Again, extension of the current work, utilizing a larger database, will be needed to accurately explore these differences.

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