Building Products in New Residential Construction: What, Where and Who

Special Studies, June 1, 2020
By Paul Emrath, Ph.D.
NAHB Economics and Housing Policy Group

NAHB analysis of government data indicates that new single-family and multifamily construction used about $94.9 billion in building products in 2019. Although the vast majority of the $94.9 billion was produced domestically, supporting jobs in the U.S. manufacturing sector, about 6.4 percent ($6.1 billion) was imported from other countries. Although the domestic production was spread across the entire country, with several billion dollars produced in each of the upper Midwestern states, the largest amounts were manufactured in the populous states of Texas ($7.9 billion) and California ($6.9 billion).

Among the major product categories, new residential construction used more than $11 billion each of “cement and concrete products” and “architectural and structural metals” in 2019. If added together, the three categories of wood products (“sawn lumber and treated wood products,” “plywood and engineered wood products,” and “other wood products”) accounted for over $10 billion. Although it is relatively common for customers and subcontractors to have a role in choosing some building products, in nearly all cases studied by NAHB it was most often the builder him- or her-self who had the greatest influence over product selection.

The following sections explain these “what,” “where,” and “who” results in more detail.

What

For data on the products used in residential construction, NAHB relied primarily on the supply tables for the manufacturing sector in the Input-Output Accounts generated by the U.S. Bureau of Economic Analysis (BEA). The supply tables capture only the products used directly by an industry. To isolate the products used by particular segments of the construction industry—specifically, new single-family and multifamily construction—it is necessary to use the most detailed version of the tables, broken into over 400 industry and product categories. Because these tables are available only with a lag, NAHB adjusted them to 2019 levels using the changes in single-family and multifamily Residential Fixed Investment (RFI) in BEA’s National Income and Product Accounts. To make the results compatible with state-level data used in the next section, the product categories were aggregated slightly, up to the 4-digit categories in the North American Industry Classification System (NAICS). The result is shown in Table 1.

Table 1. Building Products Used Directly in New Single-family and Mulitfamily Construction: 2019

Product Category		Thousand $
3273	Cement and concrete products	11,707,117
3323	Architectural and structural metals	11,173,588
3241	Petroleum and coal products	7,726,130
3261	Plastic products	6,953,227
3371	Household & inst. furniture & kitchen cabinets	5,367,426
3212	Plywood and engineered wood products	4,225,517
3352	Household appliances	4,221,988
3219	Other wood products	4,141,010
3329	Other fabricated metal products	4,035,937
3334	HVAC & commercial refrigeration equipment	3,850,142
3359	Other electrical equipment and components	3,560,909
3372	Office furniture and fixtures	3,535,062
3279	Other nonmetallic mineral products	3,028,557
3255	Paint, coatings, and adhesives	1,976,229
3211	Sawn lumber and treated wood products	1,822,775
3351	Electric lighting equipment	1,742,779
3339	Other general purpose machinery	1,689,234
3271	Clay products and refractory materials	1,533,158
3253	Agricultural and basic chemicals*	1,323,407
3333	Commercial and service industry machinery	1,317,083
3222	Converted paper products	1,316,654
3325	Hardware	1,290,592
3262	Rubber products	915,258
3353	Electrical equipment manufacturing	822,876
3274	Lime and gypsum products	743,354
3322	Cutlery and handtools	673,509
3331	Ag., construction, and mining machinery	516,098
3324	Boilers, tanks, and shipping containers	400,665
3149	Other textile products	394,945
3311	Iron and steel and ferroalloys	377,054
3312	Products manufactured from purchased steel	365,183
3327	Machined products and screws, nut and bolts	316,971
3328	Coating, engraving, and heat treating metals	282,478
3141	Textile furnishings	220,417
3272	Glass and glass products	188,161
3345	Electronic instruments	162,012
3132	Fabrics	134,917
3342	Communications equipment	119,563
3314	Other nonferrous metal products	116,466
3344	Semiconductors and electronic components	99,349
3259	Other chemical products and preparations	79,909
3321	Forged and stamped metal products	59,997
3326	Spring and wire products	37,890
3341	Computers and peripheral equipment	27,568
3221	Pulp, paper, and paperboard	14,451
3231	Printing and related support activities	10,322
3313	Alumina and aluminum products	8,258
3315	Foundry products	4,129
3256	Soap, cleaning compound, and toiletries	2,064
3369	Other transportation equipment	2,064
3399	Other miscellaneous manufactured products	108,080
Total: all products listed above		**94,933,445**

*includes a small amount of product category 3251 (basic chemicals).
Source: NAHB calculations based on U.S. Bureau of Economic Analysis Input-Output Accounts data

As the top of the table shows, in 2019 new residential construction used $11.7 billion of product category 3273 (cement and concrete products) and $11.2 billion of 3323 (architectural and structural metals). Architectural and structural metals is a fairly diverse category that includes, among other items, metal windows and doors, sheet metal ductwork, and rails and fencing.

After 3273 and 3323, new residential construction used $7.7 billion of 3241 (petroleum and coal products) and $7.0 billion of 3261 (plastic products). Category 3241 includes asphalt roofing and paving materials as well as any petroleum based fuels and lubricating products. Category 3261 includes plastic piping, plumbing fixtures and polystyrene foam insulation. For more detail on what's included in each of the product categories in Table 1, please consult the official NAICS Code Drilldown Table.

Although individually accounting for smaller shares, when added together the three main categories of wood products (3211, 3212 and 3219) account for $10.1 billion of the products used in new residential construction. And this does not include the $5.4 billion in furniture and kitchen cabinets (product category 3371).

Where

In addition to supply tables, BEA's input-output accounts include data on how much of the products used by various industries is imported. When applied to Table 1[1], these data indicate that about $6.1 billion—roughly 6.4 percent—of the $94.9 billion in products used in new residential construction in 2019 was imported from other countries (the BEA data do not indicate which countries). The remaining 93.6 percent, $88.8 billion, was produced domestically, supporting jobs in the U.S. manufacturing sector.

NAHB used data on employment to break the $88.8 billion in domestic production down by state (Table 2). Most of the employment data NAHB used comes from the Quarterly Census of Employment and Wages (QCEW) produced by the U.S. Bureau of Labor Statistics (BLS). However, BLS suppresses some of the state-level data for confidentiality reasons. NAHB was able to fill in a few of the gaps with County Business Pattern (CBP) employment data from the U.S. Census Bureau. Although the CBP data are also sometimes suppressed, the suppression pattern is not identical to that in the QCEW, so in a few cases the CPB can supply state-level information not available from the QCEW.

Even so, there is a relatively small residual of $900 million in domestic production that cannot be assigned to a particular state. The remainder is distributed widely across the country, with 30 states accounting for over $1 billion in production each. The largest amount ($7.9 billion) was produced in the state of Texas. California was second (with $6.9 billion).

Texas and California are the two largest states in the country in terms of population, and there is a general tendency for the more populous states to appear toward the top of Table 2. The correlation is not perfect, however. A block of six contiguous states in or adjacent to the traditionally industrial upper Midwest—Ohio, Pennsylvania, Illinois, Michigan, Indiana and Wisconsin—appear in the top 10, even though Indiana and Wisconsin fall well out of the top 10 in terms of total population. Each of the top 10 states in Table 2 produced more than $3 billion of the building products used in new residential construction in 2019.

A larger table showing the breakdown of each of the 51 product categories listed in Table 1 according to the state in which it was produced is also available (Products by State).

Table 2.
Location Where Building Products Used in New Residential Construction are Manufactured

Location	Thousand $
Texas	7,871,130
California	6,862,478
Ohio	5,149,179
Pennsylvania	4,418,515
Illinois	3,844,981
North Carolina	3,671,092
Florida	3,551,910
Michigan	3,438,552
Indiana	3,374,502
Wisconsin	3,356,910
Georgia	2,992,741
Tennessee	2,786,226
New York	2,551,620
Alabama	2,055,512
Missouri	1,980,228
Minnesota	1,956,459
Louisiana	1,769,683
South Carolina	1,649,923
Virginia	1,632,886
Washington	1,611,250
Iowa	1,589,652
New Jersey	1,512,282
Oregon	1,470,428
Mississippi	1,414,939
Kentucky	1,369,029
Oklahoma	1,336,630
Massachusetts	1,199,495
Arkansas	1,136,347
Arizona	1,083,337
Kansas	1,038,911
Colorado	980,413
Utah	929,516
Connecticut	819,518
Maryland	688,608
Nevada	634,028
Nebraska	516,482
New Hampshire	466,740
Idaho	438,477
West Virginia	399,132
Maine	309,484
Montana	287,542
South Dakota	277,586
New Mexico	212,691
Vermont	181,098
Delaware	167,390
Wyoming	162,624
North Dakota	143,309
Rhode Island	129,996
Hawaii	98,759
Alaska	42,890
DC	263
Territories	333,730
Not Assignable	915,951
Total Produced Domestically	**88,813,053**
Imported	6,120,392
Total Used in New Residential Construction	**94,933,445**

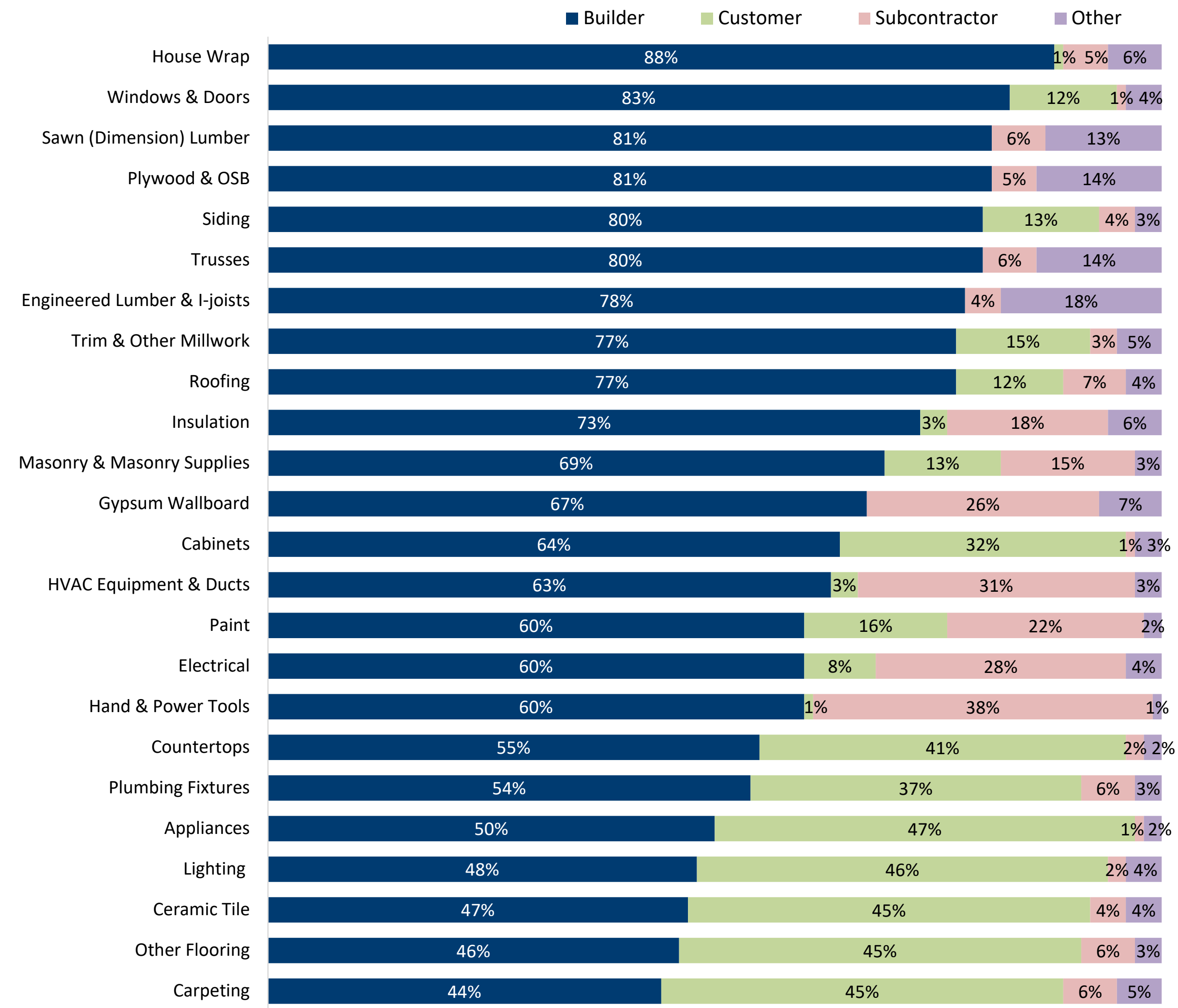
Source: NAHB estimates based on data from the U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, and U.S. Census Bureau.

Who

The process of purchasing building products can be somewhat complicated. Not only does building a home involve a large number of products, but different products may be purchased from various types of retailers or wholesalers, or even in some cases directly from the manufacturer. Moreover, building the typical single-family home requires 20 or more subcontractors, and the actual purchasing of various products may or may not be done by any subset of them. The customer or architect may also participate in choosing some products, especially (but not exclusively) in the case of custom homes built one at a time on the customer's land.

This raises a natural question about who, in practice, actually decides which building products to purchase. To gather information on this, NAHB included a multi-part question in its February 2020 survey for the NAHB/Wells Fargo Housing Market Index. The survey asked the panel of single-family builders who has the greatest influence on the selection of 24 listed products. Options included the builder, subcontractor, customer, architect and dealer or supplier. Results are summarized in Figure 1.

Figure 1. Who Has the Greatest Influence on Product Selection?



Source: Survey for the February 2020 NAHB/Wells Fargo Housing Market Index.

Most obvious tendency is that builders most often exert the greatest control over the selection of products—ranging more or less continuously from a low of 44 percent of the time for carpeting up to 88 percent of the time for house wrap. Carpeting is the only one of the listed items where some other entity (in this case, the customer) had the greatest influence on product selection more often than the builder, and this was by a very narrow margin (45 vs. 44 percent).

Seventeen of the 24 products are chosen primarily by the builder at least 60 percent of the time. The other 7 tend to be highly visible items are chosen relatively often by the customer: appliances (chosen primarily by the customer 47 percent of the time); lighting (46 percent); ceramic tile, carpeting and other flooring (45 percent each); countertops (41 percent) and plumbing fixtures (37 percent).

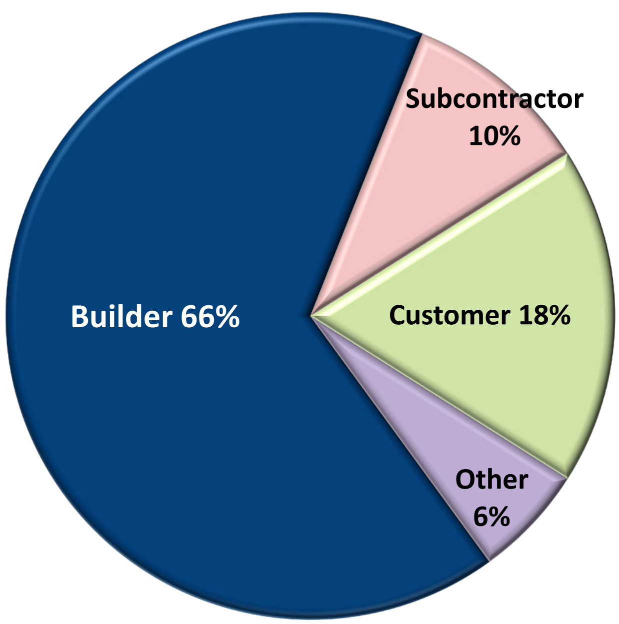
After builders and customers, subcontractors most often are the entities with the greatest influence on product selection. The five products chosen most often primarily by the subcontractor are hand & power tools (38 percent of the time) HVAC equipment (31 percent), electrical (28 percent), gypsum wallboard (26 percent), and paint (22 percent). In all five cases, builders are responsible for choosing the products 60 to 70 percent of the time—i.e., far more often than the subcontractors.

Examples of products chosen by some other entity a significant amount of the time are relatively minor. The only ones worth mentioning are the four categories of lumber products (sawn lumber, plywood & OSB, trusses, and engineered lumber & I-joists) that are chosen 11 or 12 percent of the time by the dealer or supplier.

Complete detail for each time appears in the full survey report at the end of this article. The report also contains alternate tabulations that include percentages of "NA" responses for builders who reported that they did not use a particular product. The effect of this is negligible, however, as all to nearly all builders reported using each product listed in the survey.

To summarize the results, Figure 2 shows the percentages of the various players who most often choose which building products to purchase, averaged over all 24 products in the survey. The figure illustrates the dominant role builders tend to play in the product selection process.

Figure 2. Who Has the Greatest Influence on Product Selection?
Average for 24 Building Products



Source: Survey for the February 2020 NAHB/Wells Fargo Housing Market Index .

Summary and Conclusion

Using data from BEA, NAHB has shown that new single-family and multifamily construction used about $94.9 billion in building products in 2019. This includes only commodities produced by the manufacturing sector and those used directly in the process of new construction. For estimates that include indirect effects and services supplied by other sectors of the economy (for example, those engaged in transporting, storing and selling building materials), see the previous article on the National Impact of Home Building and Remodeling.

Using data from BLS and the Census Bureau to break down the results, NAHB has further shown that production of the commodities used in new residential construction is widespread across the country. Over $1 billion was produced in each of 30 different states (over $3 billion in each of 10 different states). The vast majority—$88.8 billion or 93.6 percent—of the $94.9 billion total was produced within the U.S., supporting jobs in the U.S. manufacturing sector. Nevertheless, the 6.4 percent ($6.1 billion) of building products that are imported can be important for filling in gaps in supply to sustain construction activity and prevent spikes in construction costs and housing prices from occurring.

The process of purchasing building products can be somewhat complicated, involving subcontractors and different links in the supply chain. However, irrespective of these details, NAHB survey results show that, in nearly all cases, it is the builder him- or her-self who is most often responsible for selecting the products that are ultimately purchased. This suggests that suppliers can often get the biggest bang for their advertising bucks by marketing their products directly to builders.

---

[1] To allow for the possibility that imports were increasing disproportionately to homebuilding, NAHB used 71-industry import tables to develop factors for imported commodities used by the construction industry overall through 2018, and residential fixed investment was used only to adjust the numbers from 2018 to 2019.

Housing Market Index (HMI)

Special Questions on Who has the Greatest Influence On Selection of Products For A Typical Construction Project

February 2020

NAHB
National Association of Home Builders

Economics & Housing Policy Group

Table of Contents

Introduction:

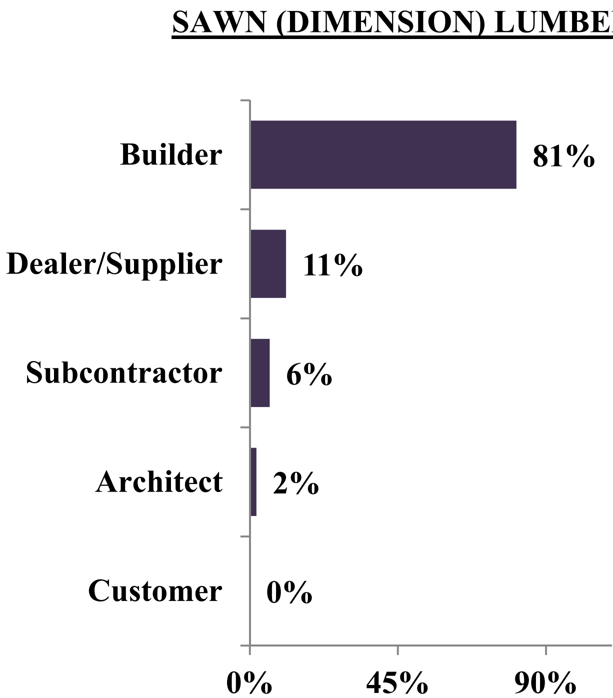
For more than 25 years, the National Association of Home Builders (NAHB) has conducted a monthly survey of its builder members that is used to generate the NAHB/Wells Fargo Housing Market Index (HMI). The main section of the HMI survey asks builders to rate market conditions for the sale of new homes at the present time and expected over the next 6 months, as well as the traffic of prospective buyers. The results are combined into a single composite index that measures the overall strength of the market for new single-family housing.

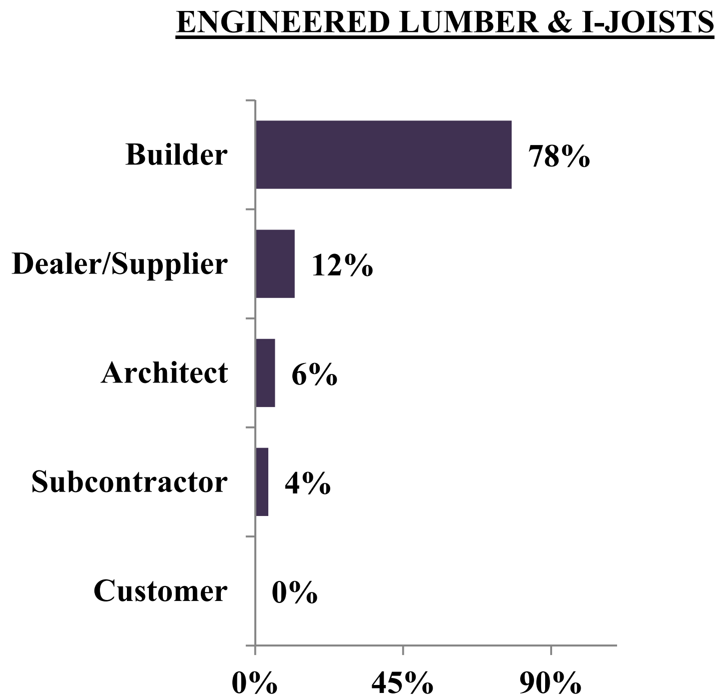
Throughout its history, the HMI has generally performed well as a leading indicator of single-family housing starts and is widely reported in business media and used by government and Wall Street analysts. This month survey was sent electronically to a panel of roughly 2,750 builder members. Results are broken down by the four census regions and by total number of units started in 2019. The survey sample is refreshed annually to keep the panel consistent overtime.

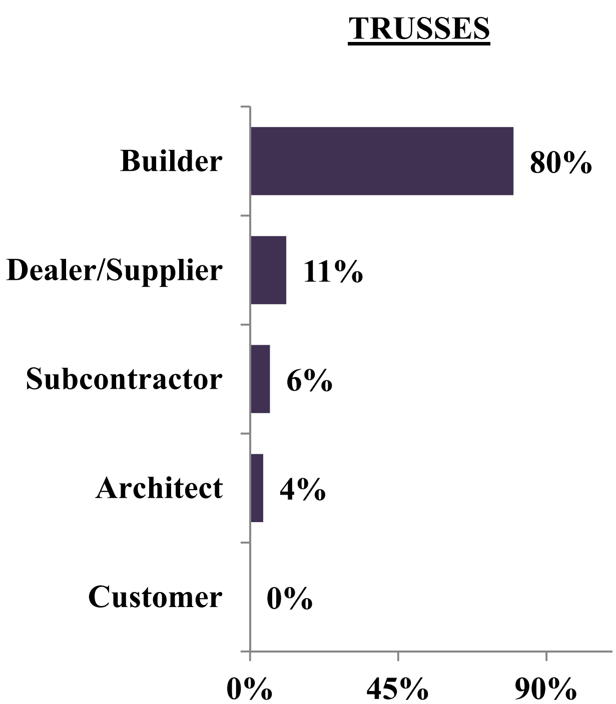
In addition to the questions that provide the data needed to compute the HMI, the survey often also includes a set of “special” questions on a topic of current interest to the housing industry. The special questions cover issues relating to who has the greatest influence on product selection for a typical construction project. The results in this report are based on 352 responses to these special questions.

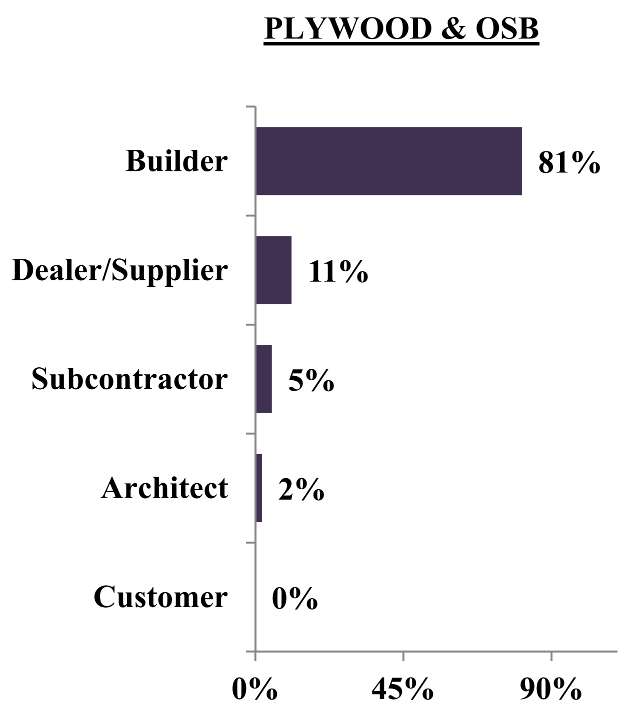
Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents)



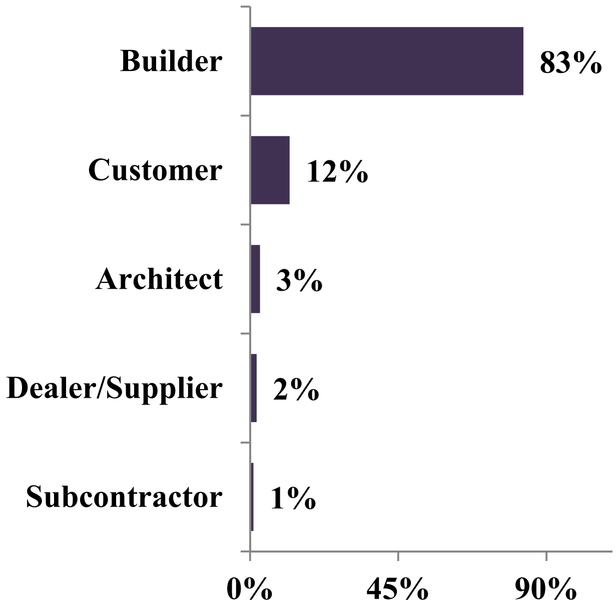




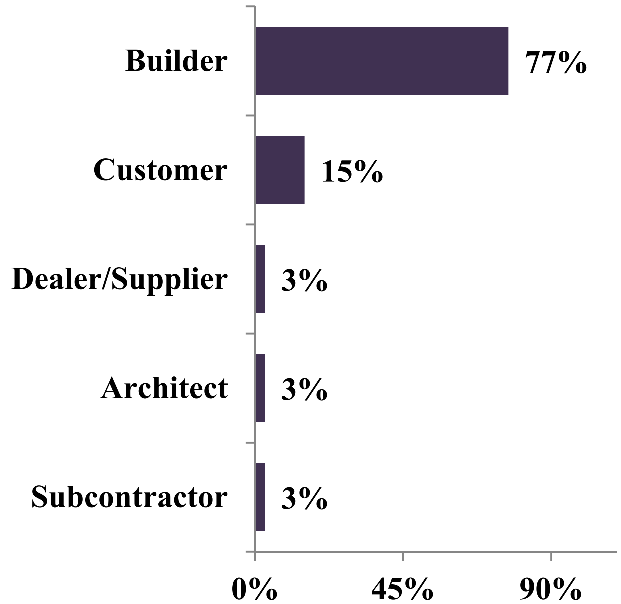


Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) - *continued*

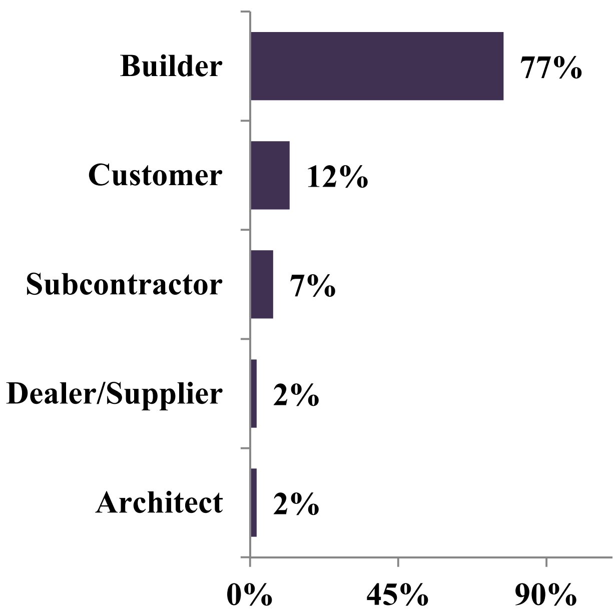
WINDOWS & DOORS



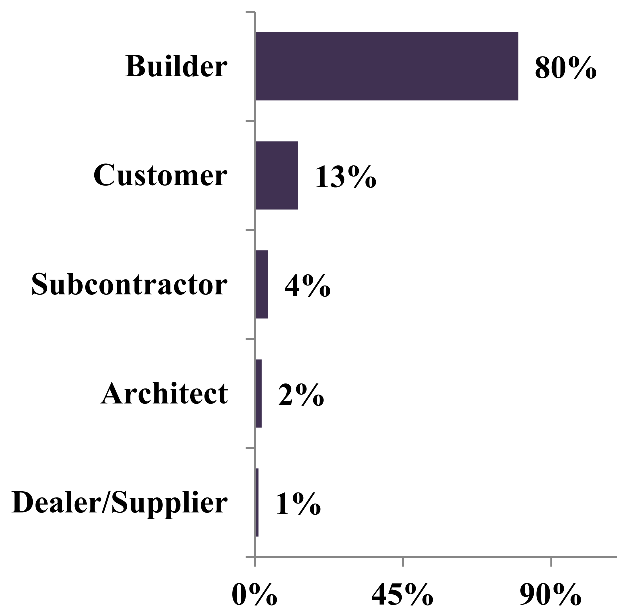
TRIM & OTHER MILLWORK



ROOFING

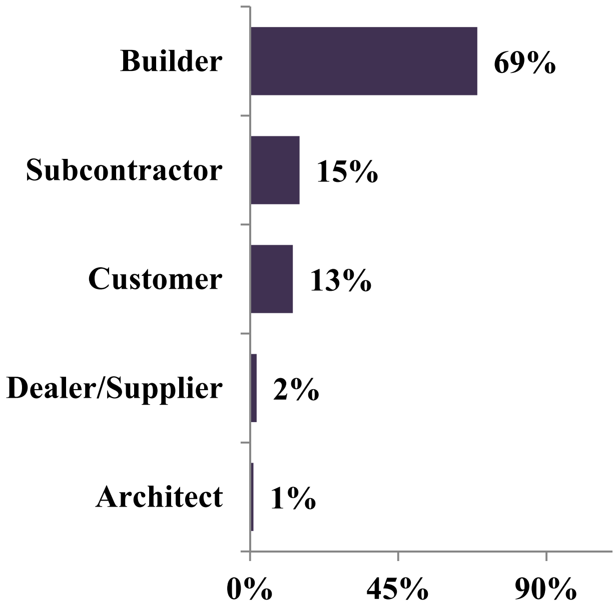


SIDING

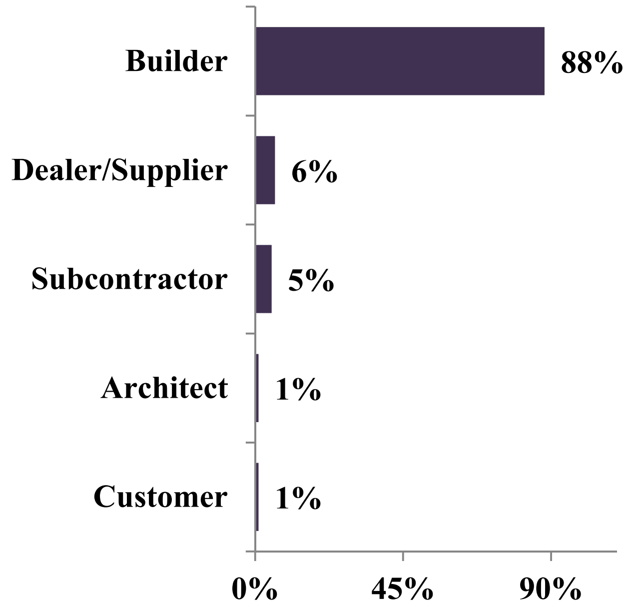


Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) - *continued*

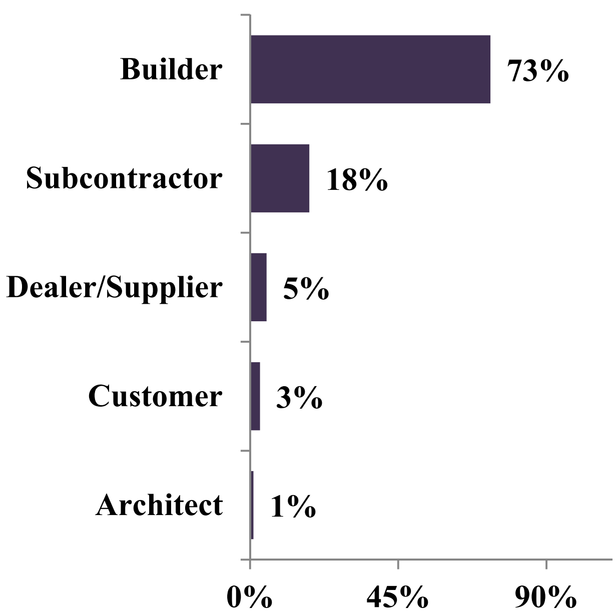
MASONRY & MASONRY SUPPLIES



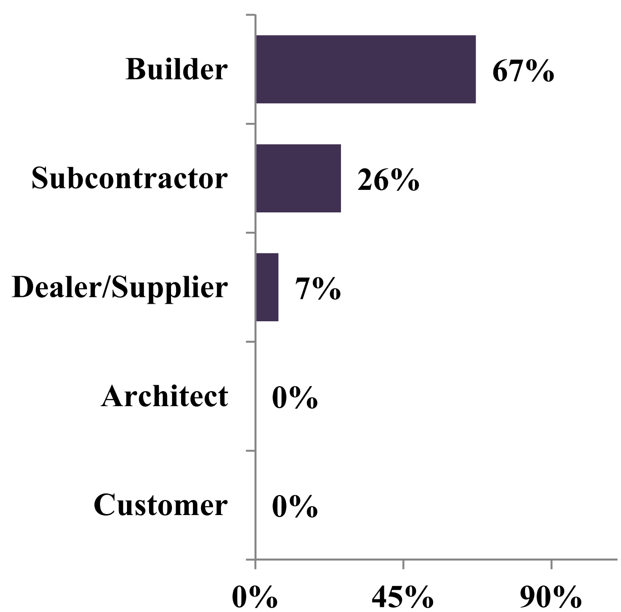
HOUSE WRAP



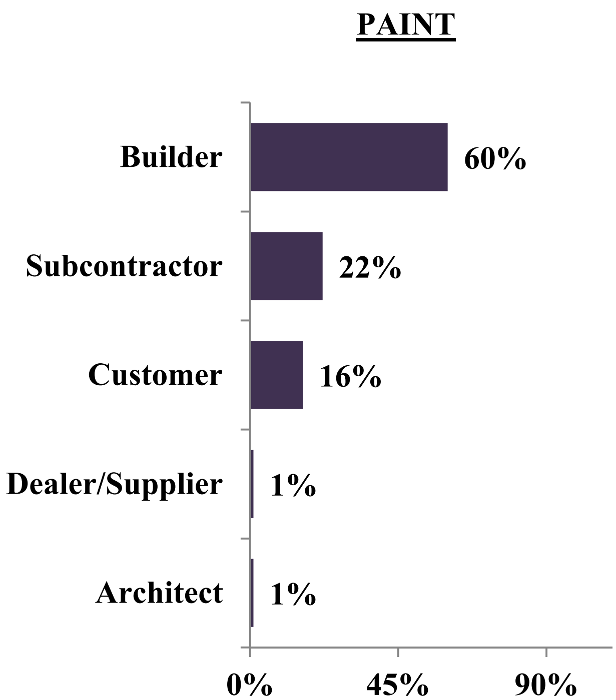
INSULATION

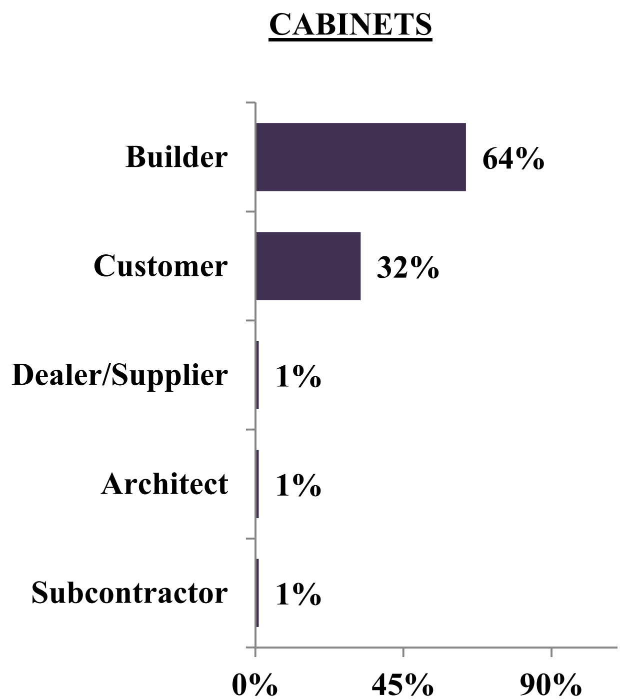


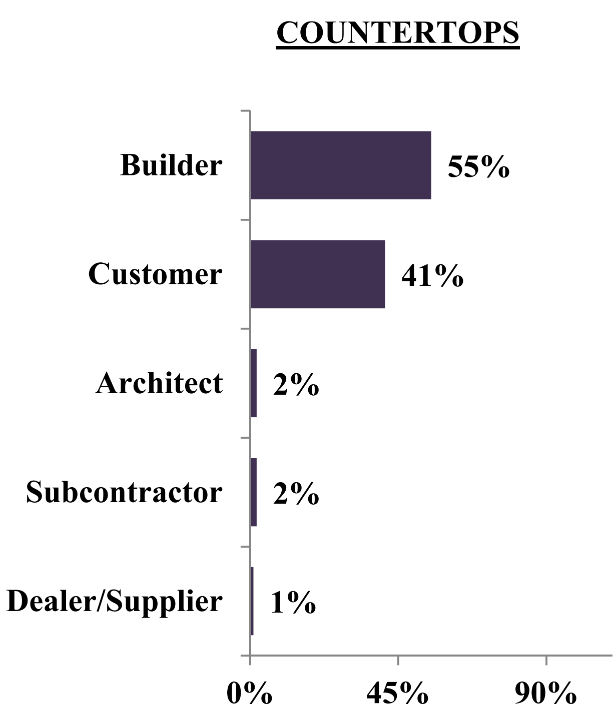
GYPSUM WALLBOARD

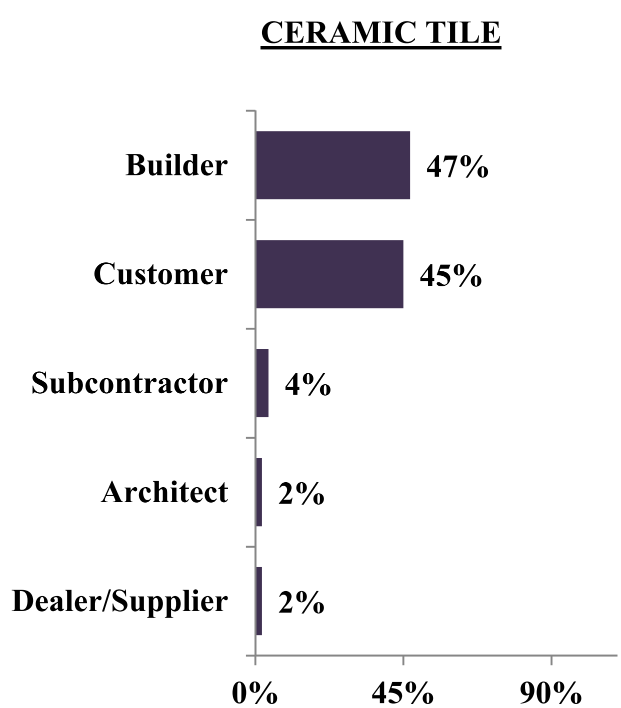


Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) - *continued*



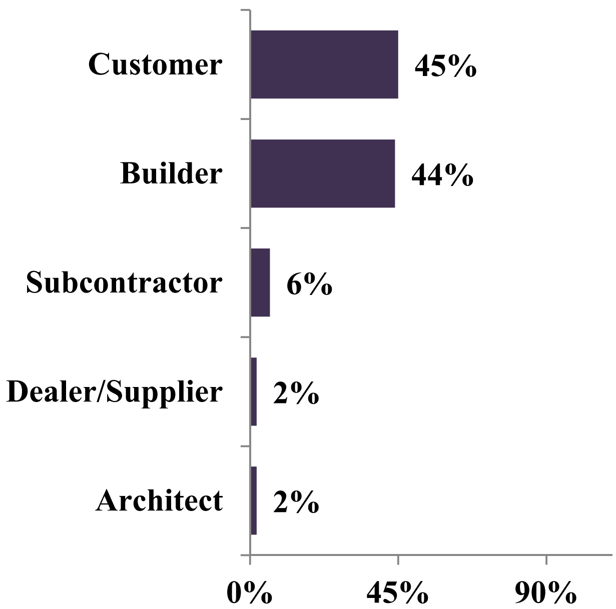




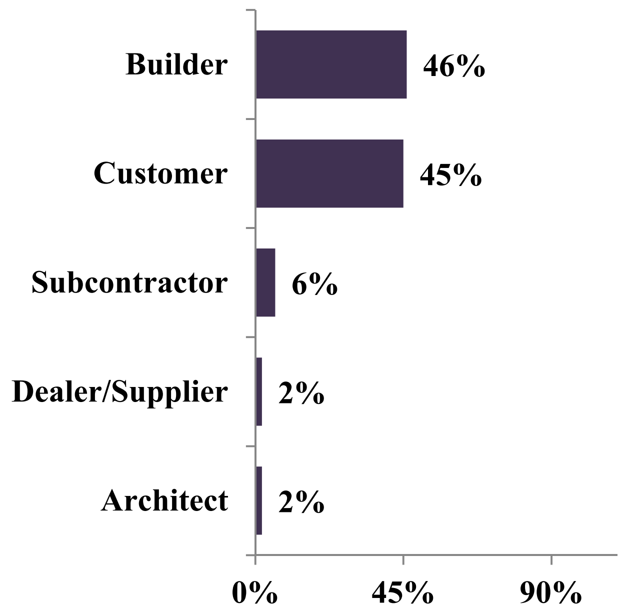


Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) - *continued*

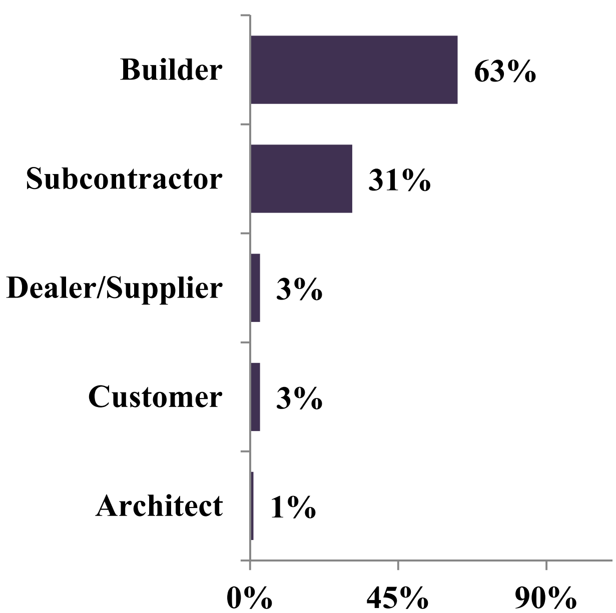
CARPETING



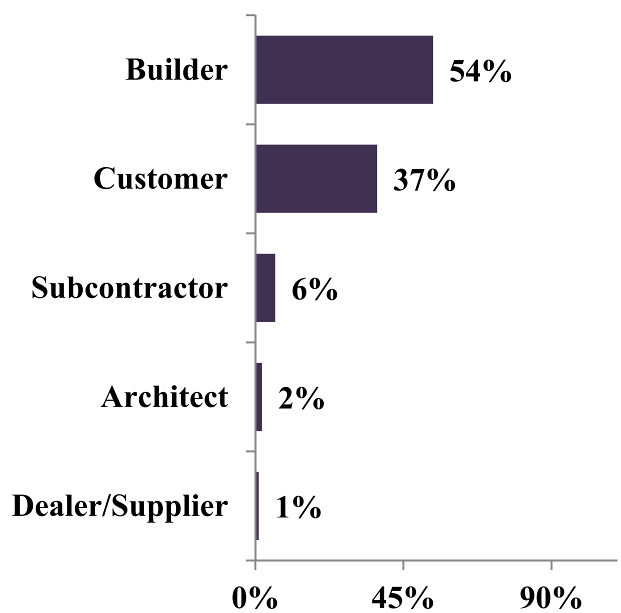
OTHER FLOORING



HAVAC EQUIPMENT& DUCTS

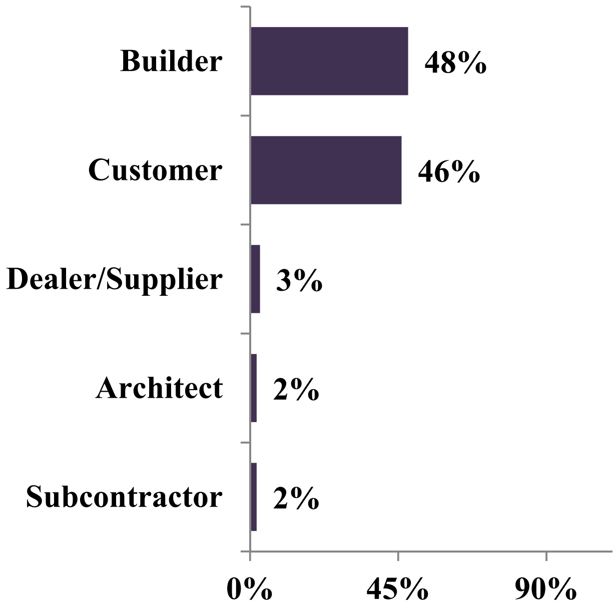


PLUMBING FIXTURES

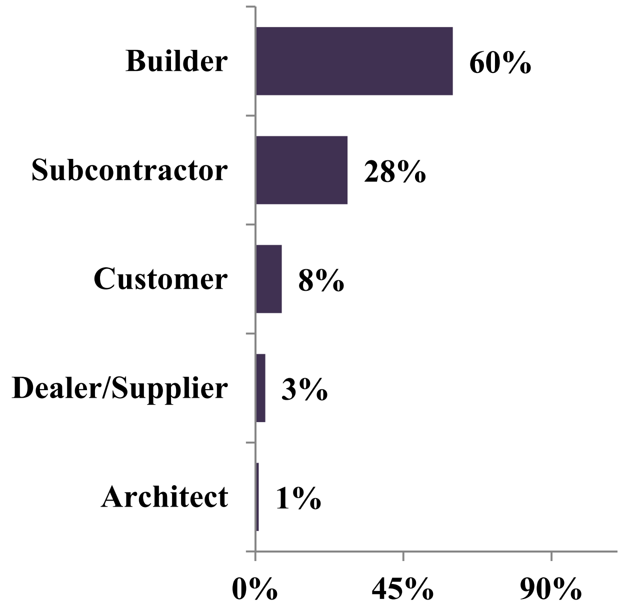


Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) - *continued*

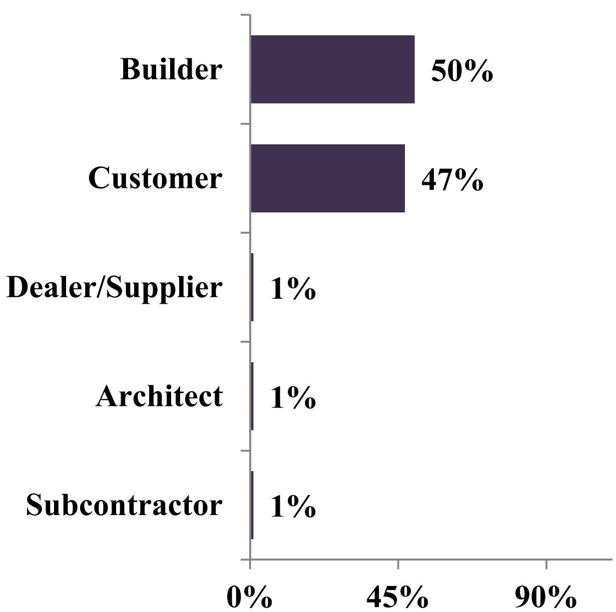
LIGHTING



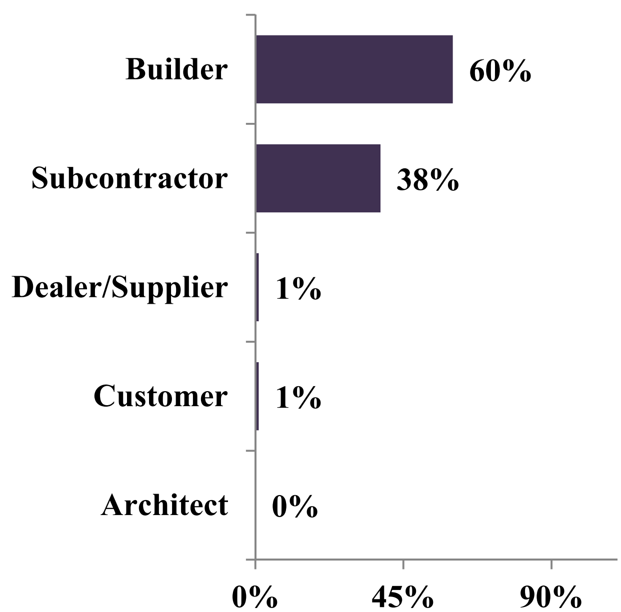
ELECTRICAL



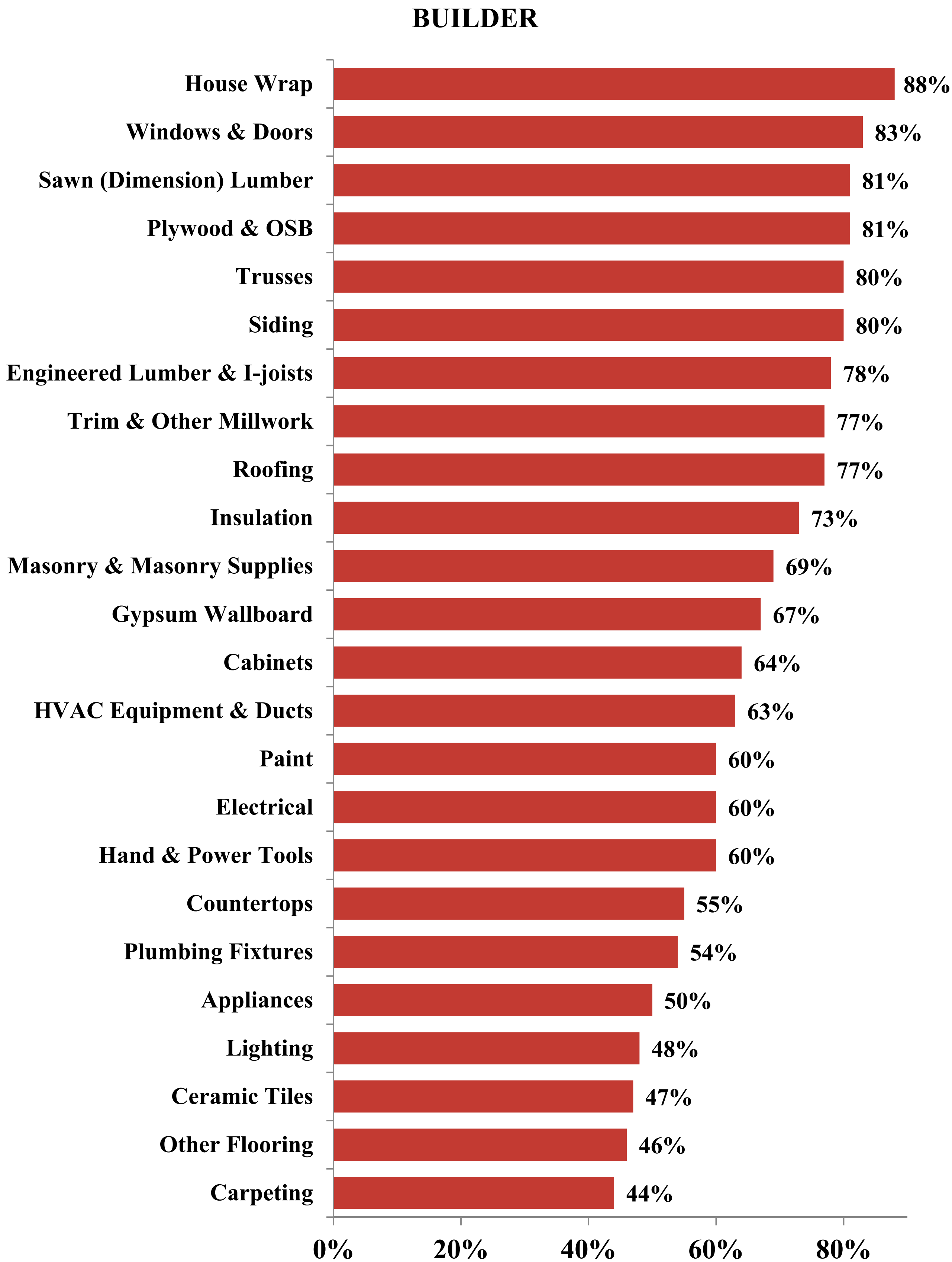
APPLIANCES



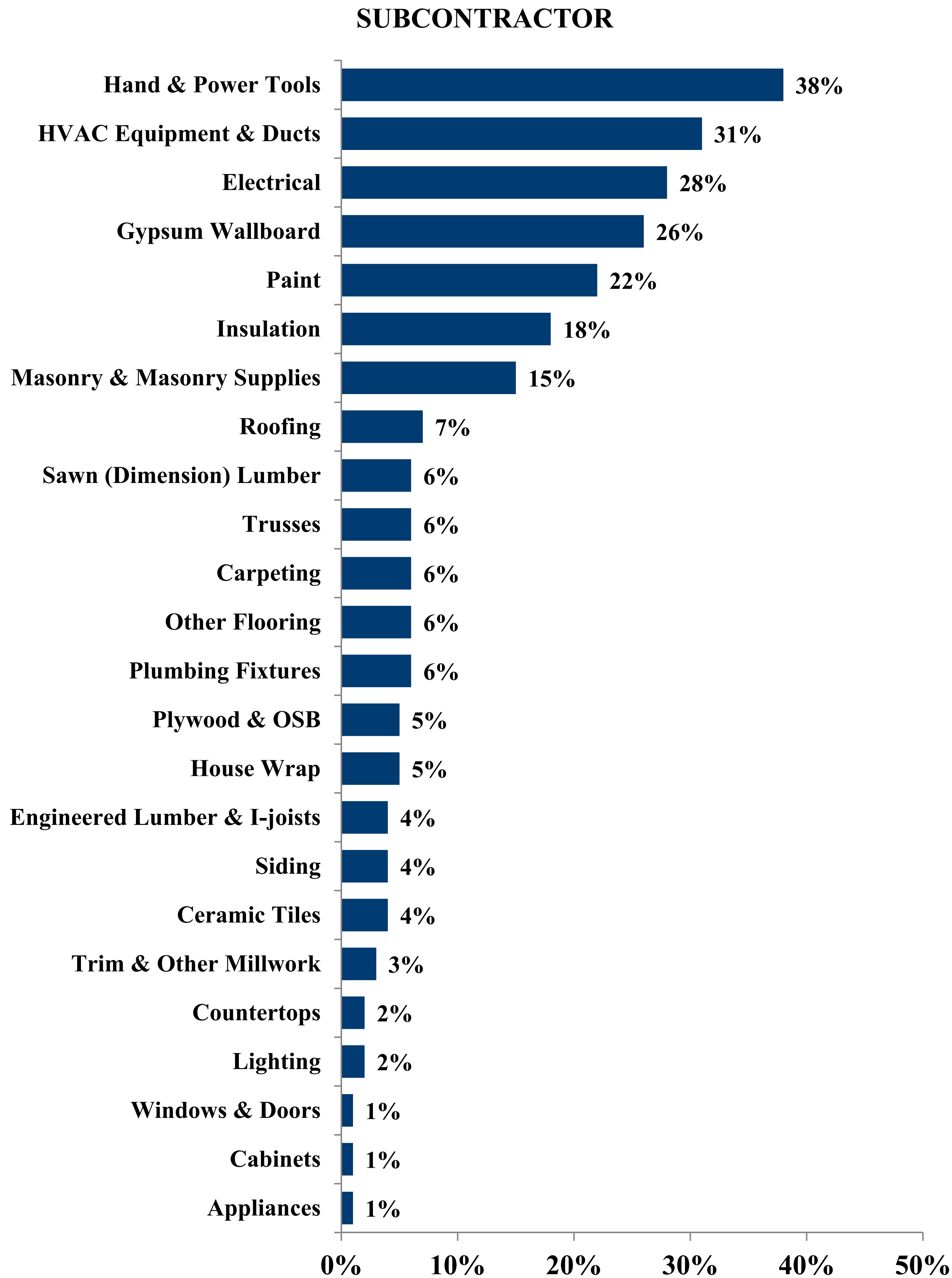
HAND & POWER TOOLS



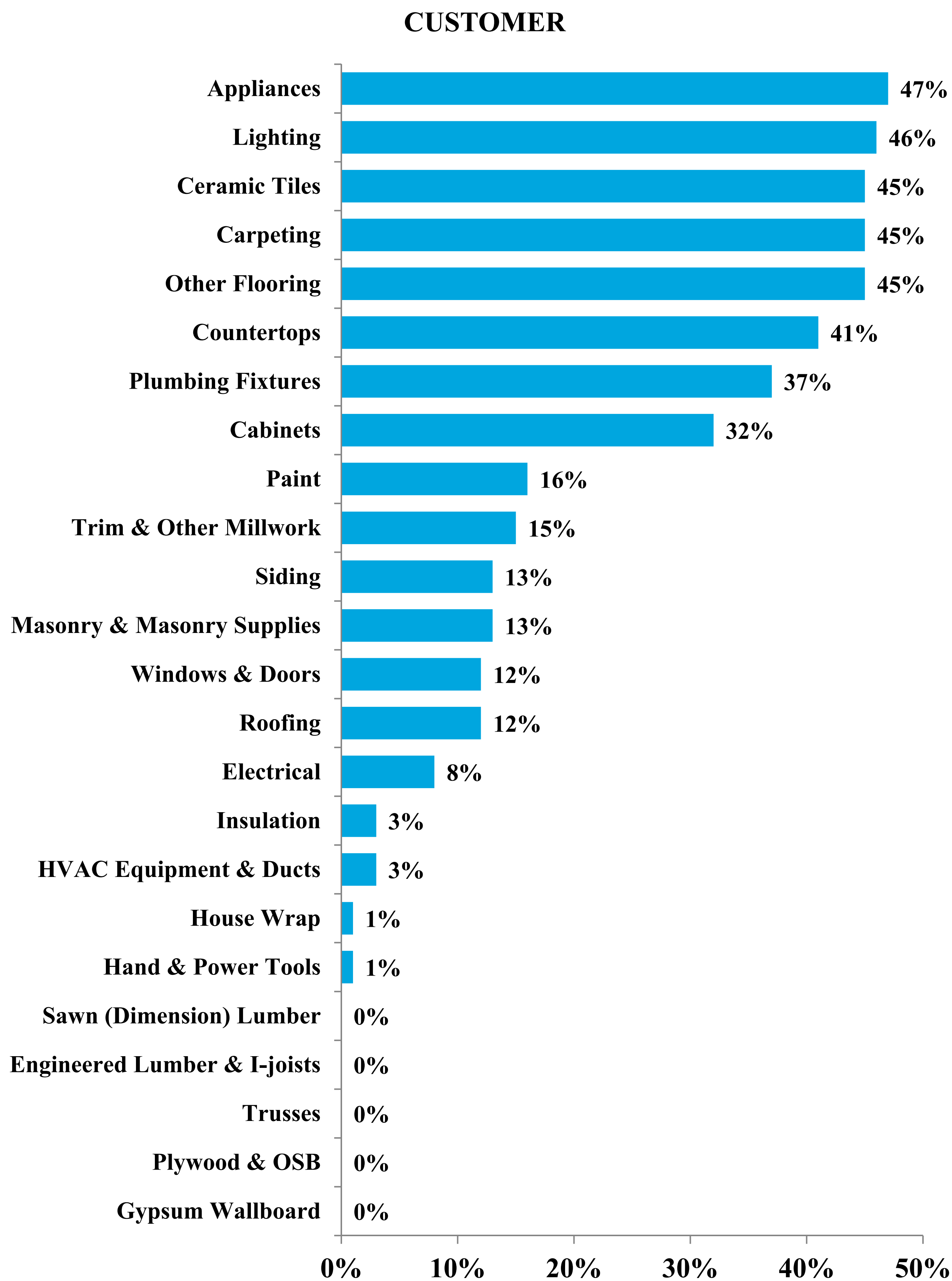
Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*



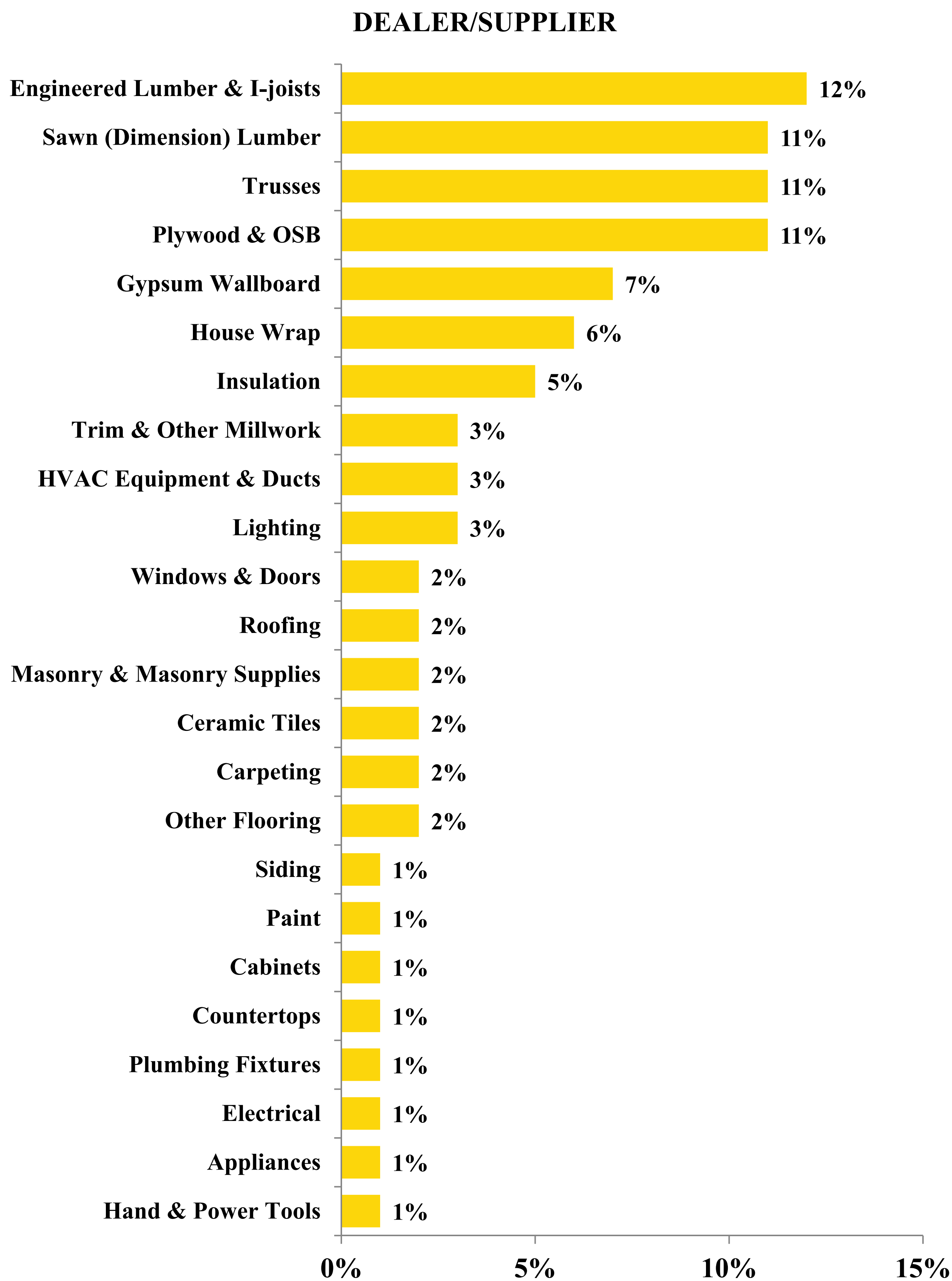
Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*



Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*



Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*



Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents)

		Builder	Subcontractor	Customer	Architect	Dealer or Supplier
1	Sawn (Dimension) Lumber	81%	6%	0%	2%	11%
2	Engineered Lumber & I-joists	78%	4%	0%	6%	12%
3	Trusses	80%	6%	0%	4%	11%
4	Plywood & OSB	81%	5%	0%	2%	11%
5	Windows & Doors	83%	1%	12%	3%	2%
6	Trim & Other Millwork	77%	3%	15%	3%	3%
7	Roofing	77%	7%	12%	2%	2%
8	Siding	80%	4%	13%	2%	1%
9	Masonry & Masonry Supplies	69%	15%	13%	1%	2%
10	House Wrap	88%	5%	1%	1%	6%
11	Insulation	73%	18%	3%	1%	5%
12	Gypsum Wallboard	67%	26%	0%	0%	7%
13	Paint	60%	22%	16%	1%	1%
14	Cabinets	64%	1%	32%	1%	1%
15	Countertops	55%	2%	41%	2%	1%
16	Ceramic Tile	47%	4%	45%	2%	2%
17	Carpeting	44%	6%	45%	2%	2%
18	Other Flooring	46%	6%	45%	2%	2%
19	HVAC Equipment & Ducts	63%	31%	3%	1%	3%
20	Plumbing Fixtures	54%	6%	37%	2%	1%
21	Lighting	48%	2%	46%	2%	3%
22	Electrical	60%	28%	8%	1%	1%
23	Appliances	50%	1%	47%	1%	1%
24	Hand & Power Tools	60%	38%	1%	0%	1%

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? - HISTORY (Percent of Respondents) – *continued*

	Builder			Subcontractor			Customer			Architect			Dealer or Supplier		
	Feb. 2020	*Nov. 2015*	*Oct. 2012*	*Feb. 2020*	*Nov. 2015*	*Oct. 2012*	*Feb. 2020*	*Nov. 2015*	*Oct. 2012*	*Feb. 2020*	*Nov. 2015*	*Oct. 2012*	*Feb. 2020*	*Nov. 2015*	*Oct. 2012*
Sawn (Dimension) Lumber	81%	83	84	6%	6	8	0%	1	1	2%	2	1	11%	8	6
Engineered Lumber & I-joists	78%	80	84	4%	4	8	0%	0	0	6%	5	3	12%	10	5
Trusses	80%	81	85	6%	4	6	0%	0	0	4%	5	2	11%	10	7
Plywood & OSB	81%	84	83	5%	5	8	0%	0	0	2%	1	1	11%	10	7
Windows & Doors	83%	82	84	1%	1	1	12%	12	11	3%	1	2	2%	4	2
Trim & Other Millwork	77%	79	82	3%	4	6	15%	10	6	3%	1	1	3%	5	5
Roofing	77%	73	74	7%	11	13	12%	10	10	2%	1	1	2%	5	3
Siding	80%	80	77	4%	7	9	13%	9	9	2%	1	1	1%	3	4
Masonry & Masonry Supplies	69%	67	65	15%	21	24	13%	8	6	1%	1	1	2%	3	4
House Wrap	88%	86	86	5%	6	8	1%	1	0	1%	1	0	6%	7	6
Insulation	73%	58	59	18%	32	33	3%	1	3	1%	2	1	5%	7	4
Gypsum Wallboard	67%	51	56	26%	39	38	0%	0	0	0%	1	0	7%	9	6
Paint	60%	50	53	22%	31	31	16%	13	13	1%	1	0	1%	5	3
Cabinets	64%	69	69	1%	3	4	32%	23	25	1%	1	1	1%	4	2
Countertops	55%	65	62	2%	3	6	41%	28	29	2%	1	1	1%	4	2
Ceramic Tile	47%	54	51	4%	9	12	45%	31	33	2%	1	0	2%	5	3
Carpeting	44%	52	51	6%	9	13	45%	32	33	2%	1	0	2%	6	3
Other Flooring	46%	51	51	6%	11	13	45%	32	32	2%	1	0	2%	6	3
HVAC Equipment & Ducts	63%	46	51	31%	46	43	3%	1	2	1%	1	1	3%	6	3
Plumbing Fixtures	54%	53	48	6%	18	24	37%	25	25	2%	1	1	1%	3	3
Lighting	48%	55	53	2%	5	7	46%	34	36	2%	1	1	3%	4	3
Electrical	60%	39	42	28%	52	50	8%	3	3	1%	0	1	1%	7	4
Appliances	50%	59	61	1%	1	1	47%	36	37	1%	1	1	1%	3	1
Hand & Power Tools	60%	67	69	38%	28	28	1%	0	1	0%	0	0	1%	5	3

Detailed Tables

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents)

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Sawn (Dimension) Lumber									
Builder	81	83	80	84	71	85	75	81	74
Subcontractor	6		5	4	14	1	7	9	13
Customer	0			1				2	
Architect	2	6	1	2	2	3	3		
Dealer or Supplier	11	11	15	9	13	11	15	8	13
Responses	341	35	88	162	56	102	110	64	31
Engineered Lumber & I-joists									
Builder	78	71	79	82	70	79	78	75	76
Subcontractor	4		2	2	12	2	4	6	9
Customer									
Architect	6	17	2	4	9	5	6	5	6
Dealer or Supplier	12	11	16	11	9	14	13	14	9
Responses	342	35	87	163	57	102	108	64	34
Trusses									
Builder	80	76	78	84	73	79	80	78	79
Subcontractor	6		5	5	13	5	7	5	9
Customer									
Architect	4	12	2	3	4	4	3	3	3
Dealer or Supplier	11	12	15	9	11	11	10	14	9
Responses	323	33	85	149	56	96	100	59	34
Plywood & OSB									
Builder	81	89	82	84	68	85	83	83	65
Subcontractor	5		3	3	16	2	4	6	21
Customer	0			1		1			
Architect	2	3	2	2	4	2	3	2	
Dealer or Supplier	11	9	13	10	12	10	11	9	15
Responses	345	35	88	165	57	103	110	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents) – *continued*

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Windows & Doors									
Builder	83	86	84	82	79	75	81	94	94
Subcontractor	1			1	2	1	1	2	
Customer	12	6	10	13	18	20	11	5	3
Architect	3	6	5	2		2	5		
Dealer or Supplier	2	3	1	2	2	3	2		3
Responses	344	35	88	164	57	102	110	64	34
Trim & Other Millwork									
Builder	77	83	78	76	75	73	76	86	76
Subcontractor	3		1	3	5	2	2	3	9
Customer	15	9	17	15	14	20	14	9	3
Architect	3	3	2	3	2	1	6		3
Dealer or Supplier	3	6	1	4	4	4	3	2	9
Responses	344	35	87	165	57	103	109	64	34
Roofing									
Builder	77	80	84	77	67	76	75	81	91
Subcontractor	7	3	5	7	11	3	7	13	3
Customer	12	11	7	13	18	17	12	6	3
Architect	2	3	2	2	4	2	5		
Dealer or Supplier	2	3	2	1	2	3	1		3
Responses	345	35	88	165	57	103	110	64	34
Siding									
Builder	80	77	80	82	77	72	81	90	79
Subcontractor	4		5	4	4	3	1	2	15
Customer	13	17	14	11	17	20	15	8	3
Architect	2	3	1	2	2	2	4		
Dealer or Supplier	1	3	1	1		2			3
Responses	338	35	88	163	52	98	110	62	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Masonry & Masonry Supplies									
Builder	69	73	64	75	59	66	69	77	79
Subcontractor	15	18	13	11	28	15	12	17	15
Customer	13	3	22	11	11	17	15	6	
Architect	1	3	1	1			3		
Dealer or Supplier	2	3	1	2	2	2	2		6
Responses	339	33	88	164	54	99	108	64	34
House Wrap									
Builder	88	91	90	91	75	91	90	86	82
Subcontractor	5		2	2	19	1	3	8	12
Customer	1			1	2	2			
Architect	1	3		1				2	
Dealer or Supplier	6	6	7	6	4	5	7	5	6
Responses	332	33	84	162	53	94	109	63	33
Insulation									
Builder	73	66	82	76	58	77	76	67	65
Subcontractor	18	20	11	14	37	12	15	28	26
Customer	3		2	4	4	8	2		3
Architect	1	6		1		1			
Dealer or Supplier	5	9	5	5	2	3	7	5	6
Responses	344	35	88	164	57	103	109	64	34
Gypsum Wallboard									
Builder	67	66	67	73	50	76	65	61	50
Subcontractor	26	29	25	19	45	20	27	31	38
Customer	0			1					
Architect	0				2				3
Dealer or Supplier	7	6	8	7	4	4	8	8	9
Responses	344	35	88	165	56	102	110	64	34
Paint									
Builder	60	60	53	62	64	58	57	63	82
Subcontractor	22	17	25	19	31	17	28	25	12
Customer	16	17	19	17	5	23	12	11	6
Architect	1	3		2		1	2		
Dealer or Supplier	1	3	2	1		2	1	2	
Responses	343	35	88	165	55	102	110	64	33

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Cabinets									
Builder	64	57	55	65	75	47	70	77	85
Subcontractor	1		1	2		2	2		3
Customer	32	34	44	29	23	48	24	23	12
Architect	1	3		2		1	2		
Dealer or Supplier	1	6		1	2	2	3		
Responses	343	35	87	165	56	102	109	64	34
Countertops									
Builder	55	49	45	59	61	36	57	72	85
Subcontractor	2	3	1	1	4	1	2	3	3
Customer	41	43	52	36	34	60	36	25	12
Architect	2	3	1	2	2	1	5		
Dealer or Supplier	1	3		1		2			
Responses	344	35	88	165	56	102	110	64	34
Ceramic Tile									
Builder	47	40	33	52	58	30	50	58	85
Subcontractor	4	6	5	5	2	2	4	10	6
Customer	45	46	60	38	38	64	40	29	9
Architect	2	3	1	2	2	1	5		
Dealer or Supplier	2	6	1	2		3	1	3	
Responses	341	35	87	164	55	102	109	62	34
Carpeting									
Builder	44	43	32	48	54	27	47	55	88
Subcontractor	6	6	6	8	4	2	6	14	6
Customer	45	43	60	39	39	67	41	28	6
Architect	2	3		3	2	1	4		
Dealer or Supplier	2	6	2	2	2	3	2	3	
Responses	340	35	88	160	57	101	108	64	34
Other Flooring									
Builder	46	46	33	49	56	28	50	58	82
Subcontractor	6	6	5	7	4	2	6	11	6
Customer	45	37	61	40	39	65	40	28	12
Architect	2	6		2	2	2	4		
Dealer or Supplier	2	6	1	2		3	1	3	
Responses	338	35	87	162	54	102	105	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
HVAC Equipment & Ducts									
Builder	63	60	74	63	49	68	56	64	65
Subcontractor	31	34	24	29	44	24	36	36	26
Customer	3	3	1	4	2	5	2		
Architect	1			1	2		1		3
Dealer or Supplier	3	3	1	4	4	3	5		6
Responses	345	35	88	165	57	103	110	64	34
Plumbing Fixtures									
Builder	54	49	42	57	65	38	61	66	79
Subcontractor	6	6	7	7	4	3	4	14	6
Customer	37	40	49	33	28	56	30	20	9
Architect	2	3	1	2	2	1	4		
Dealer or Supplier	1	3	1	1	2	2	1		6
Responses	344	35	88	164	57	103	109	64	34
Lighting									
Builder	48	37	35	53	58	32	48	61	85
Subcontractor	2	3	2	2	2		4	5	3
Customer	46	54	59	39	37	65	40	33	9
Architect	2	3	1	2	2	1	4		
Dealer or Supplier	3	3	2	3	2	2	5	2	3
Responses	345	35	88	165	57	103	110	64	34
Electrical									
Builder	60	49	63	63	55	63	57	56	65
Subcontractor	28	37	24	24	39	21	31	38	26
Customer	8	11	11	7	4	12	7	5	3
Architect	1	3		1		2		2	
Dealer or Supplier	3		2	4	2	2	5		6
Responses	343	35	88	164	56	101	110	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? (Percent of Respondents) – *continued*

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Appliances									
Builder	50	40	38	56	59	30	54	64	85
Subcontractor	1		1	1			1	2	
Customer	47	54	61	40	41	67	43	33	15
Architect	1	3		2		1	2		
Dealer or Supplier	1	3		1		2		2	
Responses	343	35	87	165	56	102	109	64	34
Hand & Power Tools									
Builder	60	73	71	57	46	71	58	52	36
Subcontractor	38	21	28	42	52	26	41	48	61
Customer	1	3		1		1			
Architect									
Dealer or Supplier	1	3	1	1	2	2	1		3
Responses	316	33	78	153	52	98	97	56	33

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents)

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Sawn (Dimension) Lumber									
Builder	80	83	80	82	71	84	75	81	70
Subcontractor	6		5	4	14	1	7	9	12
Customer	0			1				2	
Architect	2	6	1	2	2	3	3		
Dealer or Supplier	11	11	15	8	13	11	15	8	12
NA/Don't Use	1			2		1			6
Responses	344	35	88	165	56	103	110	64	33
Engineered Lumber & I-joists									
Builder	78	71	78	81	70	79	76	75	76
Subcontractor	4		2	2	12	2	4	6	9
Customer									
Architect	6	17	2	4	9	5	5	5	6
Dealer or Supplier	12	11	16	11	9	14	13	14	9
NA/Don't Use	1		1	1		1	2		
Responses	345	35	88	165	57	103	110	64	34
Trusses									
Builder	75	74	75	76	73	75	74	72	79
Subcontractor	5		5	4	13	5	6	5	9
Customer									
Architect	4	12	2	2	4	4	3	3	3
Dealer or Supplier	11	12	15	8	11	11	9	13	9
NA/Don't Use	6	3	3	9		6	7	8	
Responses	342	34	88	164	56	102	108	64	34
Plywood & OSB									
Builder	81	89	82	84	68	85	83	83	65
Subcontractor	5		3	3	16	2	4	6	21
Customer	0			1		1			
Architect	2	3	2	2	4	2	3	2	
Dealer or Supplier	11	9	13	10	12	10	11	9	15
NA/Don't Use									
Responses	345	35	88	165	57	103	110	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents) - *continued*

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Windows & Doors									
Builder	83	86	84	82	79	75	81	94	94
Subcontractor	1			1	2	1	1	2	
Customer	12	6	10	13	18	20	11	5	3
Architect	3	6	5	2		2	5		
Dealer or Supplier	2	3	1	2	2	3	2		3
NA/Don't Use									
Responses	344	35	88	164	57	102	110	64	34
Trim & Other Millwork									
Builder	77	83	78	76	75	73	76	86	76
Subcontractor	3		1	3	5	2	2	3	9
Customer	15	9	17	15	14	20	14	9	3
Architect	3	3	2	3	2	1	6		3
Dealer or Supplier	3	6	1	4	4	4	3	2	9
NA/Don't Use									
Responses	344	35	87	165	57	103	109	64	34
Roofing									
Builder	77	80	84	77	67	76	75	81	91
Subcontractor	7	3	5	7	11	3	7	13	3
Customer	12	11	7	13	18	17	12	6	3
Architect	2	3	2	2	4	2	5		
Dealer or Supplier	2	3	2	1	2	3	1		3
NA/Don't Use									
Responses	345	35	88	165	57	103	110	64	34
Siding									
Builder	78	77	80	81	70	69	81	88	79
Subcontractor	3		5	4	4	3	1	2	15
Customer	13	17	14	11	16	19	15	8	3
Architect	2	3	1	2	2	2	4		
Dealer or Supplier	1	3	1	1		2			3
NA/Don't Use	2			1	9	5		3	
Responses	345	35	88	165	57	103	110	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents) - *continued*

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Masonry & Masonry Supplies									
Builder	68	69	64	75	56	63	67	77	79
Subcontractor	14	17	13	11	26	15	12	17	15
Customer	13	3	22	11	11	17	15	6	
Architect	1	3	1	1			3		
Dealer or Supplier	2	3	1	2	2	2	2		6
NA/Don't Use	2	6		1	5	4	2		
Responses	345	35	88	165	57	103	110	64	34
House Wrap									
Builder	86	86	87	90	71	86	89	84	79
Subcontractor	4		2	2	18	1	3	8	12
Customer	1			1	2	2			
Architect	1	3		1				2	
Dealer or Supplier	6	6	7	6	4	5	7	5	6
NA/Don't Use	3	6	3	1	5	6	1	2	3
Responses	342	35	87	164	56	100	110	64	34
Insulation									
Builder	73	66	82	76	58	77	76	67	65
Subcontractor	18	20	11	14	37	12	15	28	26
Customer	3		2	4	4	8	2		3
Architect	1	6		1		1			
Dealer or Supplier	5	9	5	5	2	3	7	5	6
NA/Don't Use									
Responses	344	35	88	164	57	103	109	64	34
Gypsum Wallboard									
Builder	67	66	67	73	50	76	65	61	50
Subcontractor	26	29	25	19	45	20	27	31	38
Customer	0			1					
Architect	0				2				3
Dealer or Supplier	7	6	8	7	4	4	8	8	9
NA/Don't Use									
Responses	344	35	88	165	56	102	110	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents) - *continued*

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Paint									
Builder	60	60	53	62	64	58	57	63	82
Subcontractor	22	17	25	19	31	17	28	25	12
Customer	16	17	19	17	5	23	12	11	6
Architect	1	3		2		1	2		
Dealer or Supplier	1	3	2	1		2	1	2	
NA/Don't Use									
Responses	343	35	88	165	55	102	110	64	33
Cabinets									
Builder	63	57	55	65	75	47	69	77	85
Subcontractor	1		1	2		2	2		3
Customer	32	34	43	29	23	48	24	23	12
Architect	1	3		2		1	2		
Dealer or Supplier	1	6		1	2	2	3		
NA/Don't Use	0		1				1		
Responses	344	35	88	165	56	102	110	64	34
Countertops									
Builder	55	49	45	59	61	36	57	72	85
Subcontractor	2	3	1	1	4	1	2	3	3
Customer	41	43	52	36	34	60	36	25	12
Architect	2	3	1	2	2	1	5		
Dealer or Supplier	1	3		1		2			
NA/Don't Use									
Responses	344	35	88	165	56	102	110	64	34
Ceramic Tile									
Builder	47	40	33	52	56	30	50	56	85
Subcontractor	4	6	5	5	2	2	4	9	6
Customer	44	46	59	38	37	63	40	28	9
Architect	2	3	1	2	2	1	5		
Dealer or Supplier	2	6	1	2		3	1	3	
NA/Don't Use	1		1		4	1		3	
Responses	344	35	88	164	57	103	109	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?

(Percent of Respondents) - ***continued***

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Carpeting									
Builder	44	43	32	48	54	26	47	55	88
Subcontractor	6	6	6	8	4	2	6	14	6
Customer	45	43	60	39	39	67	40	28	6
Architect	2	3		2	2	1	4		
Dealer or Supplier	2	6	2	2	2	3	2	3	
NA/Don't Use	1			1		1	1		
Responses	342	35	88	162	57	102	109	64	34
Other Flooring									
Builder	45	46	33	48	55	28	49	58	82
Subcontractor	6	6	5	7	4	2	6	11	6
Customer	45	37	61	40	38	65	39	28	12
Architect	2	6		2	2	2	4		
Dealer or Supplier	2	6	1	2		3	1	3	
NA/Don't Use	1			1	2		2		
Responses	340	35	87	163	55	102	107	64	34
HVAC Equipment & Ducts									
Builder	63	60	74	63	49	68	56	64	65
Subcontractor	31	34	24	29	44	24	36	36	26
Customer	3	3	1	4	2	5	2		
Architect	1			1	2		1		3
Dealer or Supplier	3	3	1	4	4	3	5		6
NA/Don't Use									
Responses	345	35	88	165	57	103	110	64	34
Plumbing									
Builder	54	49	42	57	65	38	61	66	79
Subcontractor	6	6	7	7	4	3	4	14	6
Customer	37	40	49	33	28	56	30	20	9
Architect	2	3	1	2	2	1	4		
Dealer or Supplier	1	3	1	1	2	2	1		6
NA/Don't Use									
Responses	344	35	88	164	57	103	109	64	34

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below?
(Percent of Respondents) - ***continued***

WITH NA/DON'T USE

	Total	Region				Total No. of Units Started in 2019			
		NE	MW	S	W	5 or Fewer	6 to 24	25 to 99	100+
Lighting									
Builder	48	37	35	53	58	32	48	61	85
Subcontractor	2	3	2	2	2		4	5	3
Customer	46	54	59	39	37	65	40	33	9
Architect	2	3	1	2	2	1	4		
Dealer or Supplier	3	3	2	3	2	2	5	2	3
NA/Don't Use									
Responses	345	35	88	165	57	103	110	64	34
Electrical									
Builder	60	49	63	63	55	63	57	56	65
Subcontractor	28	37	24	24	39	21	31	38	26
Customer	8	11	11	7	4	12	7	5	3
Architect	1	3		1		2		2	
Dealer or Supplier	3		2	4	2	2	5		6
NA/Don't Use									
Responses	343	35	88	164	56	101	110	64	34
Appliances									
Builder	50	40	38	56	59	30	54	64	85
Subcontractor	1		1	1			1	2	
Customer	47	54	60	40	41	66	43	33	15
Architect	1	3		2		1	2		
Dealer or Supplier	1	3		1		2		2	
NA/Don't Use	0		1			1			
Responses	344	35	88	165	56	103	109	64	34
Hand & Power Tools									
Builder	56	71	65	53	43	69	52	47	35
Subcontractor	36	21	26	39	48	25	37	44	59
Customer	1	3		1		1			
Architect									
Dealer or Supplier	1	3	1	1	2	2	1		3
NA/Don't Use	6	3	7	6	7	4	9	10	3
Responses	337	34	84	163	56	102	107	62	34

Appendix I: Survey Questionnaire: HMI Special Questions for February 2020

Q4. On your typical construction project, who has the greatest influence on selection of the products listed below? *Check (√) ONLY ONE for each product*.

		Builder	Subcontractor	Customer	Architect	Dealer or Supplier	NA / Don't Use
1	Sawn (Dimension) Lumber	☐	☐	☐	☐	☐	☐
2	Engineered Lumber & I-joists	☐	☐	☐	☐	☐	☐
3	Trusses	☐	☐	☐	☐	☐	☐
4	Plywood & OSB	☐	☐	☐	☐	☐	☐
5	Windows & Doors	☐	☐	☐	☐	☐	☐
6	Trim & Other Millwork	☐	☐	☐	☐	☐	☐
7	Roofing	☐	☐	☐	☐	☐	☐
8	Siding	☐	☐	☐	☐	☐	☐
9	Masonry & Masonry Supplies	☐	☐	☐	☐	☐	☐
10	House Wrap	☐	☐	☐	☐	☐	☐
11	Insulation	☐	☐	☐	☐	☐	☐
12	Gypsum Wallboard	☐	☐	☐	☐	☐	☐
13	Paint	☐	☐	☐	☐	☐	☐
14	Cabinets	☐	☐	☐	☐	☐	☐
15	Countertops	☐	☐	☐	☐	☐	☐
16	Ceramic Tile	☐	☐	☐	☐	☐	☐
17	Carpeting	☐	☐	☐	☐	☐	☐
18	Other Flooring	☐	☐	☐	☐	☐	☐
19	HVAC Equipment & Ducts	☐	☐	☐	☐	☐	☐
20	Plumbing Fixtures	☐	☐	☐	☐	☐	☐
21	Lighting	☐	☐	☐	☐	☐	☐
22	Electrical	☐	☐	☐	☐	☐	☐
23	Appliances	☐	☐	☐	☐	☐	☐
24	Hand & Power Tools	☐	☐	☐	☐	☐	☐

THANK YOU