DOMESTIC MANUFACTURING SHARES OF COMMON ENERGY REMODELING PRODUCTS

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Data analysis by Newport Partners LLC

Domestic Manufacturing Shares of Common Energy Remodeling Products

Description of Methodology and Data

The following data were gathered by using classification systems in two databases: the International Trade Commission's Harmonized Tariff System (HTS) within the U.S. International Trade Commission Dataweb; and the North American Industry Classification System (NAICS) within the 2007 Economic Census. The NAICS database classifies industries and is used to establish the overall production of an industry used in the United States. The HTS database identifies imported amounts of products. Using both databases to establish the imported share of products in an industry, the remaining share of products is produced in the United States.

The focus of this study was on a somewhat broader range of products than just those used in energy remodels, but the percentage should still apply. For example, HTS and NAICS do not distinguish between a code-minimum 13 SEER air conditioner and a 15 or 16 SEER unit that would commonly be used in an upgrade focused on saving energy. Likewise, manufacturers of products such as refrigerators or clothes washers usually have both standard and efficient units. The manufacturing locations will have the same distribution in most cases. However, products that would not usually be used at all in an energy remodel were not included. Vinyl windows, for example, were the only window category included, as the 2009 Buildings Energy Databook indicates that this product is used in the vast majority of window replacements.

In the table below, all domestic manufacturing percentages are included for each product category likely to be used in an energy remodeling job. In cases where a similar product will be used in multiple applications (different insulation applications), that product is repeated in each category.

Remodel Category	Subcategory	% Domestic
Air Sealing	Caulk	**95.7%**
	Spray Foam	**90.4%**
Attic Insulation	Fiberglass and Mineral Wool	**93.7%**
Duct Sealing and Replacement	Caulk (includes duct mastic)	**95.7%**
	Duct Sheet Metal	**99.4%**
Wall Insulation	Fiberglass and Mineral Wool	**93.4%**
	Spray Foam	**90.4%**
	Rigid Foam (Polystyrene)	**95.9%**
Replacement Windows	Vinyl Windows	**98.4%**
Furnaces	Gas furnaces and Other	**94.2%**
A/C and Heat Pump	Air and Ground Source	**82.3%**
Water Heaters	Electric, Gas, Solar (tank and tankless)	**77.9%**
Refrigerators	Household Refrigerators & Parts	**62.3%**
Clothes Washers	Household Clothes Washers & Parts	**76.8%**

Air Sealing

The products included in the air sealing category are caulking compounds and polyurethane-based expanding spray foams. Approximately 96% of caulking compounds in the country are manufactured domestically, while just over 90% of polyurethane-based foams used in construction in the country are manufactured domestically. For the purposes of this study, structural caulking compounds were eliminated. Any polyurethane foam other than foam used in the construction industry was eliminated.

Attic Insulation

Included in this analysis were fiberglass and mineral wool insulations. The overall domestic percentage of fiberglass and mineral wool insulation (classified together in the NAICS database) was almost 94%. It was not possible to identify another common attic insulation product (blown-in cellulose) in either database. However, staff at the Cellulose Industry Manufacturing Association estimated the domestic percentage to be above 95% (www.cellulose.org). The data were not able to independently verify this, however.

Duct Sealing and Replacement

Duct mastic and duct sheet metal materials were the focus of this section of the study. Although duct mastic was not itself classified in either database, it is likely included in the caulking compound classification. Along with the broader caulking industry, just under 96% is the share of domestic manufacturing. As in the air sealing section, structural and load-bearing caulking compounds were not included. For sheet metal, the overall industry was narrowed to sheet metal focused on ventilation and thermal distribution. The domestic share of duct sheet metal production was over 99%.

Wall Insulation

Wall insulation includes the largest variety of products of any category, including fiberglass and mineral wool insulation, rigid foam insulation, spray foam insulation and blown-in insulation. Fiberglass and mineral wool insulation has a domestic production share of over 93% and is most likely to be used in gut rehabs in which the walls are opened up. Rigid foam insulation only included polystyrene-based foams used in the construction industry. Neither database clearly identified polyisocyanurate foam insulation; however, polystyrene-based insulations represent the majority of the industry currently. The domestic production percentage of polystyrene foams was just under 96%. Spray foam insulation, as in the air sealing category, includes construction foams based in polyurethane. Just over 90% is the domestic share of this foam. As mentioned above, blown-in cellulose is estimated at above 95% domestic; however, the data could not confirm this.

Crawl Space Insulation

Crawl space insulation includes all of the insulation categories used in wall insulation except blown-in cellulose. As mentioned above, fiberglass and mineral wool were over 93%

domestic, rigid polystyrene foam insulation was just under 96%, and polyurethane spray foam was just over 90% domestic.

Replacement Windows

As mentioned above, the vast majority of replacement windows (even more so in energy upgrades) are vinyl-framed windows. The domestic percentage for this industry is over 98%. One limit of this data is that in some cases, the databases did not separate window and door frames. Therefore this percentage is the domestic production of windows, doors and thresholds, including frames and profiles.

Furnaces

Although the data did not isolate efficient furnaces, the same percentages should apply, as manufacturers will make a range from code minimum equipment up to high-efficiency furnaces. The heating equipment in this category includes gas furnaces, liquid fuel furnaces and boilers and some solar thermal technology. The domestic percentage of these products was over 94%.

Air Conditioning and Heat Pumps

Air conditioning and heat pumps were not separated as categories because the data often grouped them together, especially in respect to parts. The data included compressing air conditioning and air source heat pumps, evaporative coolers, ground source heat pumps. The overall domestic production share of this industry was just over 82%. As mentioned above, the share of high-efficiency equipment was not identified in the data; however, the percentages should still apply.

Water Heaters

The water heater category included both tank water heaters and tankless water heaters. It included water heaters powered by gas, electricity and solar. As mentioned above, the efficiencies were not identified in the data, but the percentage should still apply. The domestic share was just under 78%.

Refrigerators

The refrigerator category included a variety of household refrigerators and refrigerator parts. As mentioned above, it was not possible using the data available to separate out high-efficiency refrigerators, but the percentages should still apply. The domestic share was just over 62%.

Clothes Washers

Clothes washers included a variety of household washers. However, it was impossible to completely eliminate drying equipment. In cases where drying equipment was specifically identified, it was eliminated. Using the data available, it was not possible to categorize by efficiency, but the percentages should still apply. The domestic share was almost 77%.

CONCLUSIONS

In most cases, the products commonly used in home energy remodeling, as classified above, have domestic shares higher than 90%. More importantly, in all cases except refrigerators (62.3% domestic), the energy remodeling products significantly exceeded the national average for domestic share of all manufactured products used in the United States of 76.5%. This 76.5% includes all manufactured products, not only those used in home remodeling, highlighting the fact that energy remodeling has a stronger economic effect in the United States than other products with higher import percentages.

Major Data Sources:

U.S. International Trade Commission Dataweb

- http://dataweb.usitc.gov/scripts/user_set.asp

U.S. Census Bureau 2007 Economic Census

- Entry Page
  http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ECN&_tabId=ECN1&_submenuId=datasets_4&_lang=en&_ts=246366688395
- Sector 31: Manufacturing
  http://factfinder.census.gov/servlet/EconSectorServlet?caller=dataset&sv_name=*&_SectorId=31&ds_name=EC0700A1&_lang=en&_ts=278693672317

Minor Source:

2009 Building Energy Databook

- http://buildingsdatabook.eere.energy.gov

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