



**Home Innovation**  
RESEARCH LABS

# TRENDS AND OPPORTUNITIES FOR PLASTICS IN HOME CONSTRUCTION & REMODELING

ANTEC 2019

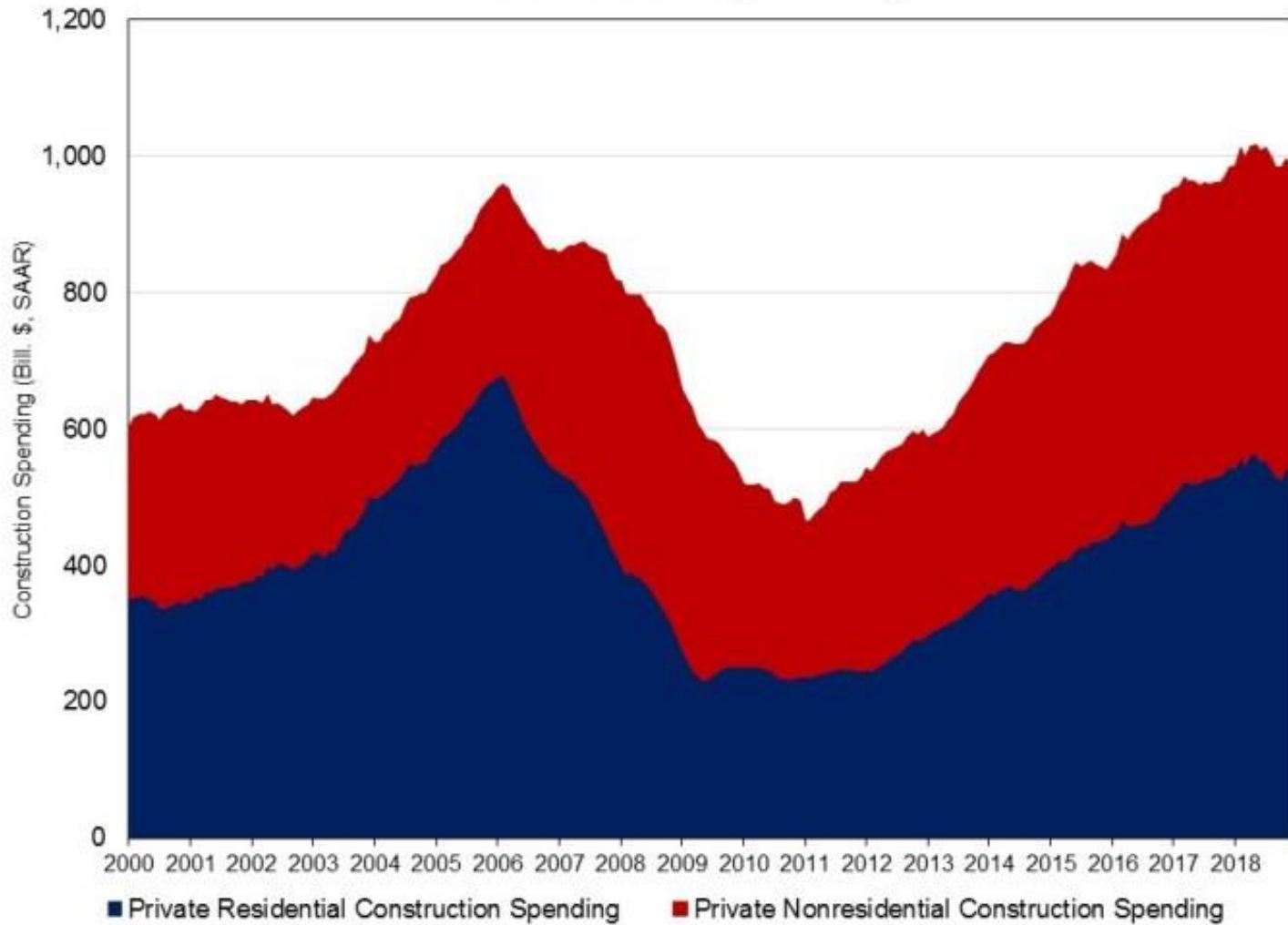
Finding Innovation a Home

# Home Innovation Research Labs

- Founded in 1964 by National Association of Home Builders
- Assist develop and commercialize new building technologies
  - Engineering research & development
  - Market & field research
  - Laboratory testing
- Leader in green home building movement (NGBS)
- Partners with ICC-ES for fast-track of code approvals
- *Annual studies of 100K consumers and 1,500 builders on purchases*



## Construction Spending



Source: NAHB / US Census



# Top Trends Shaping the Building Materials Industry

- Skilled labor shortage
  - Cost of labor also increasing
  - Cycle time lengthened (from 6 months to 7 months to complete a home)
  - Industry environment favors easy to install and pre-finished materials
  - Conditions are right for some off-site housing options
- Construction materials costs increasing
  - Building products up 2 times CPI (4% in 2018)
- Lower availability of residential development property
  - Higher density suburbs (smaller and narrower lots, less privacy etc.)
  - Remodeling outlook very good—improve/expand instead of buy new
- More rigorous energy codes--favors polymer-based insulation
  - Air tightness requirements of homes
  - Higher R-value + continuous insulation on exterior walls
  - HVAC equipment and ducts in interior space
  - Windows—next in line for sweeping upgrades



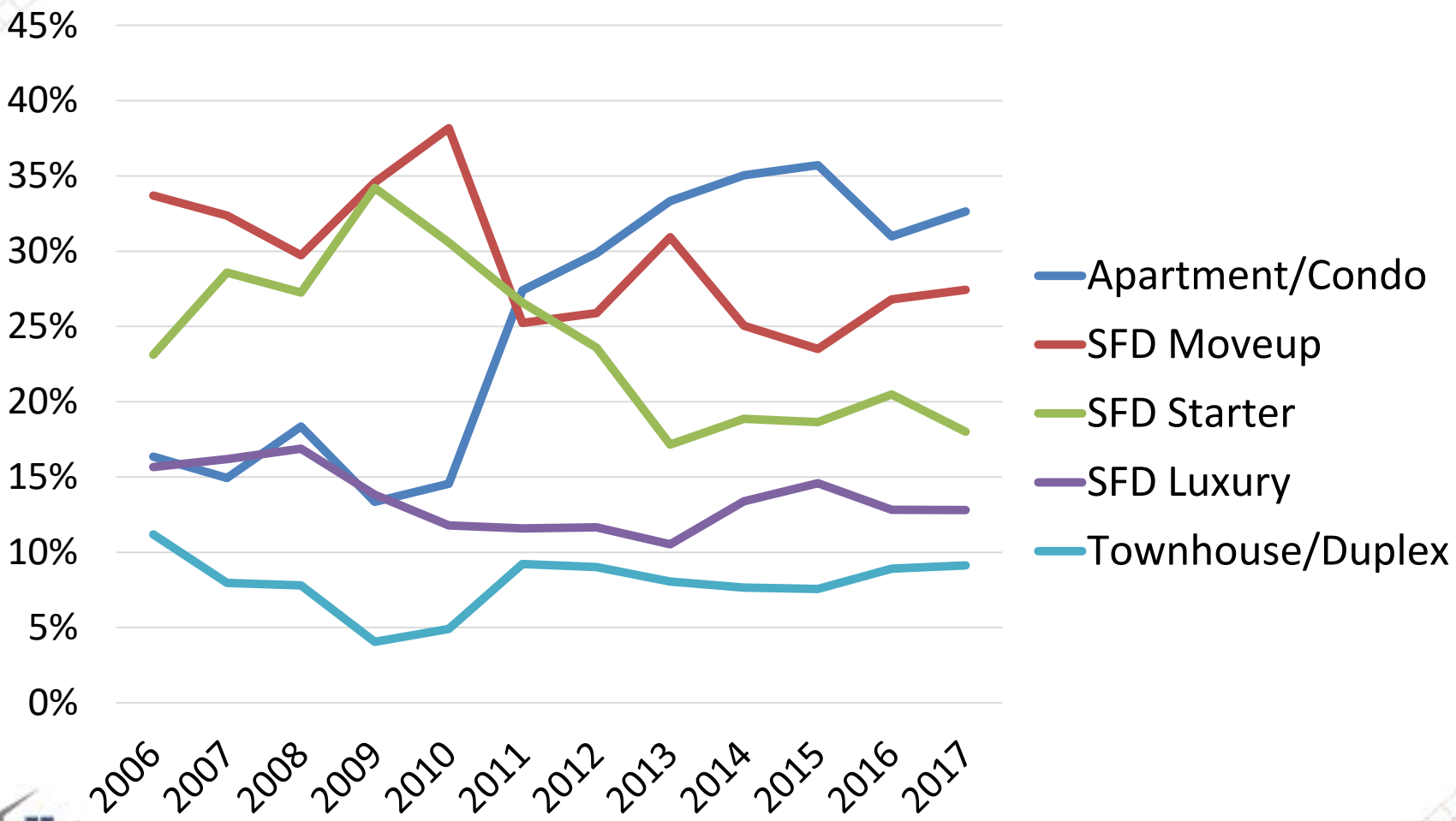
# Trends Shaping the Building Materials Industry

- Demographics
  - Younger home owners/buyers—transitioning from renting
  - Smaller, more affordable single family homes
- More durable products
  - Favoring plastics in many categories on interior & exterior
- Technology improvements
  - Natural look continues to increase in popularity—wood and stone
  - Plastics with decorative + wear layers gaining much ground (flooring, decks, siding, windows, countertops and more)
- Design trends favoring simpler styles (more euro and urban) and contemporary design—primarily interiors but also exteriors
  - Exteriors incorporate lines suggestive of traditional styles
  - Wood, stone, concrete, and steel—with multiple textures on exterior
  - Open floorplans but defined living spaces
- Blurring transition from indoor to outdoor living—window walls or lots of glass, upgraded outdoor living space

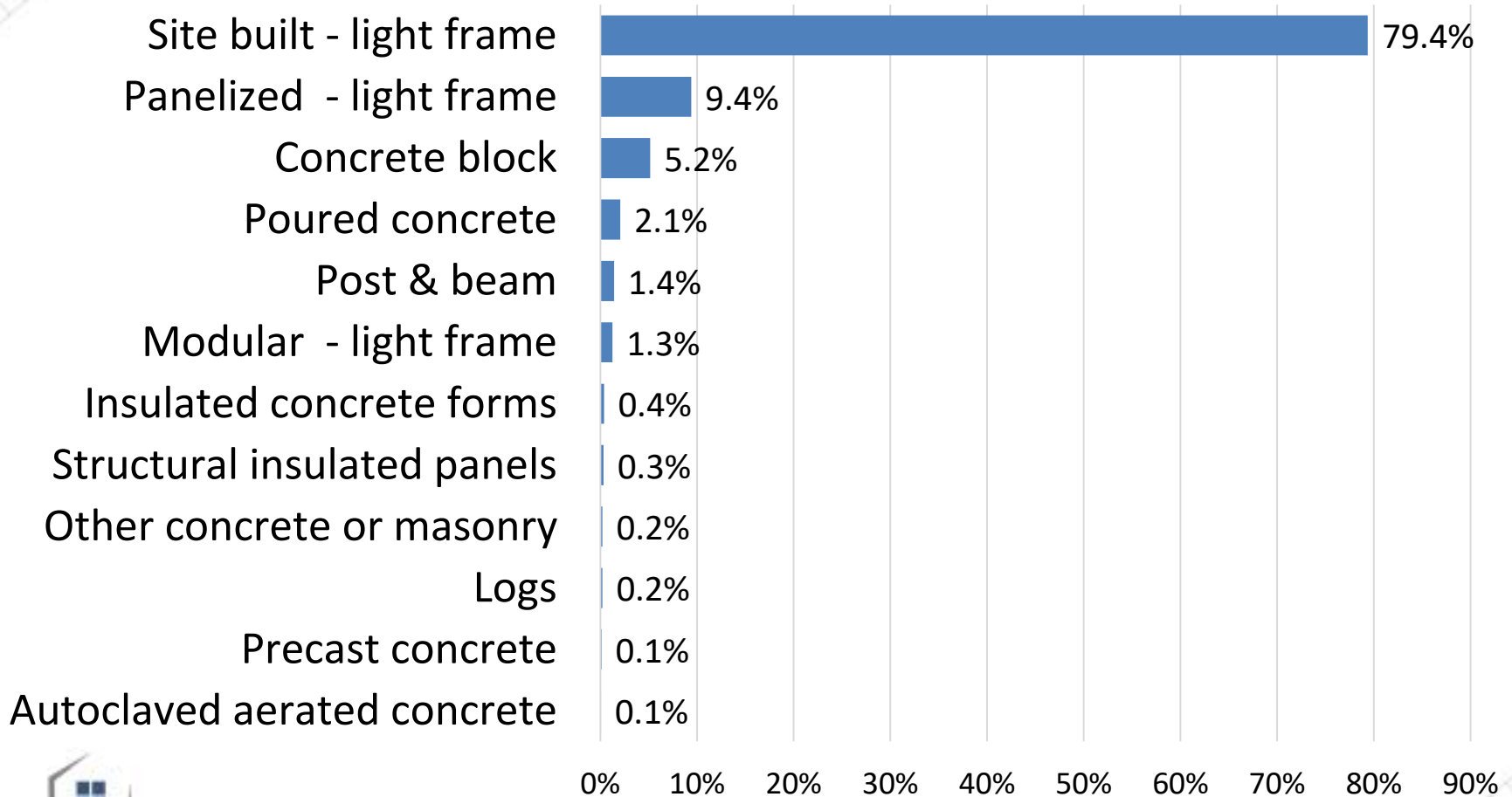


# U.S. New Housing Mix

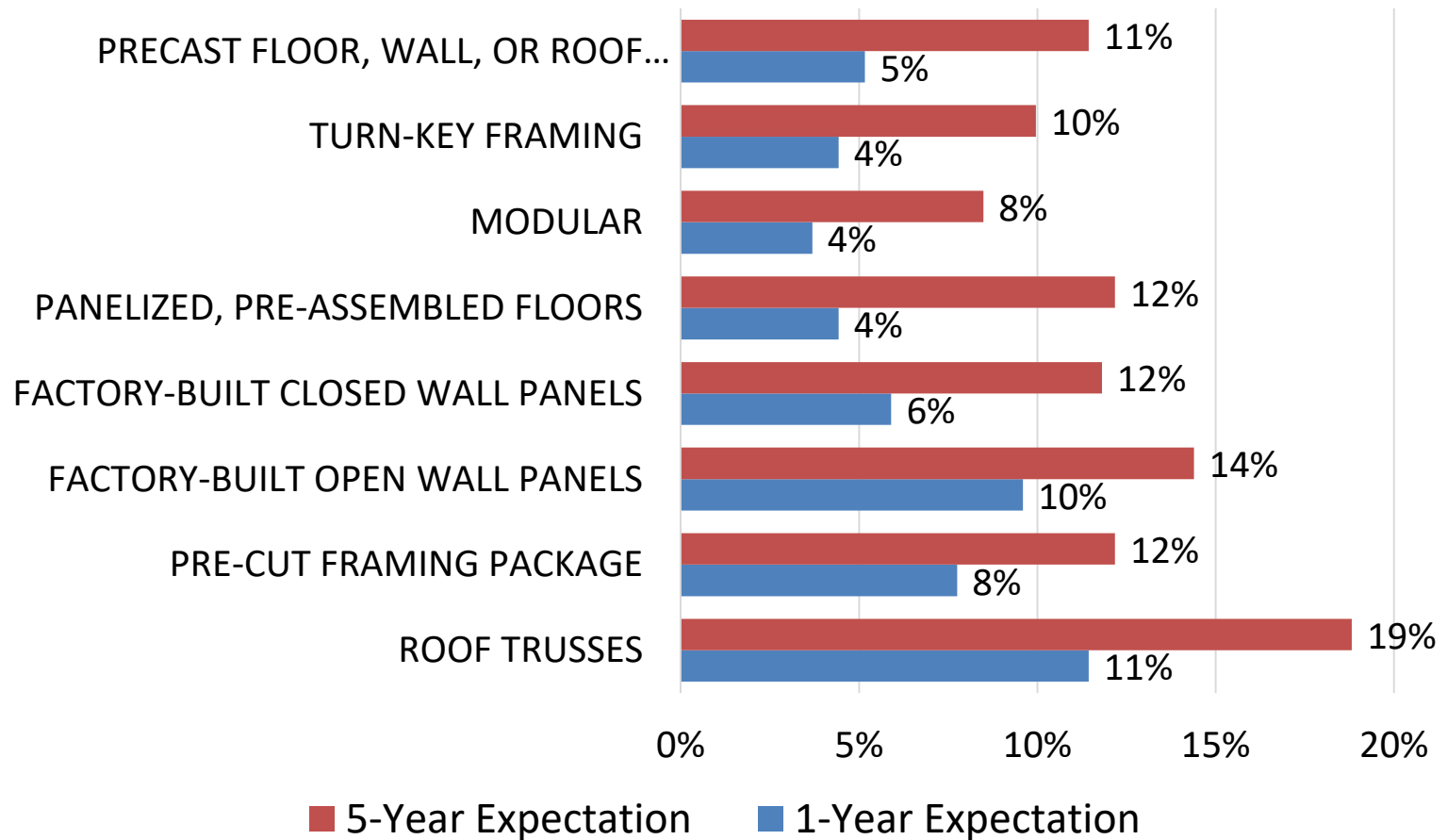
(based on annual starts)



# On-Site and Off-Site: New Home Wall Construction, 2017



# December 2018 Survey: Builders Anticipate More Components & Off-site (n=300)

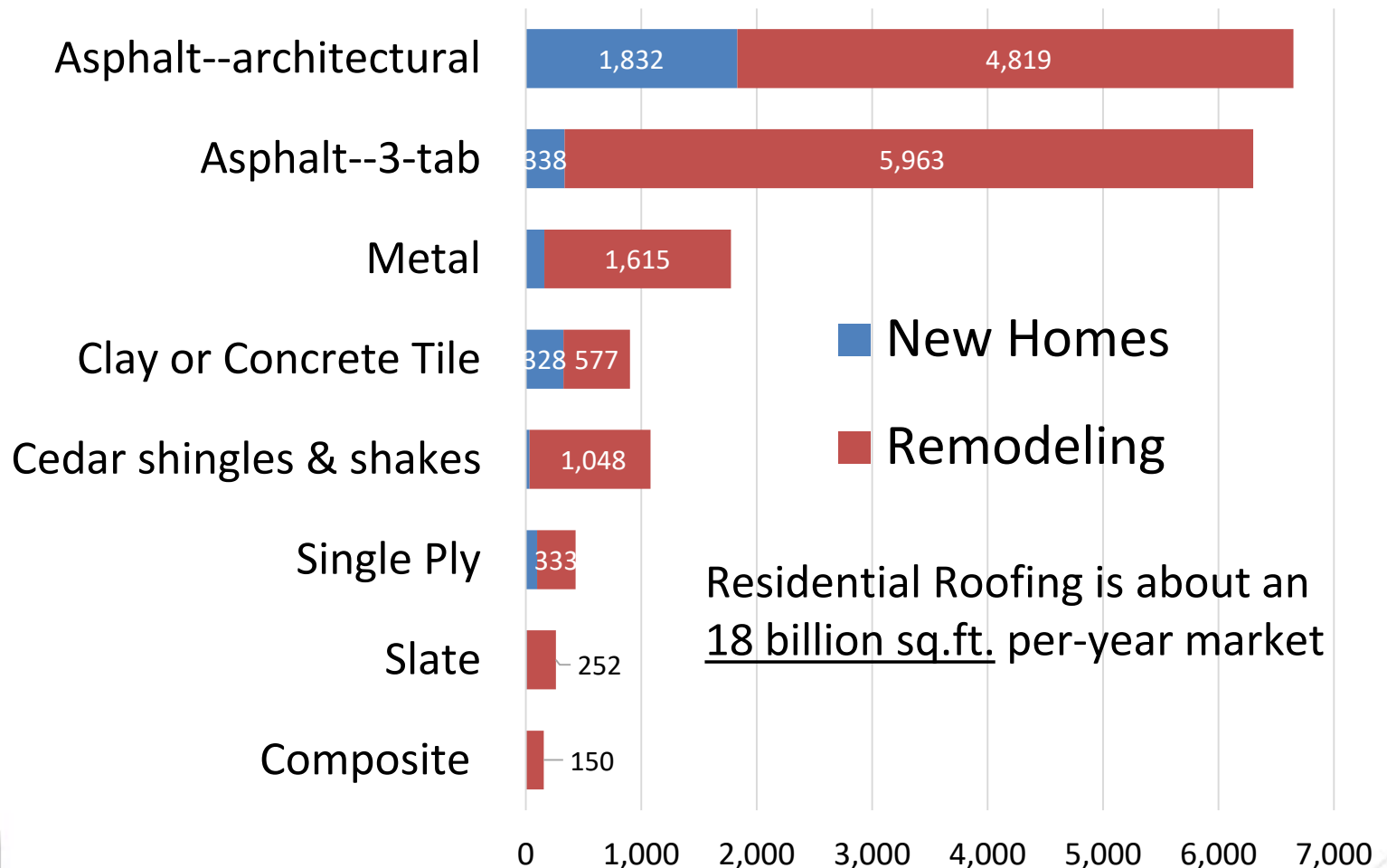


**Question:** CONSIDERING ONLY THE NEW HOMES YOUR COMPANY BUILDS, WHICH OF THE FOLLOWING DO YOU PLAN TO USE LESS OFTEN, ABOUT THE SAME, OR MORE OFTEN IN THE COMING YEAR COMPARED TO LAST YEAR? FIVE YEARS?



# US Residential Roofing: New Homes and Home Remodeling, 2017

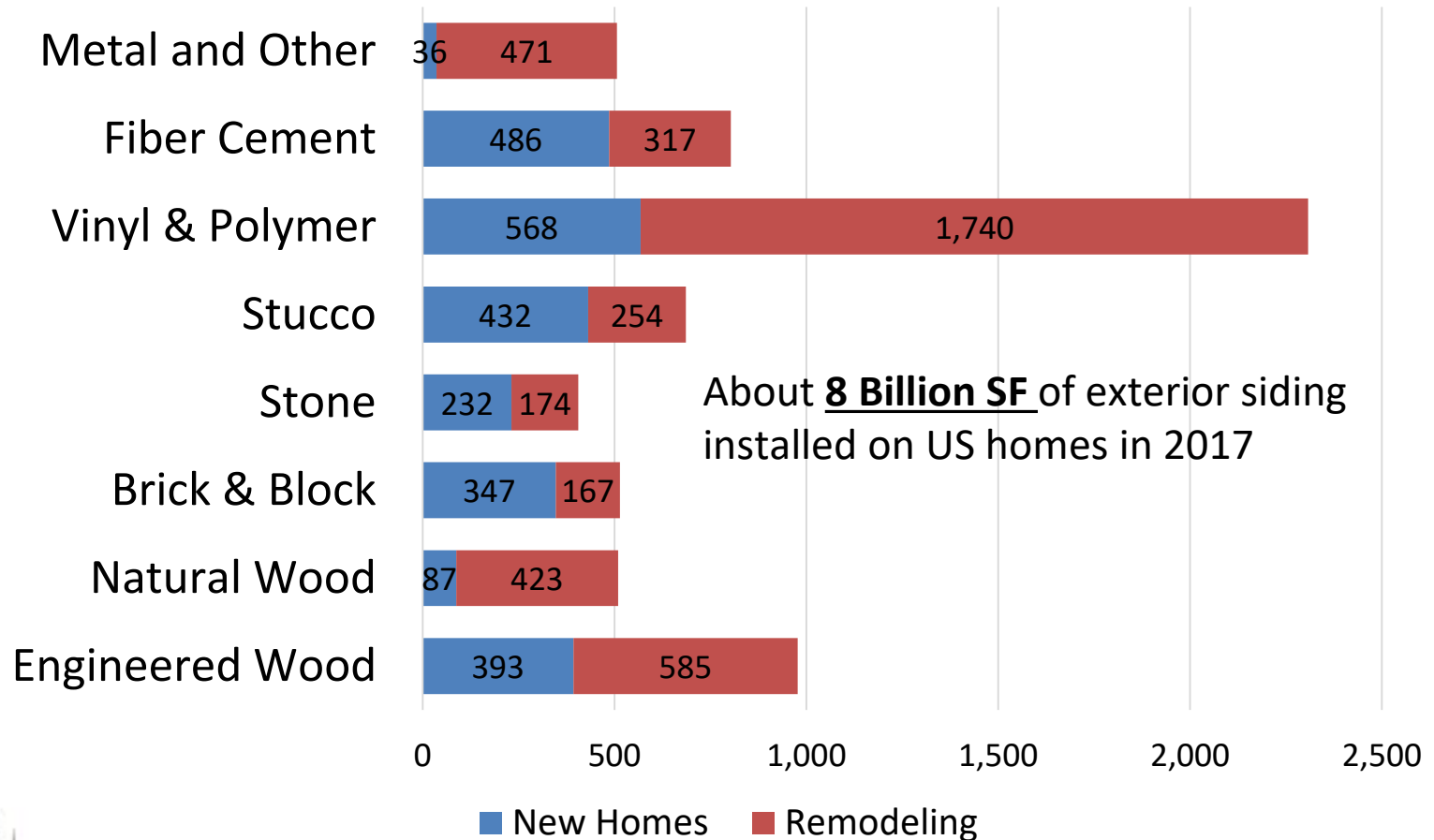
(millions of sf)



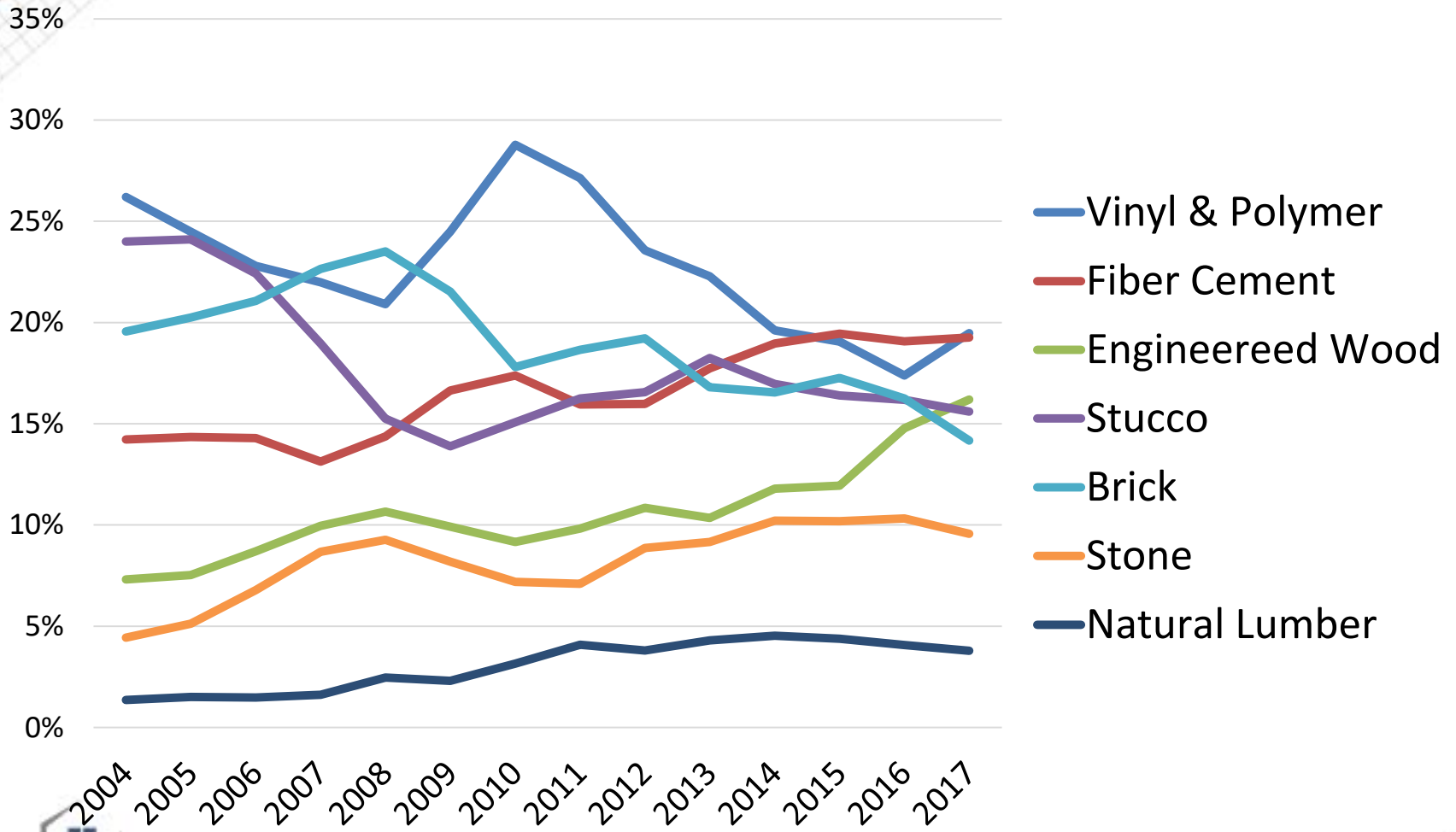
Residential Roofing is about an 18 billion sq.ft. per-year market



# Siding Volumes in US New Homes and Home Remodeling, 2017 (millions of SF)

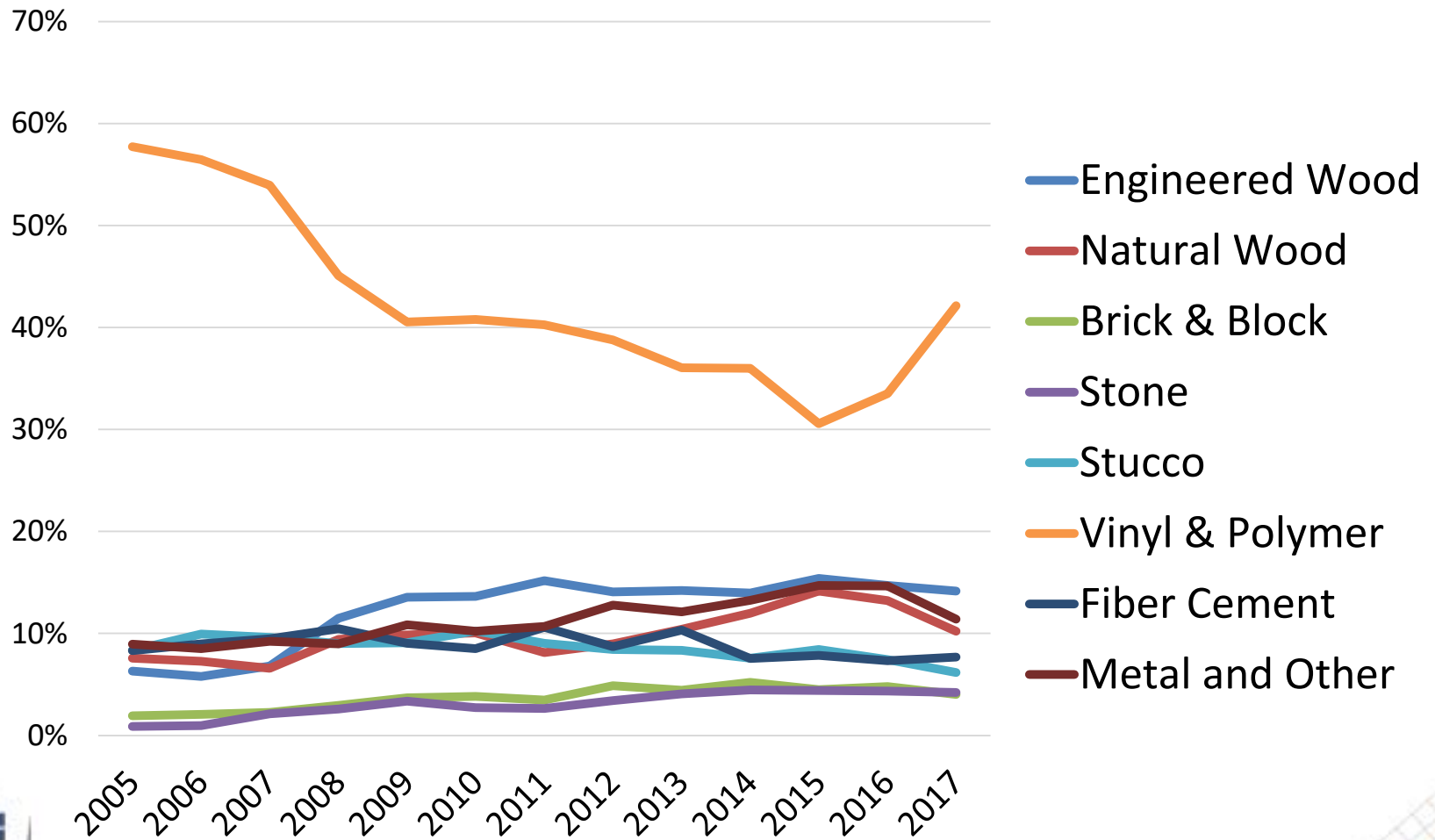


# Siding on New Homes

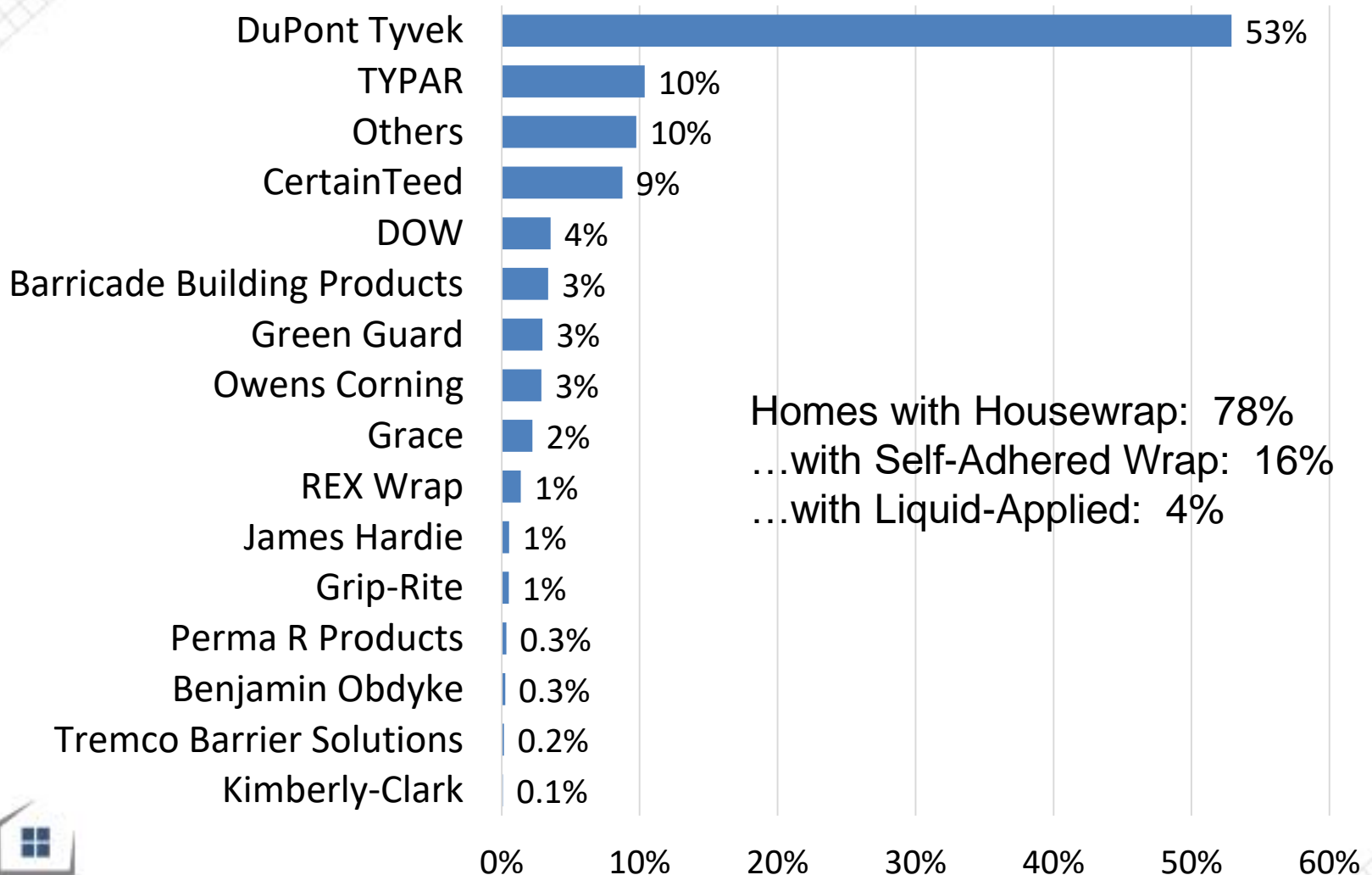


Source: Annual Builder Practices Reports

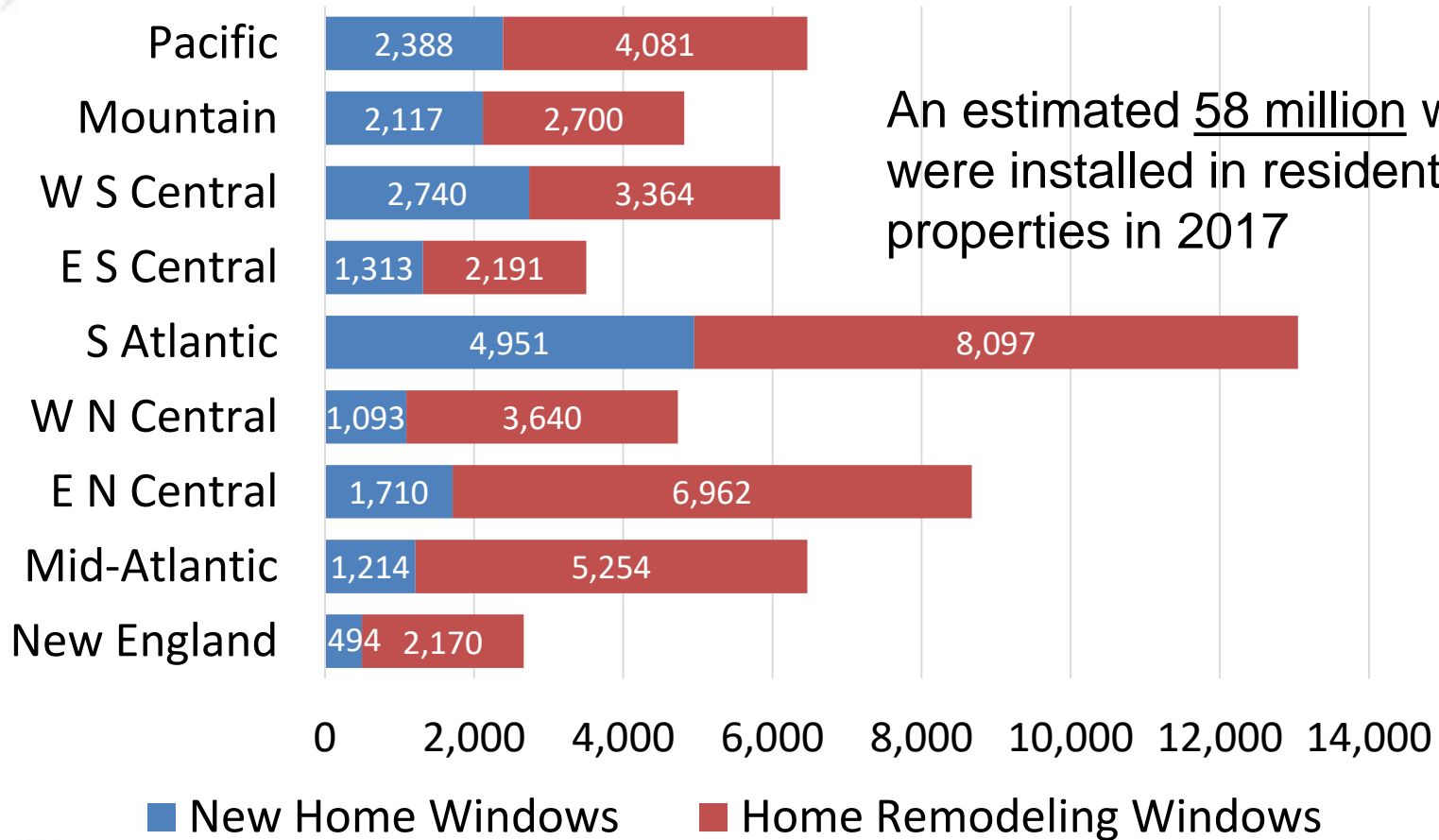
# Siding in Home Remodeling



# Shares of Housewrap, in New SFD Homes, 2017

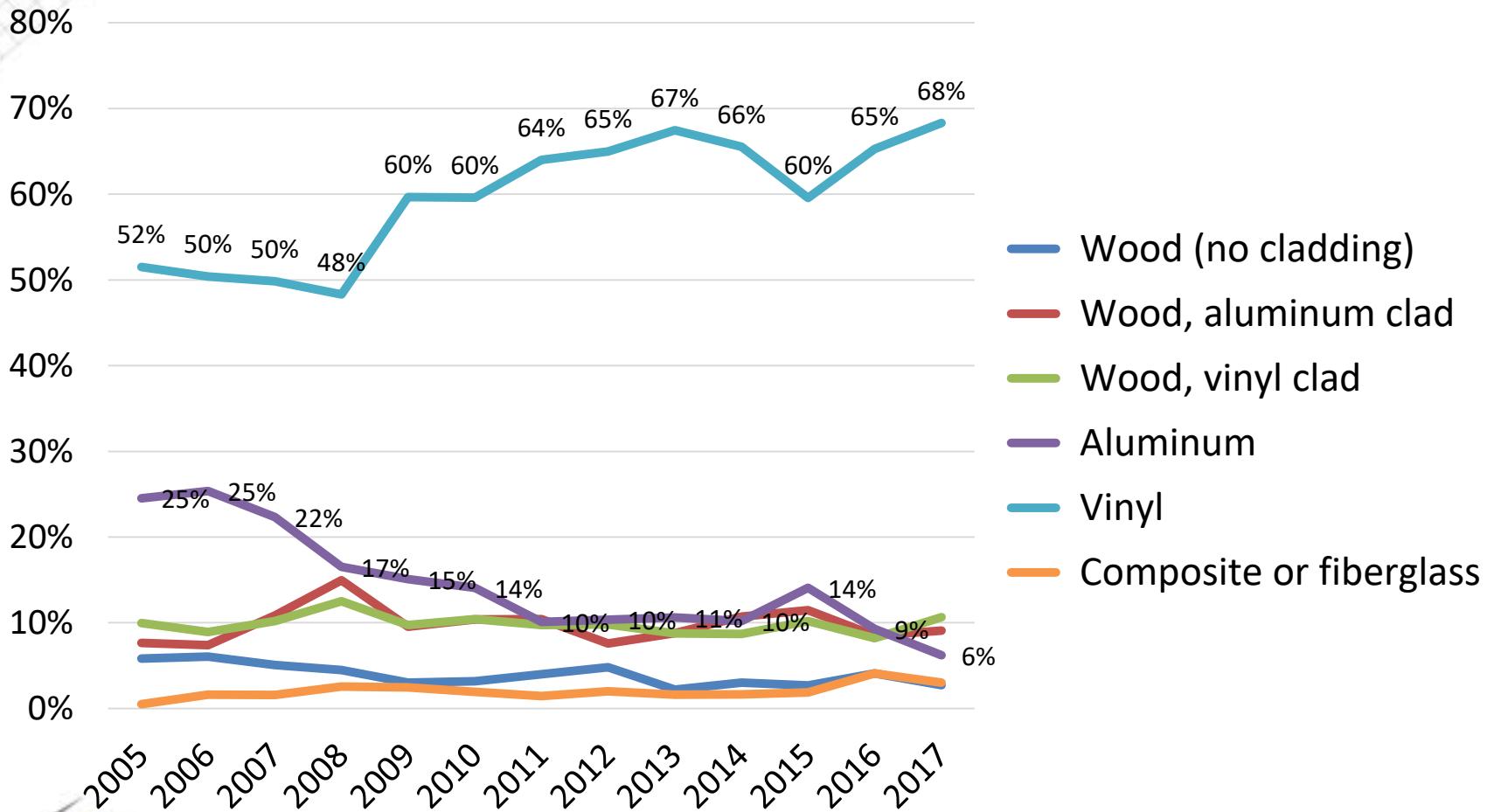


# New Home and Remodeling Window Installations, 2017 (1000's)

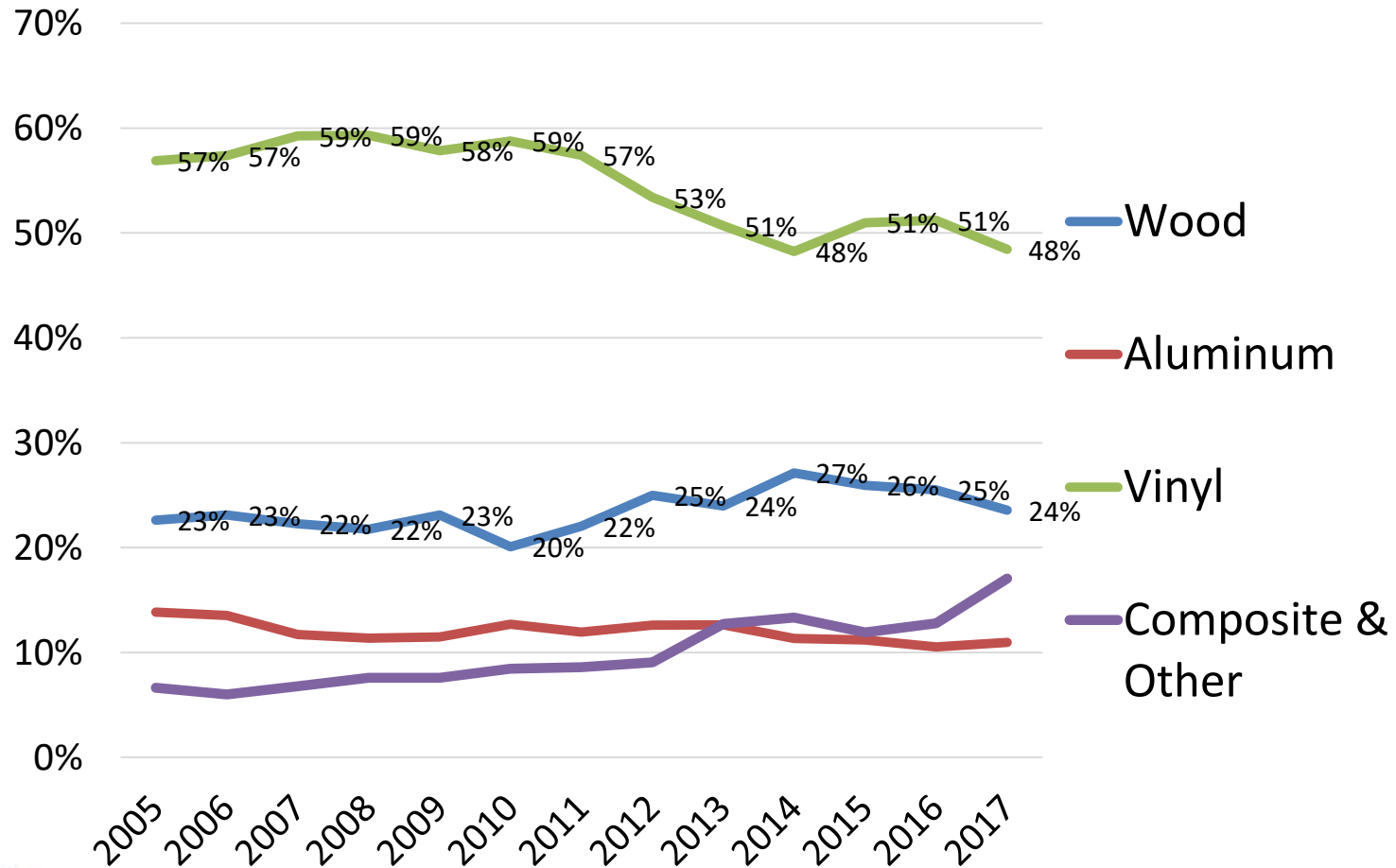


An estimated 58 million windows were installed in residential properties in 2017

# Trends in New SFD Home Window Frame Materials

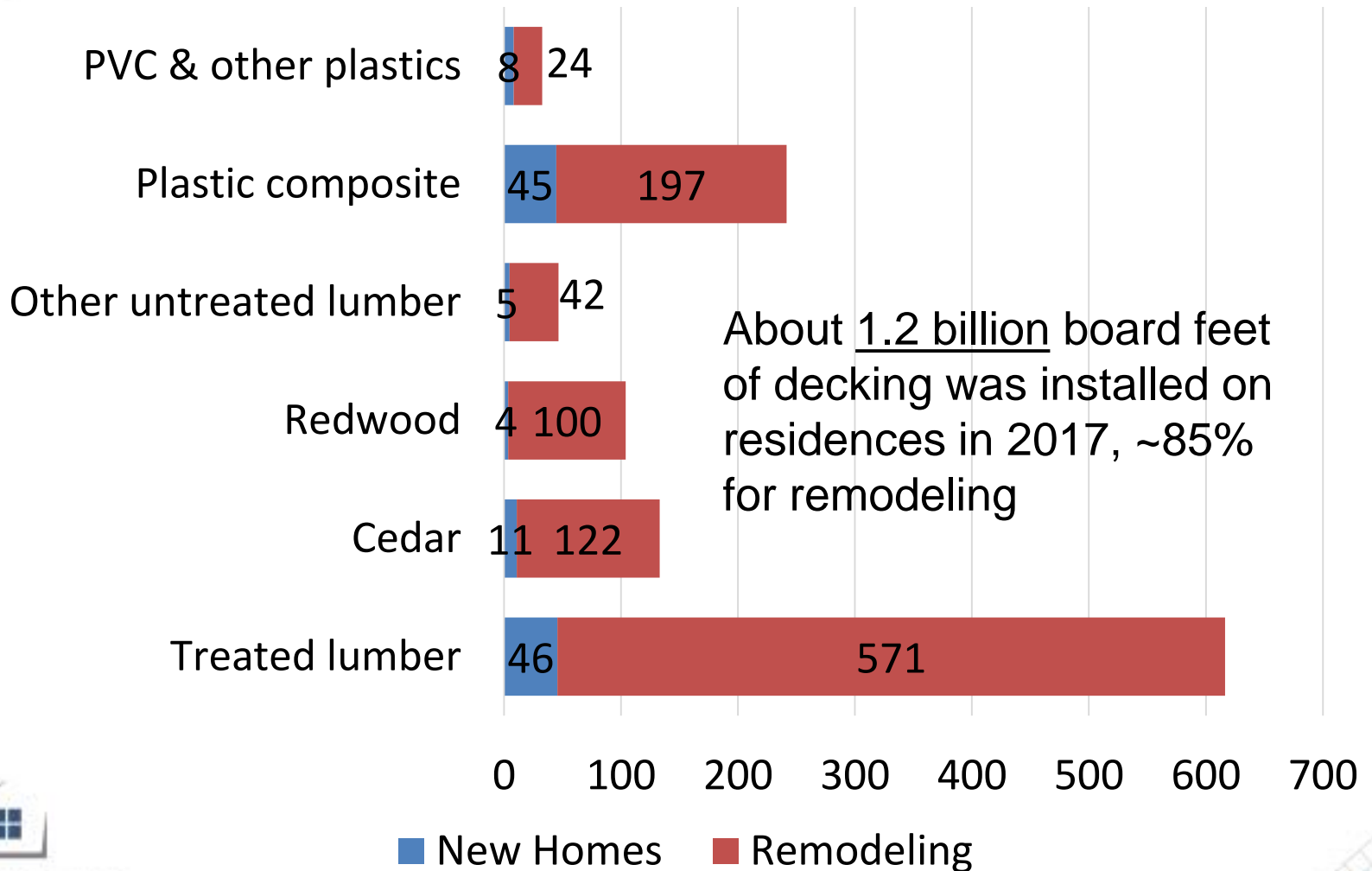


# Trends in Home Remodeling Window Frame Materials

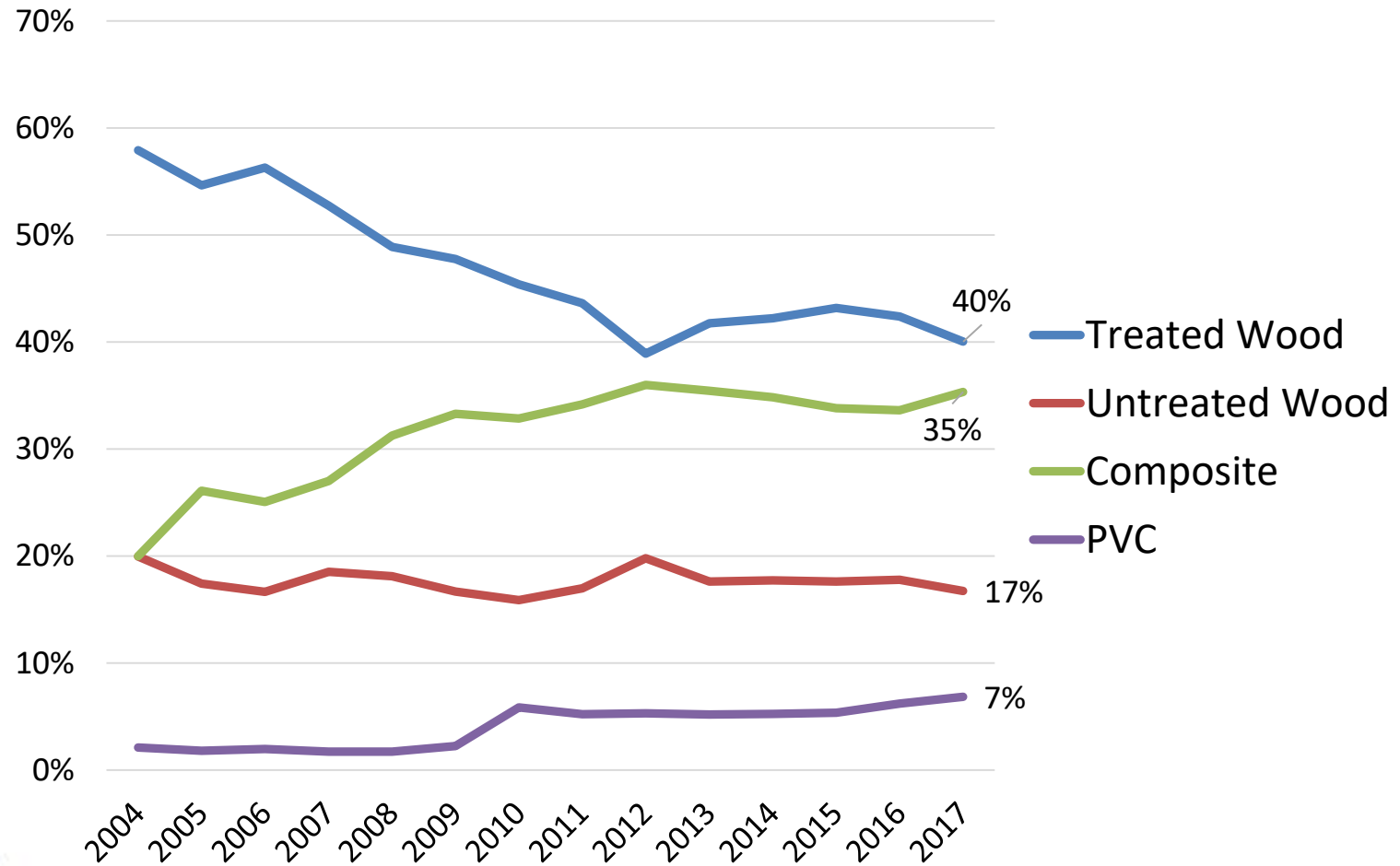




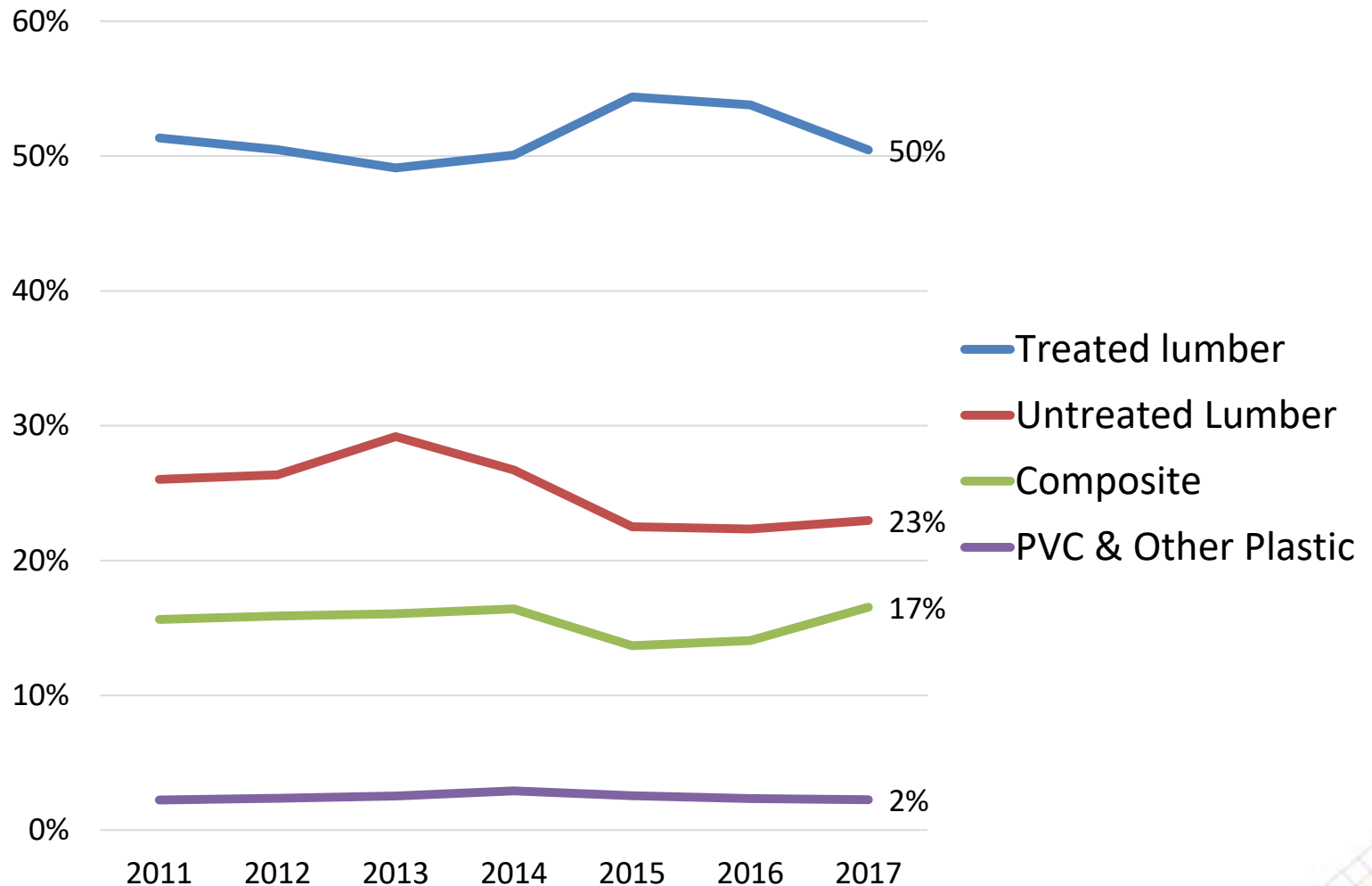
# Decking Installed in US New Homes and Remodeling, 2017 (millions of SF)



# Shares of Raised Porch and Decking Material in New SFD Homes



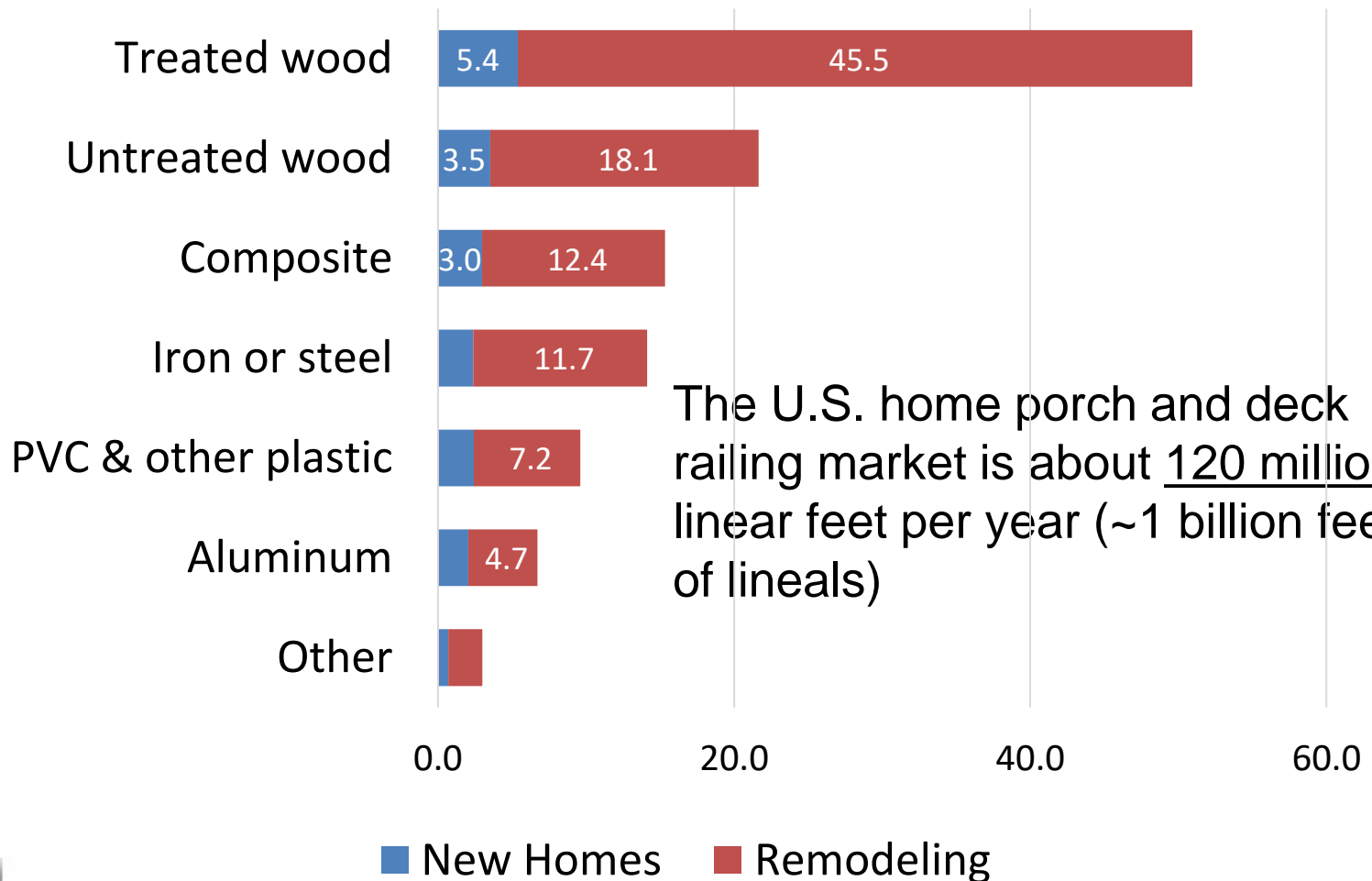
# Shares of Raised Porch and Decking Material in Residential Remodeling



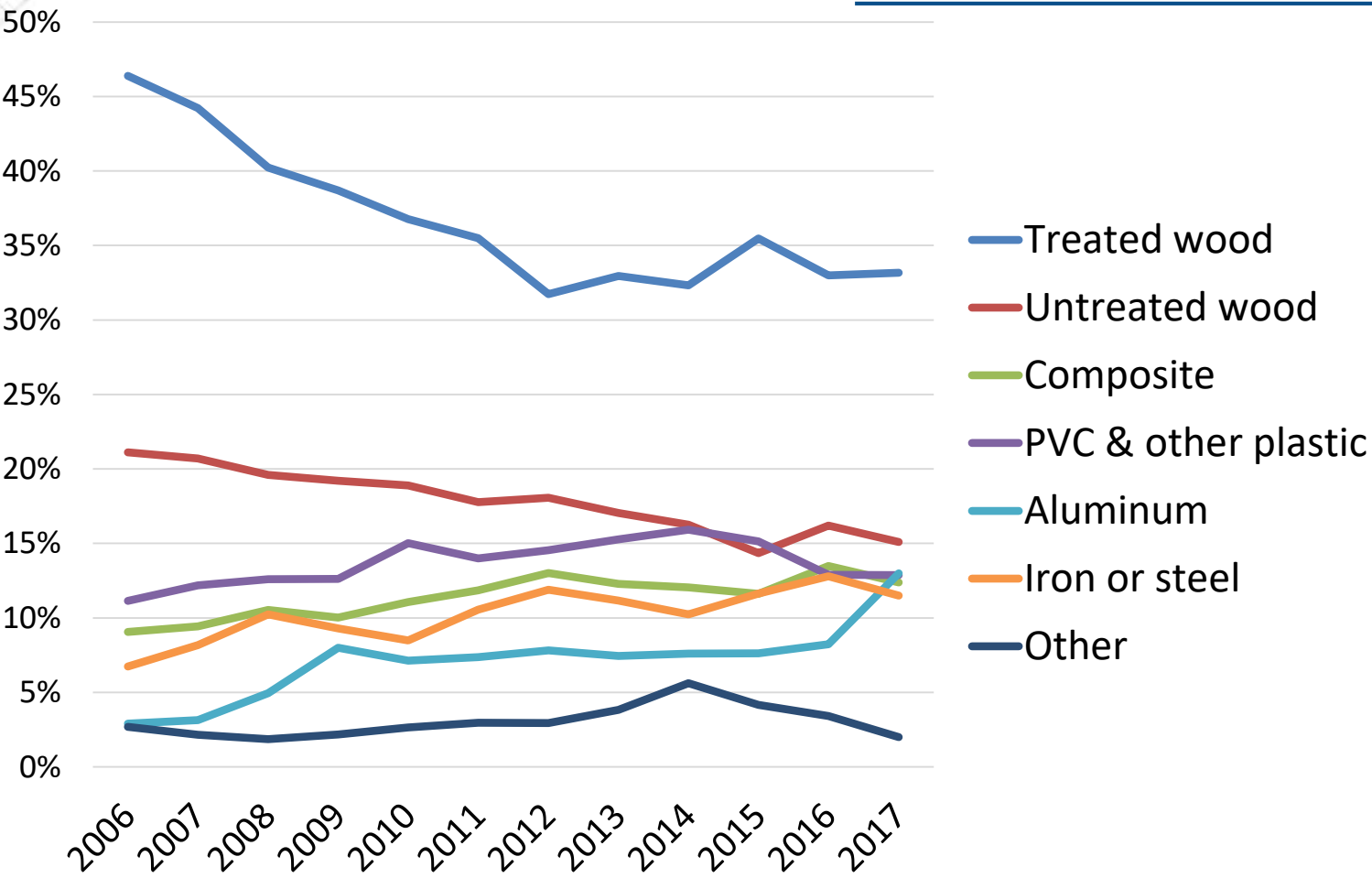
Source: Annual Consumer Practices Reports

# Porch and Deck Railing Systems on New Homes and Remodeling, 2017

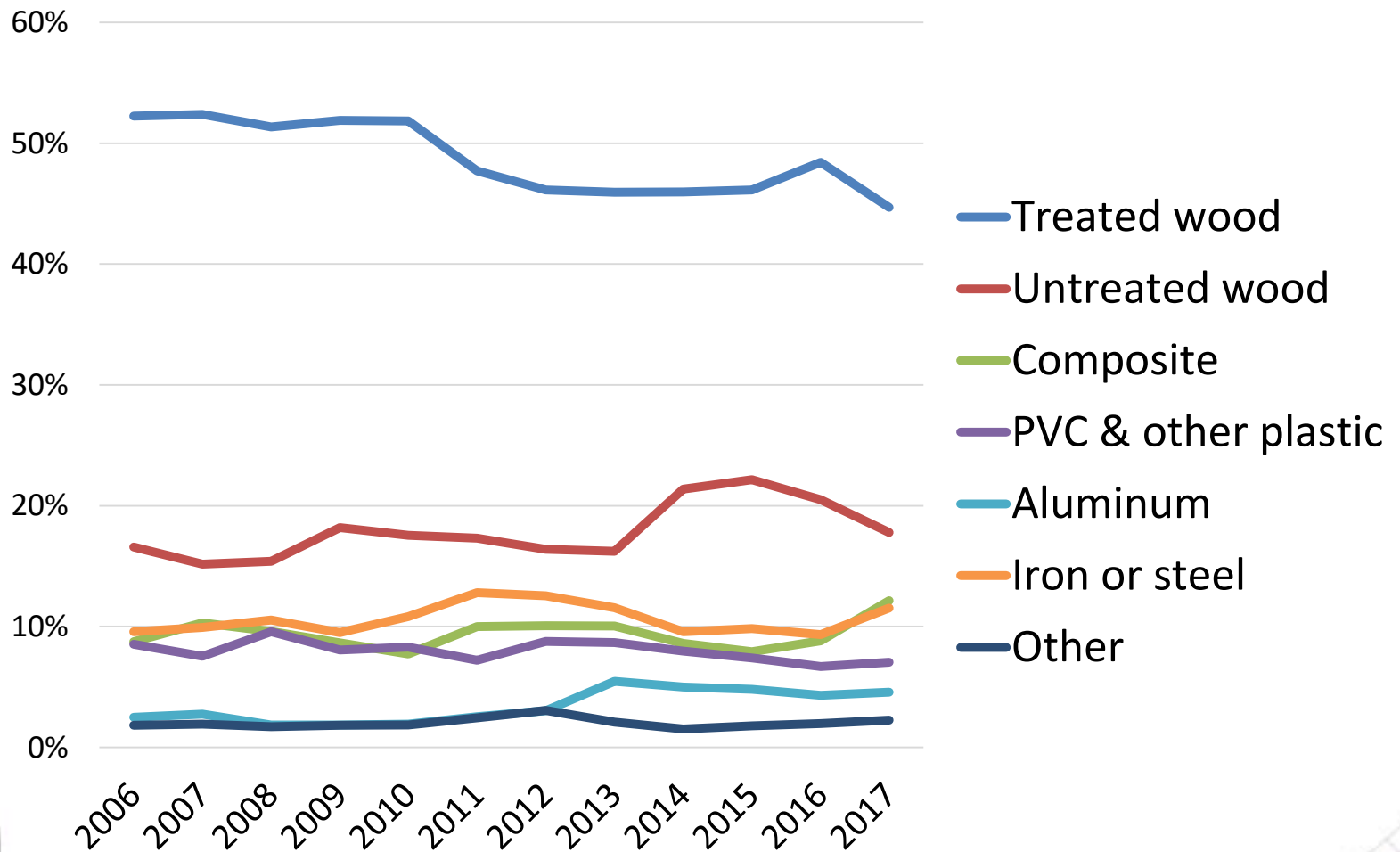
(millions of linear feet)



# Deck and Porch Railing in New U.S. Homes



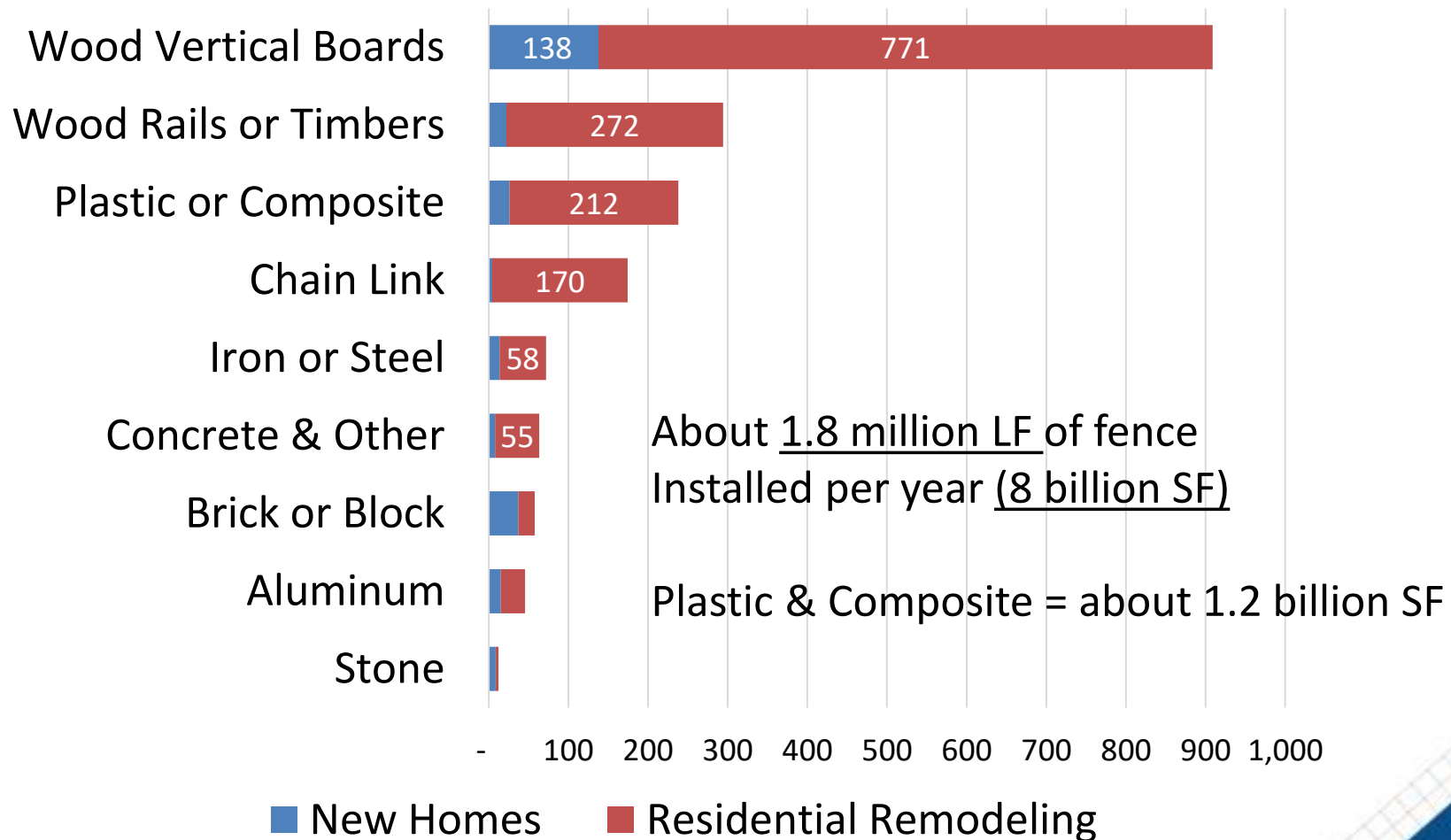
# Deck and Porch Railing in U.S. Home Remodeling



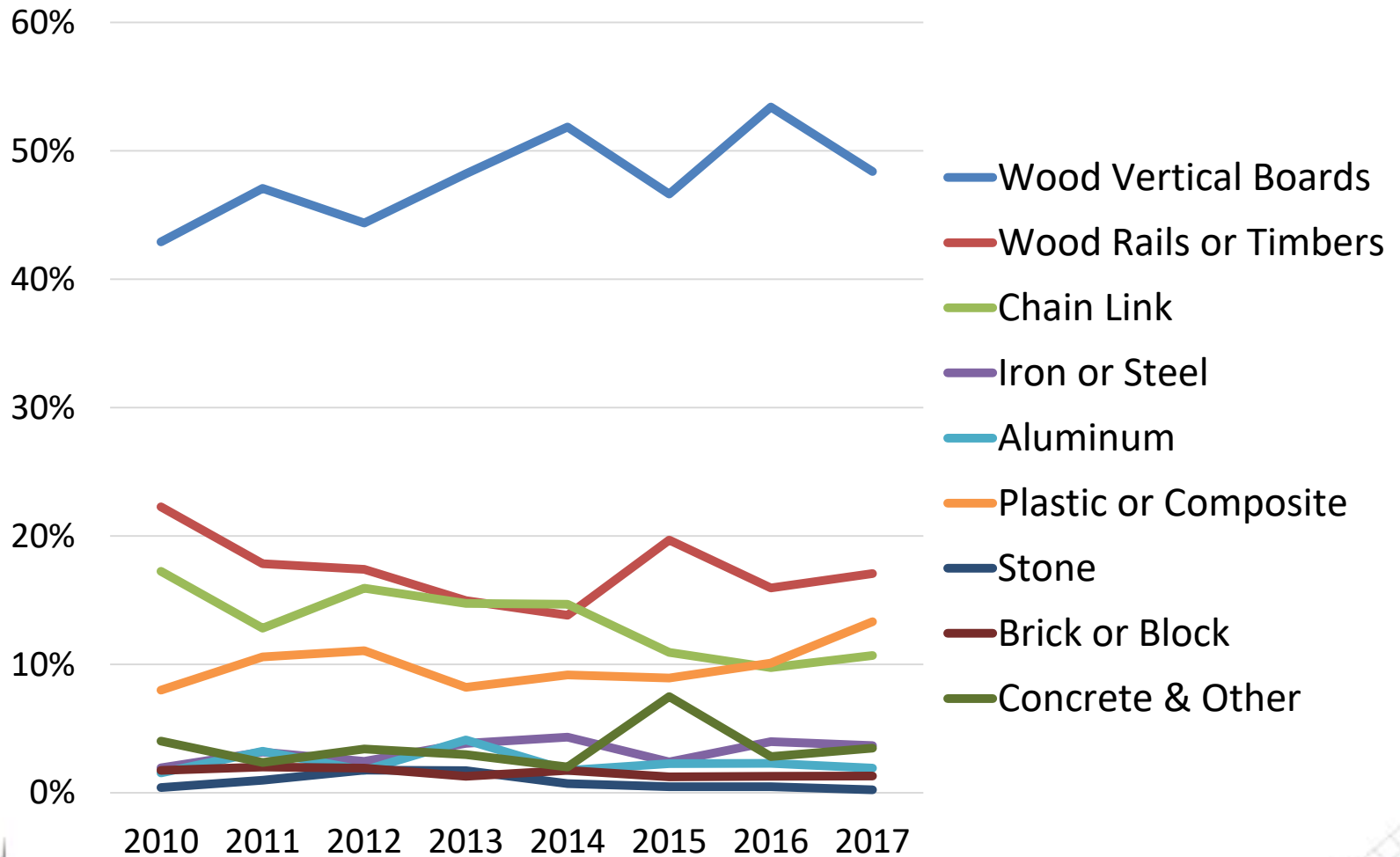
Source: Annual Consumer Practices Reports

# Fences & Privacy Walls Installed in New Homes and Remodeling, 2017

(millions of LF)



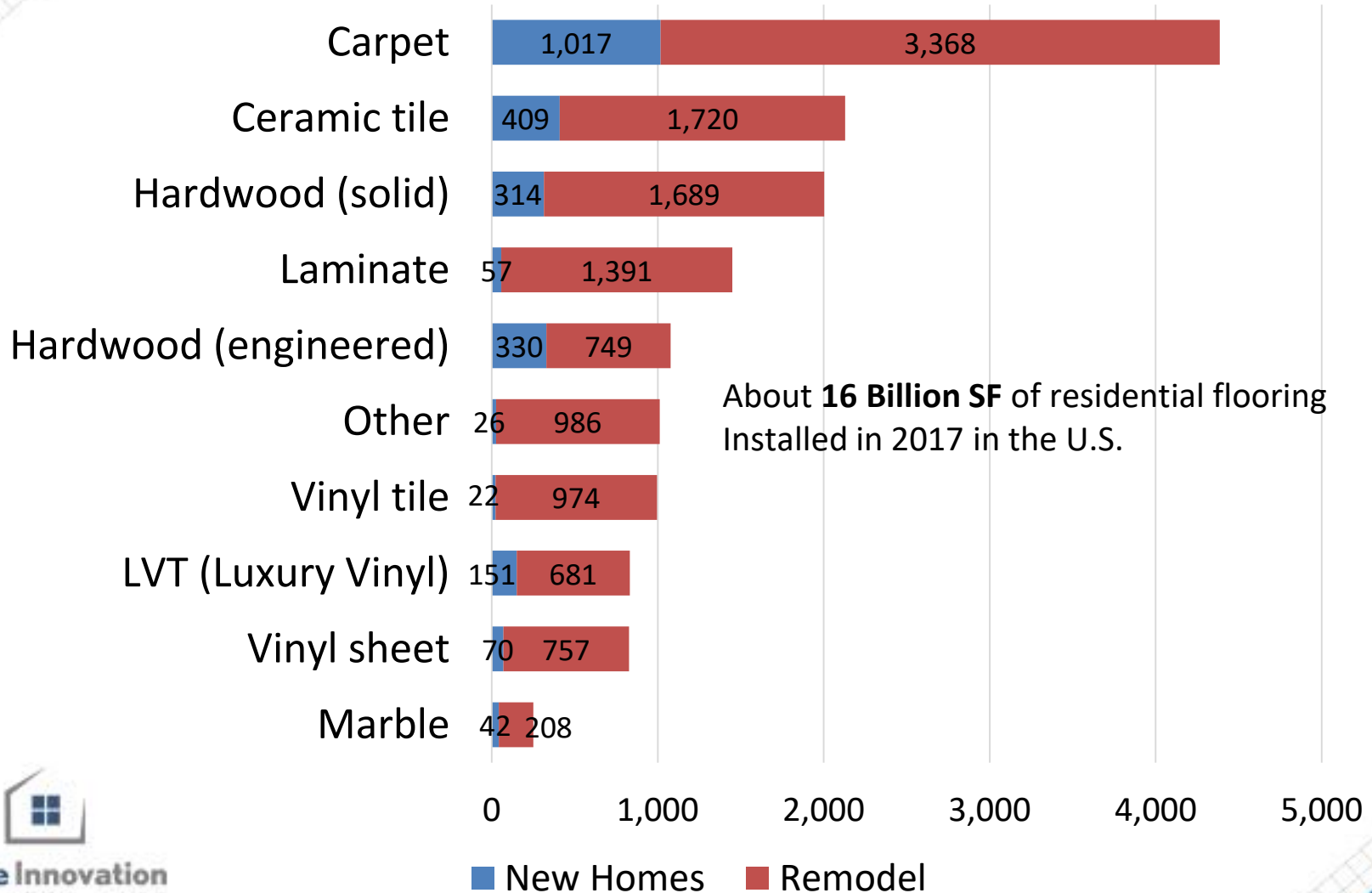
# Fence & Privacy Walls Installed in U.S. Home Remodeling



Source: Annual Consumer Practices Reports



# Flooring Installed in US New Homes and Home Remodeling, 2017 (millions of SF)





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**THANK YOU**

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