



Home Innovation
RESEARCH LABS

TRENDS AND OPPORTUNITIES FOR PVC IN HOME CONSTRUCTION & REMODELING

PVC Formulation 2021

Finding Innovation a Home

Home Innovation Research Labs

- Founded in 1964 as wholly-owned subsidiary of National Association of Home Builders
- Independent researchers assisting manufacturers develop and commercialize new building technologies through:
 - Engineering research & development
 - Market & field research
 - Laboratory testing
- #1 in U.S. green home certification—National Green Building Standard
- Annual tracking studies of building materials purchases



Top Trends in the Building Materials Industry Creating Opportunities

- Skilled labor shortage, increasing wages
 - Average home construction time is now 7+ months
 - Market strongly favoring easy-to-install and pre-finished materials
- Construction materials cost increasing, particularly lumber
- Declining availability of development land in metro areas
 - Flight to “exurbs” continues
 - Suburb development is higher density
 - Home remodeling outlook is outstanding
- More rigorous energy codes in past decade
 - Air tightness requirements of homes, mechanical ventilation
 - Higher insulation requirements
 - Windows—much ground to gain here in thermal performance
- More durable, easier to maintain materials

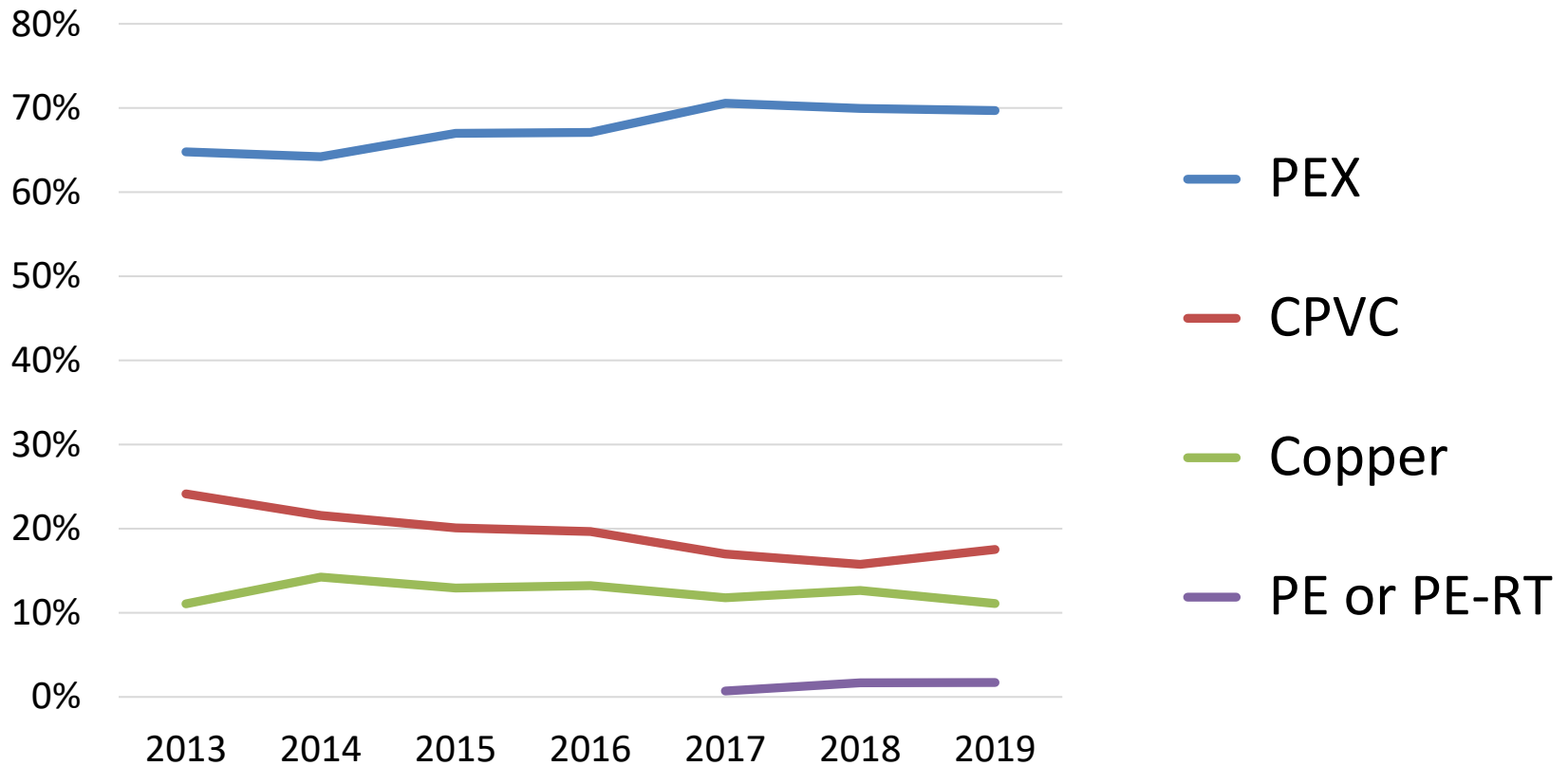


Top Trends in the Building Materials Industry Favoring Plastics

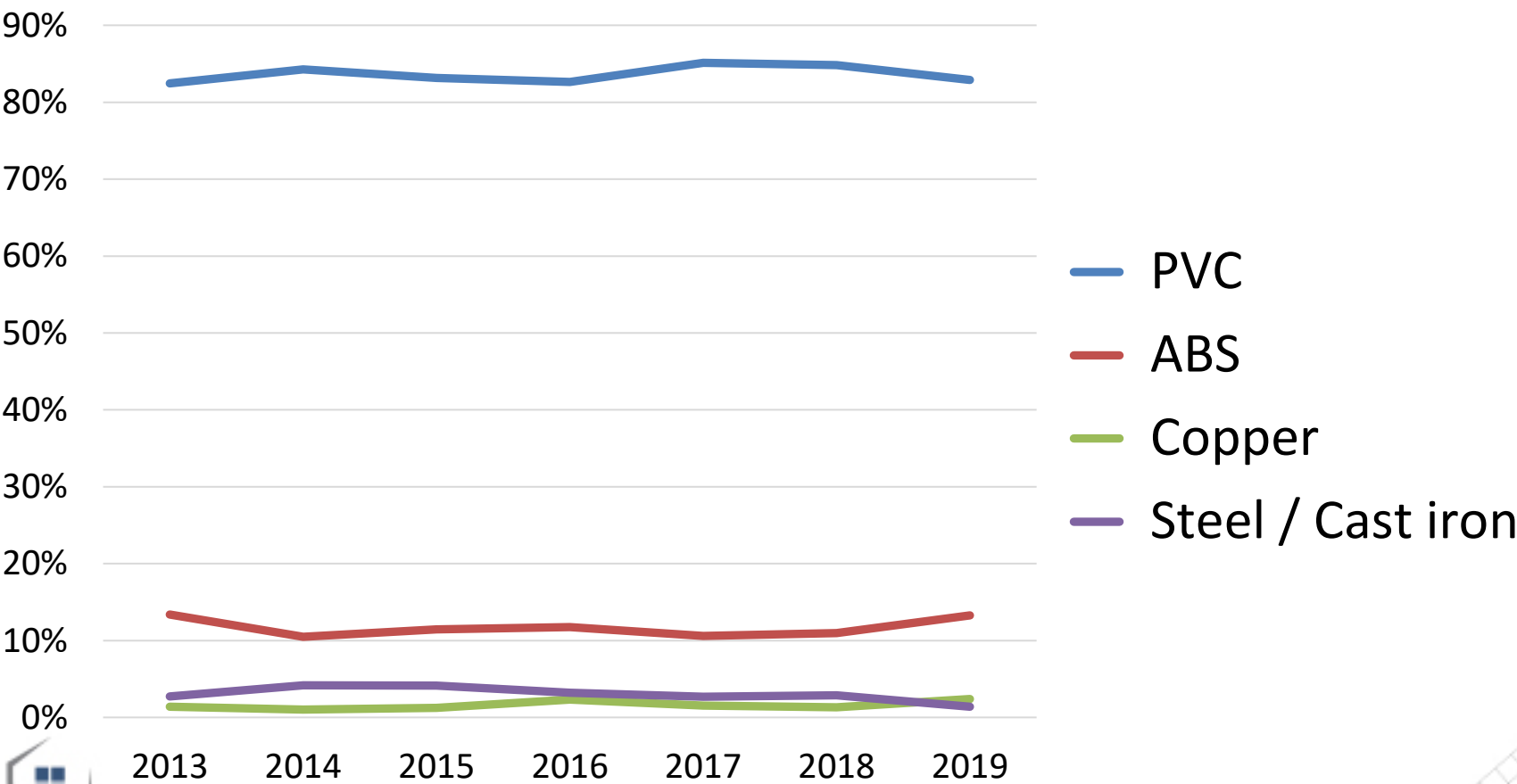
- Demographics
 - Millennial buyers now dominate home market
 - COVID-19 driving increased size of homes
 - DIY segment, after steady decline, invigorated by COVID-19
- Technology improvements in plastics
 - More realistic, more durable and wear resistant plastics
 - flooring, decks, siding, windows, countertops and more
 - Dimensionally stable and heat resistant for darker colors on exteriors
- Design trends favoring simpler styles (more euro and urban) and contemporary design—primarily interiors
 - Open floorplan trend giving way to more defined living spaces
 - Wood, stone, concrete, and steel—with multiple textures on exterior
- Blurring of transition between indoor and outdoor living—moving window walls, upgraded outdoor living space



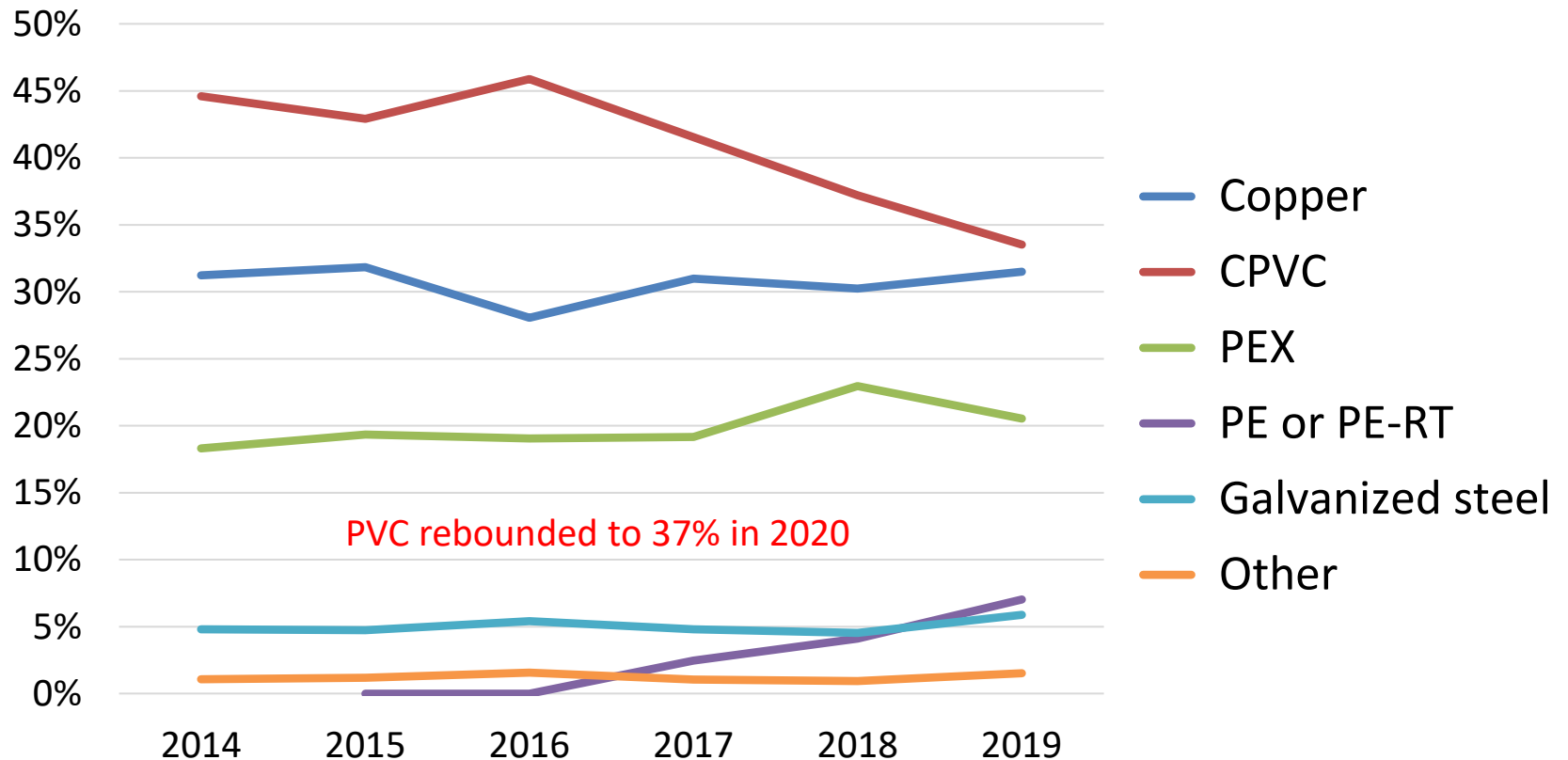
Hot and Cold Water Distribution Piping in New Homes



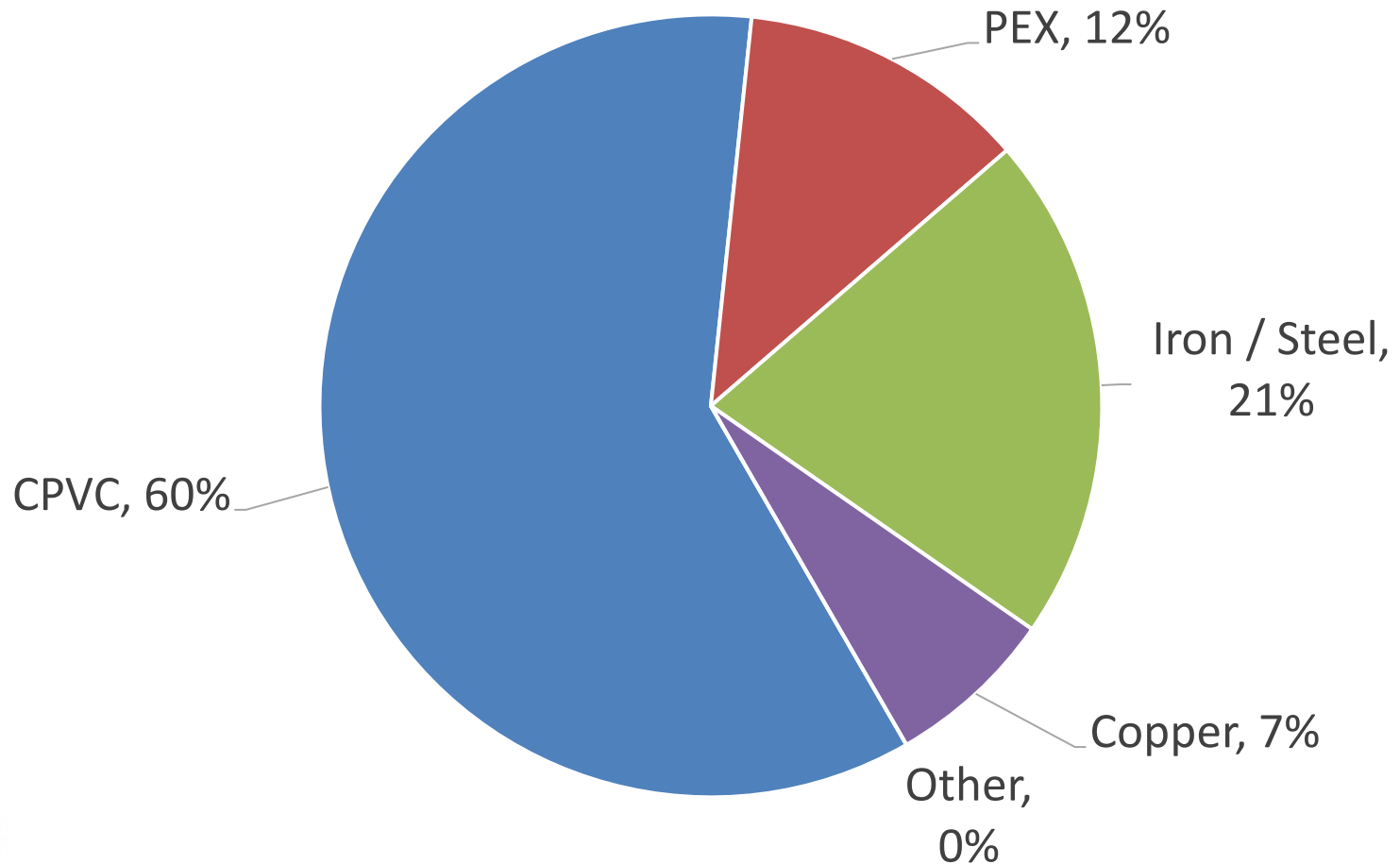
Drain, Waste & Vent Piping in New Homes



Hot and Cold Water Piping Installations in Home Remodeling

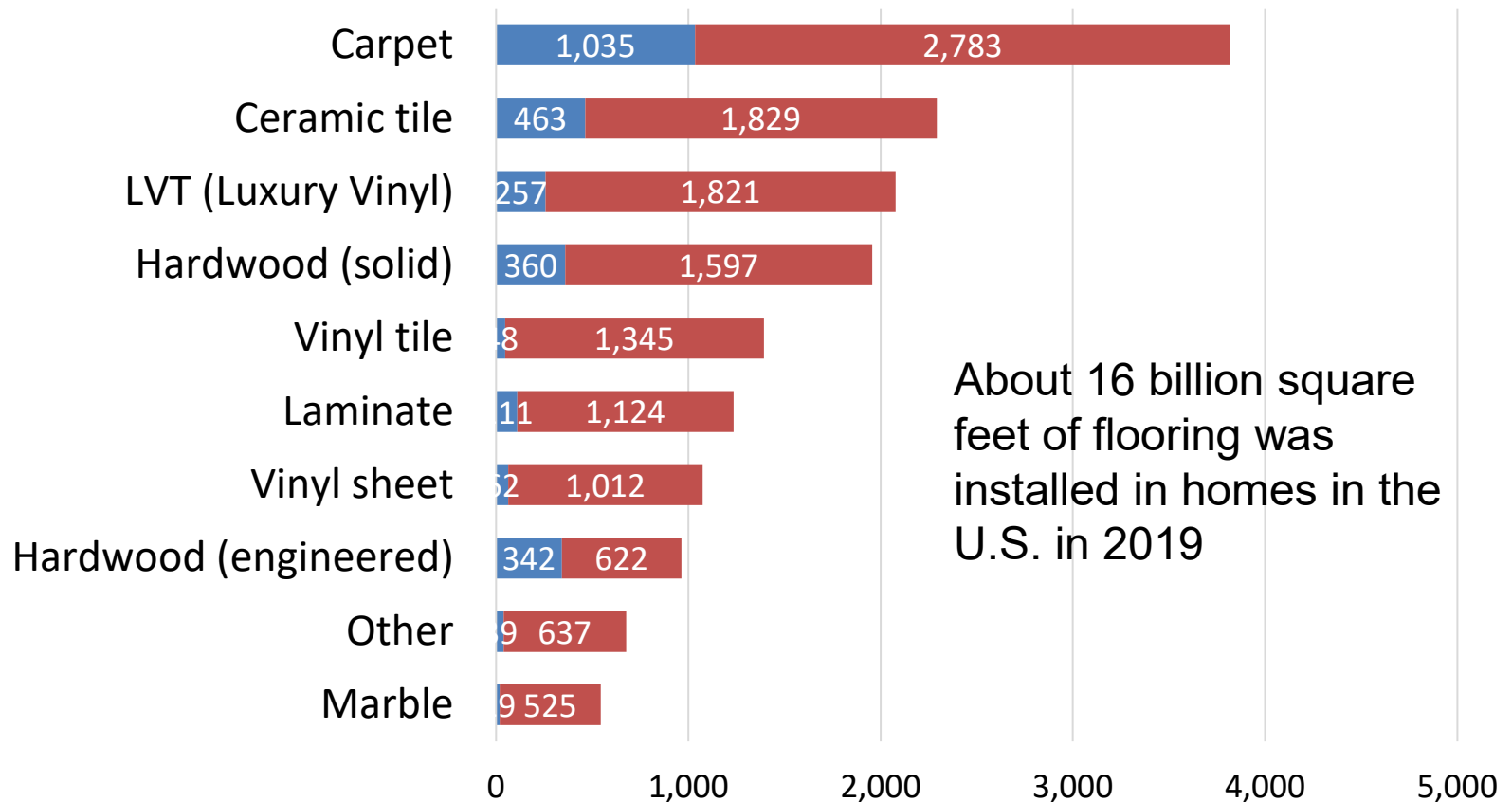


Fire Sprinkler Piping in New Homes



Source: Annual Builder Practices Reports

Residential Flooring Installations 2019 (millions of SF)

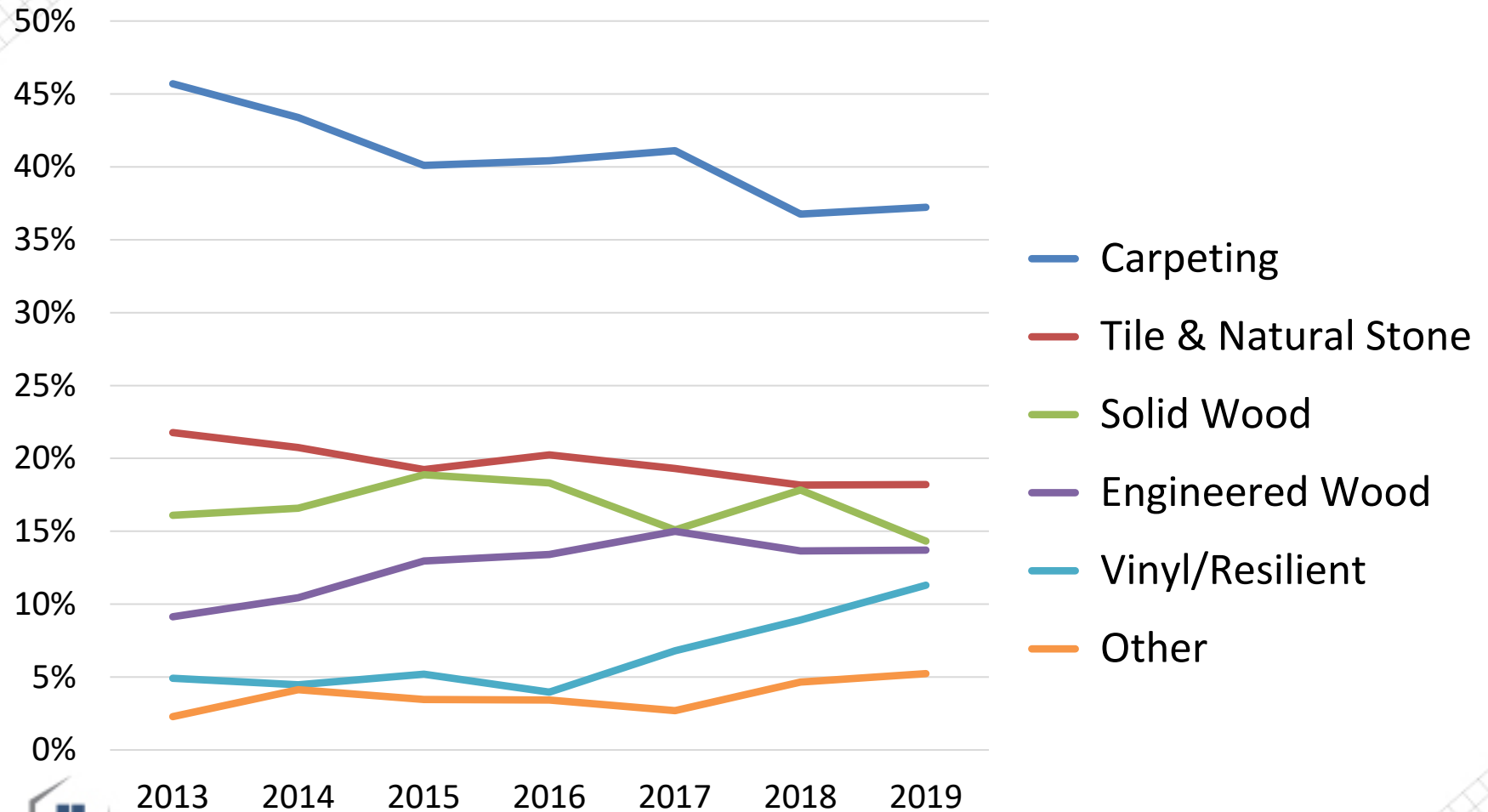


About 16 billion square feet of flooring was installed in homes in the U.S. in 2019

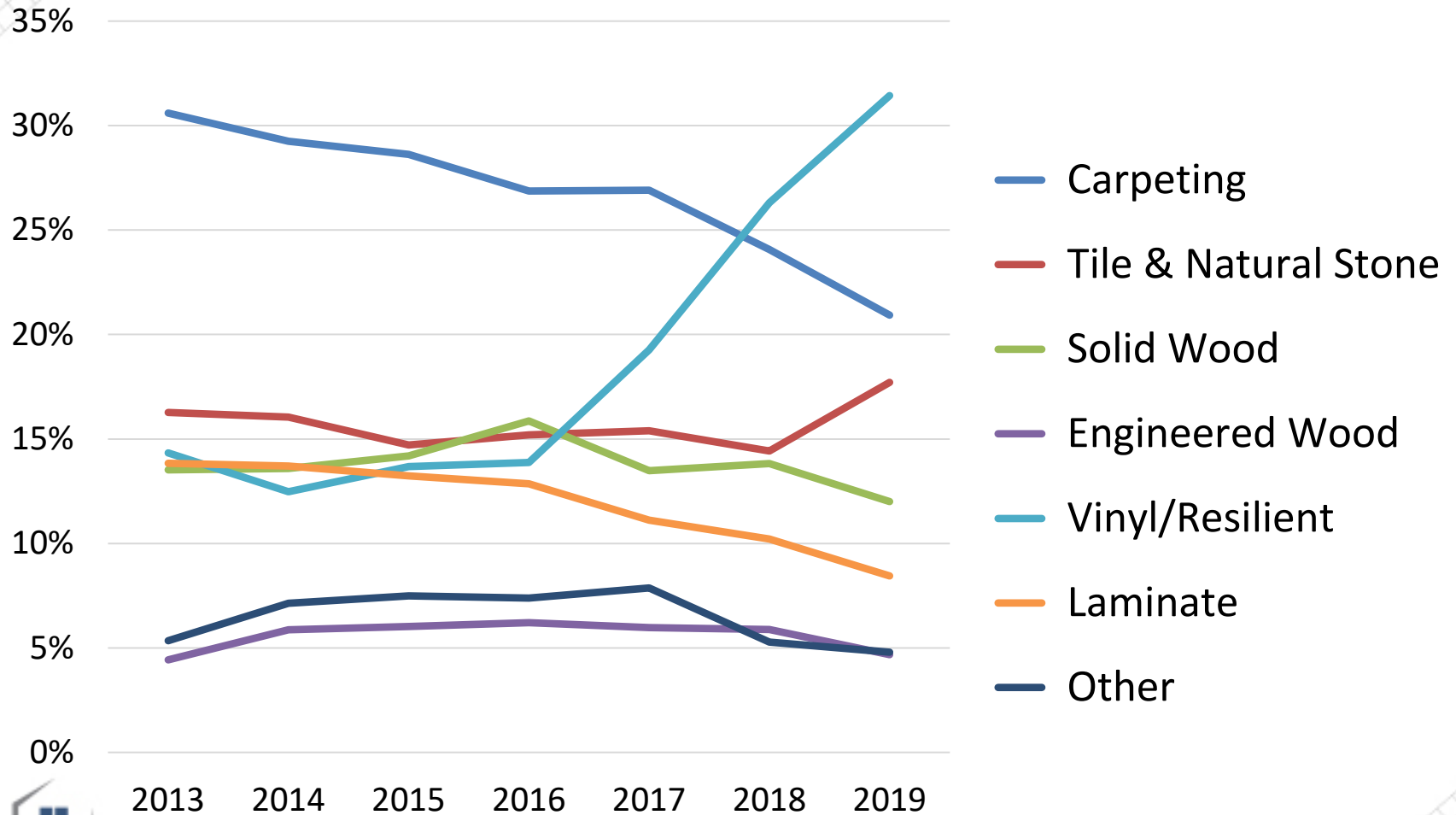
■ New Homes ■ Remodel

Source: Annual Builder & Consumer Practices Reports

Flooring Trends in New Homes

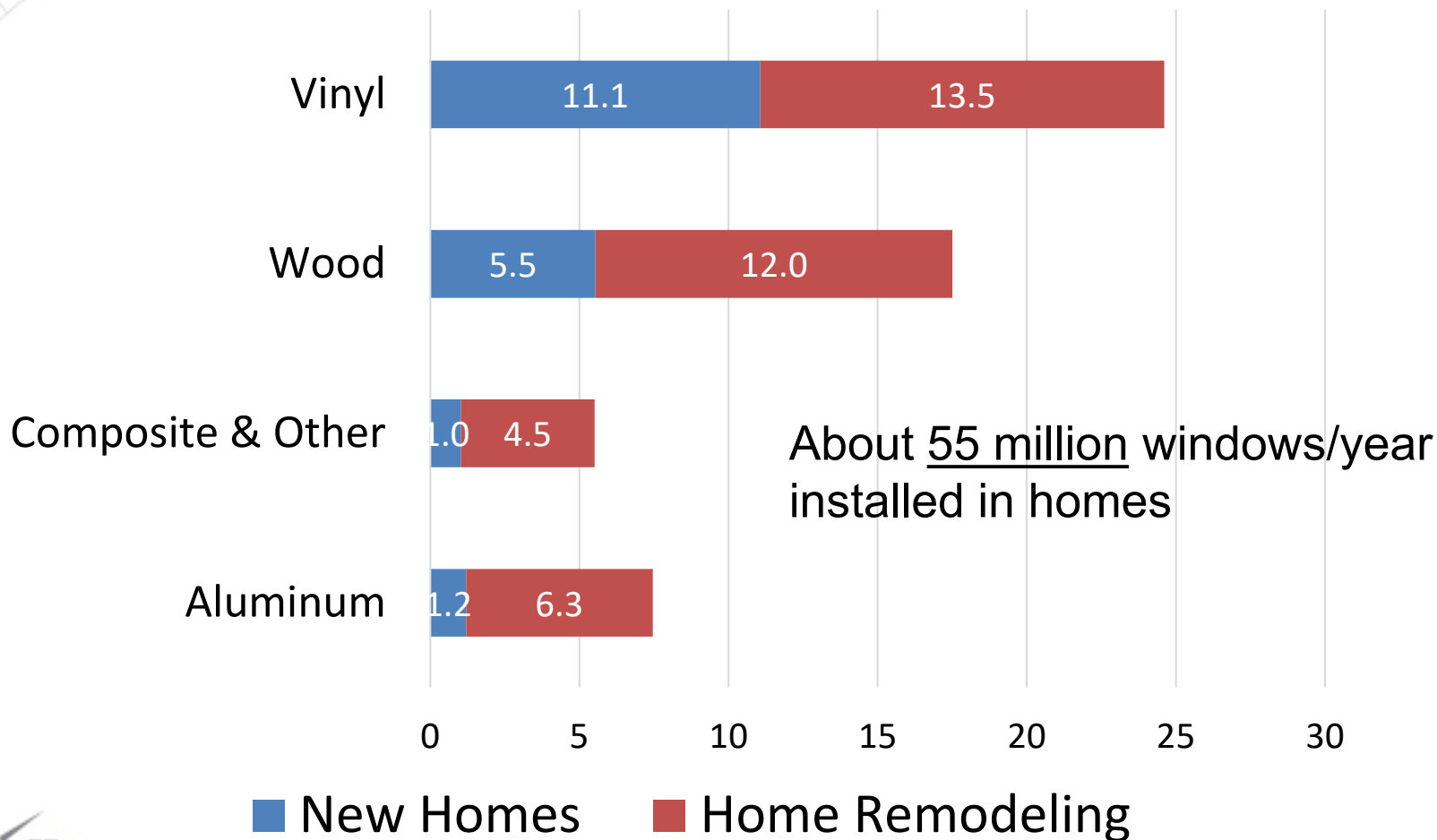


Flooring Trends in Home Remodeling

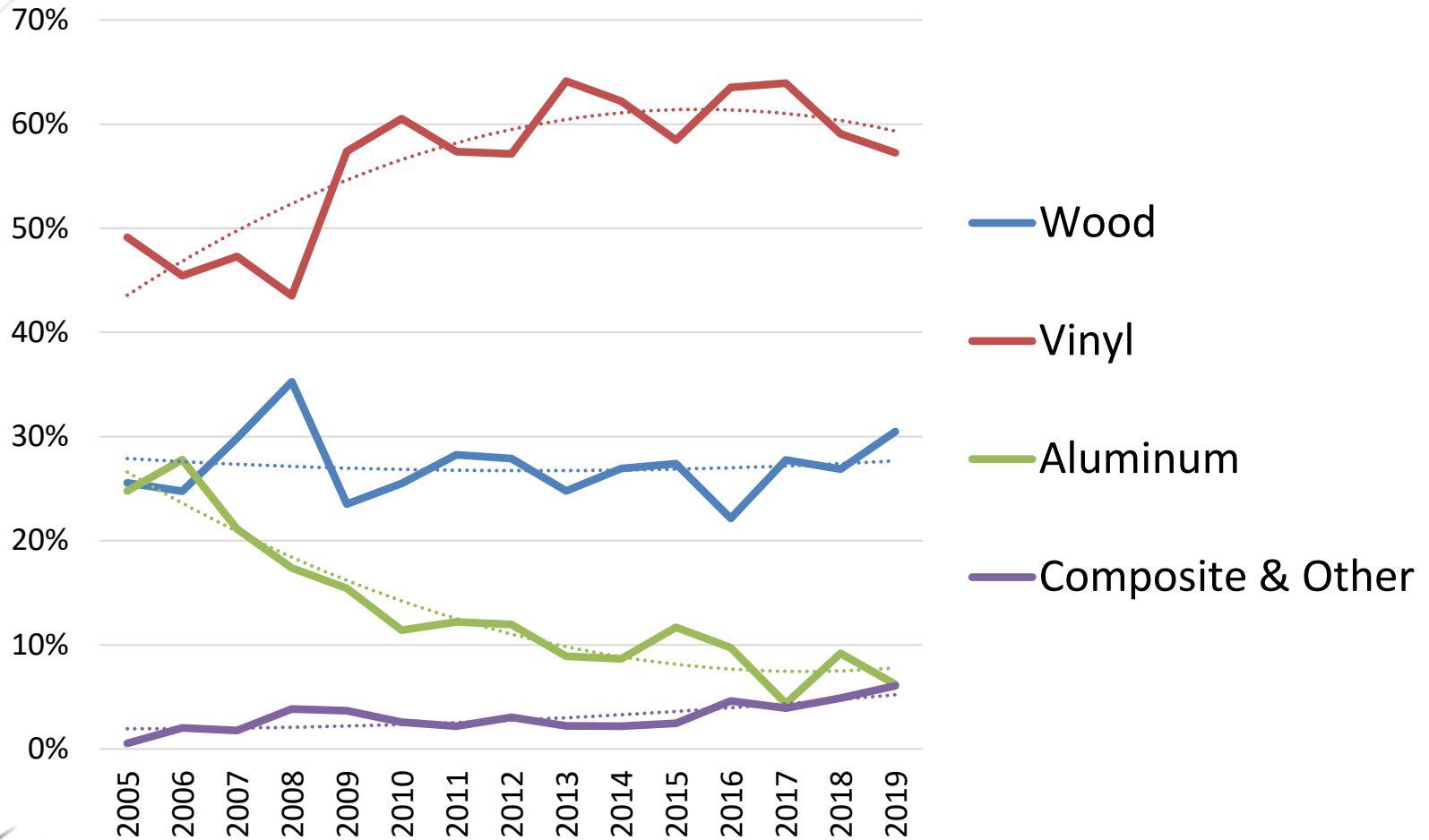


Windows Installed in New U.S. Homes and Home Remodeling, 2019

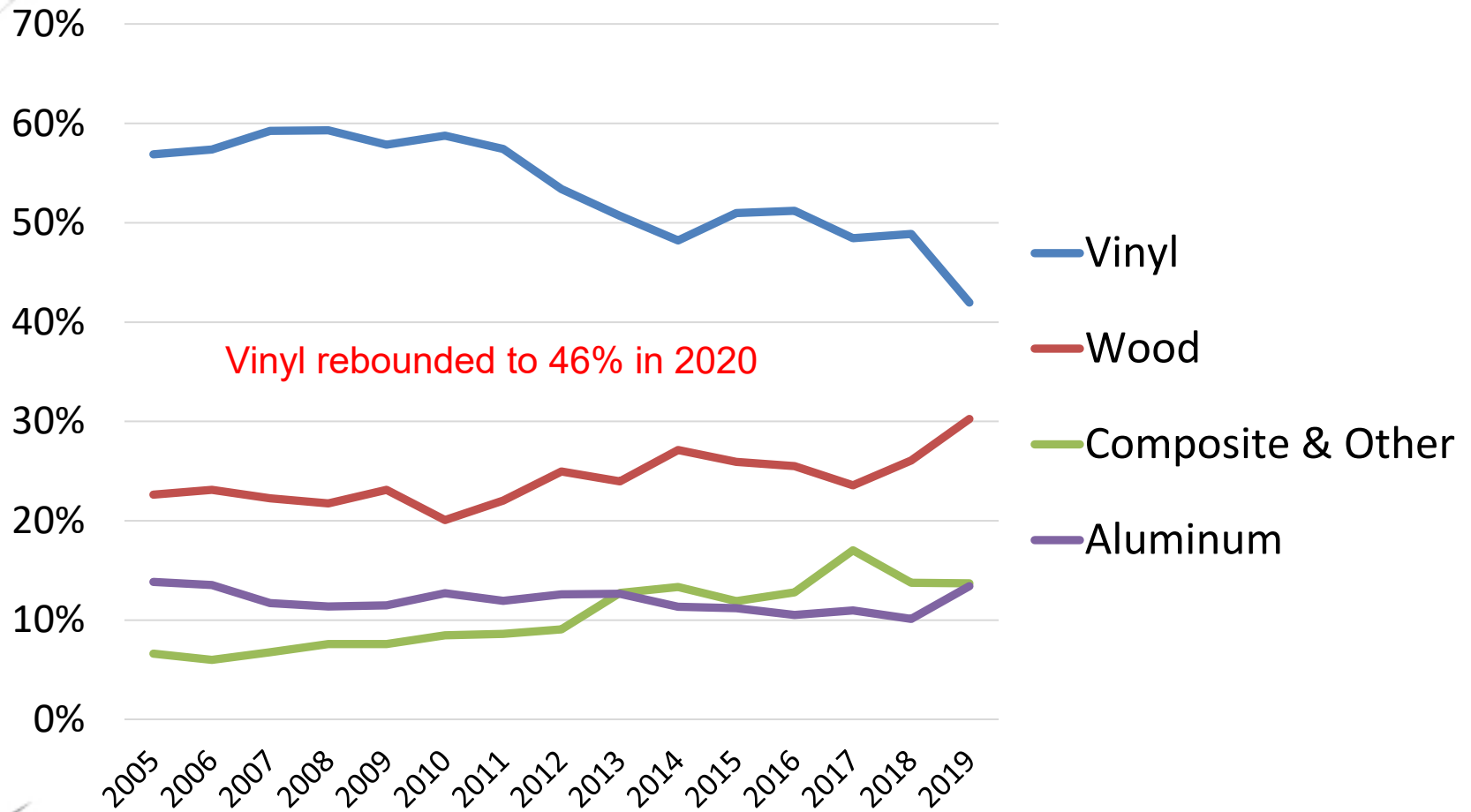
(millions of window units)



Trends in New Home Window Frame Materials

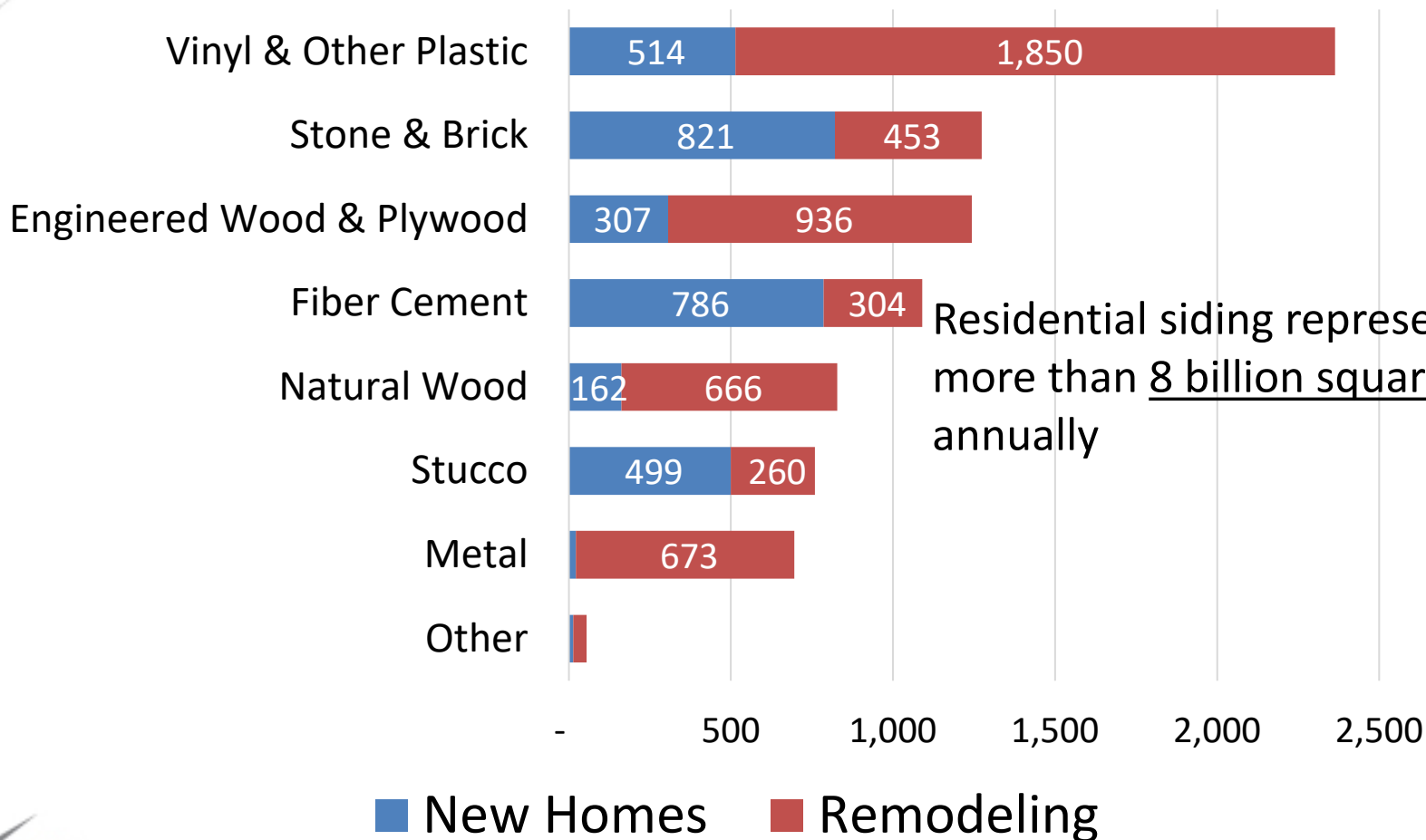


Windows in U.S. Home Remodeling (primarily replacements)



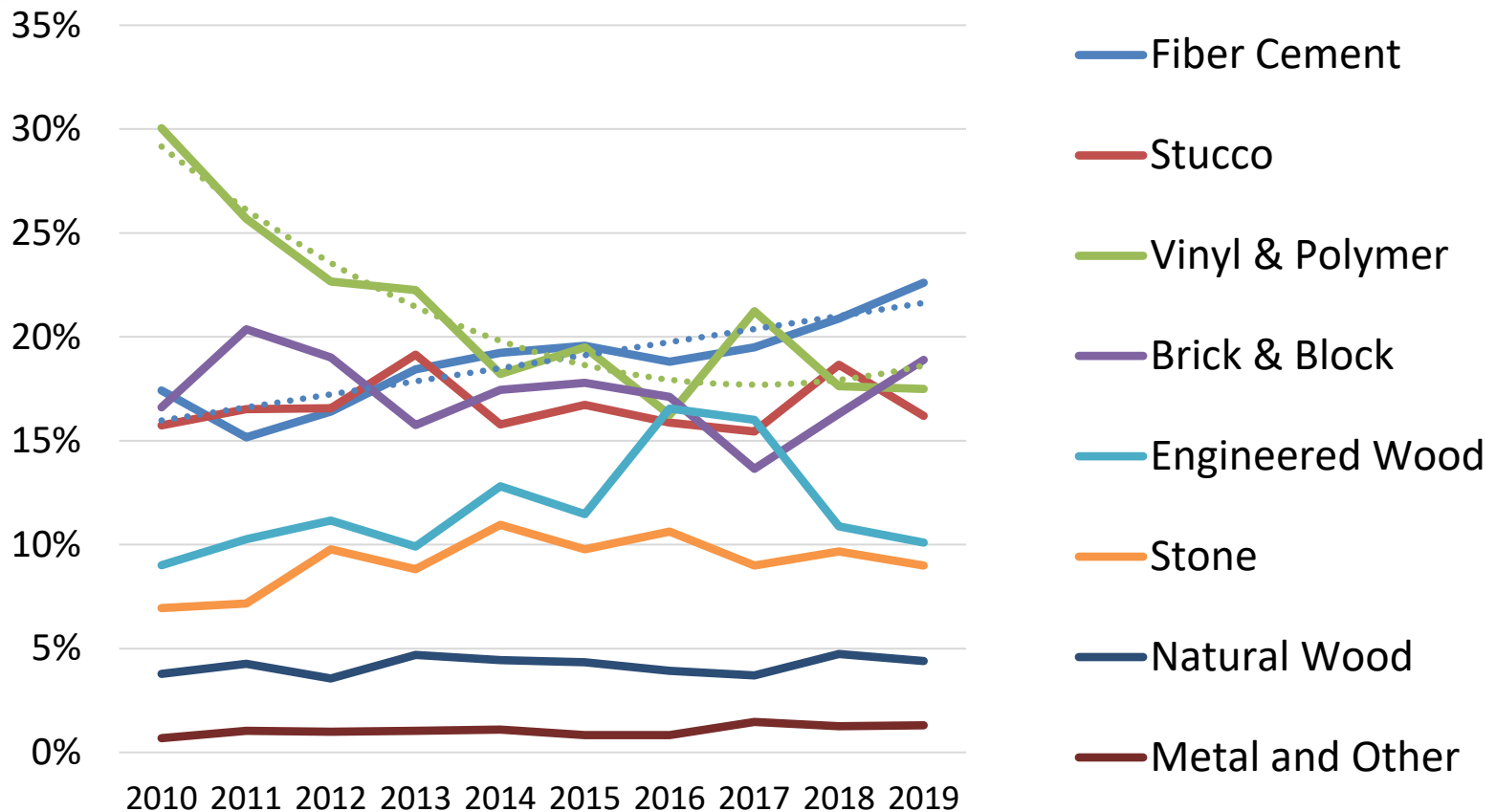
Siding in New Homes and Remodeling, 2019

(millions of SF)

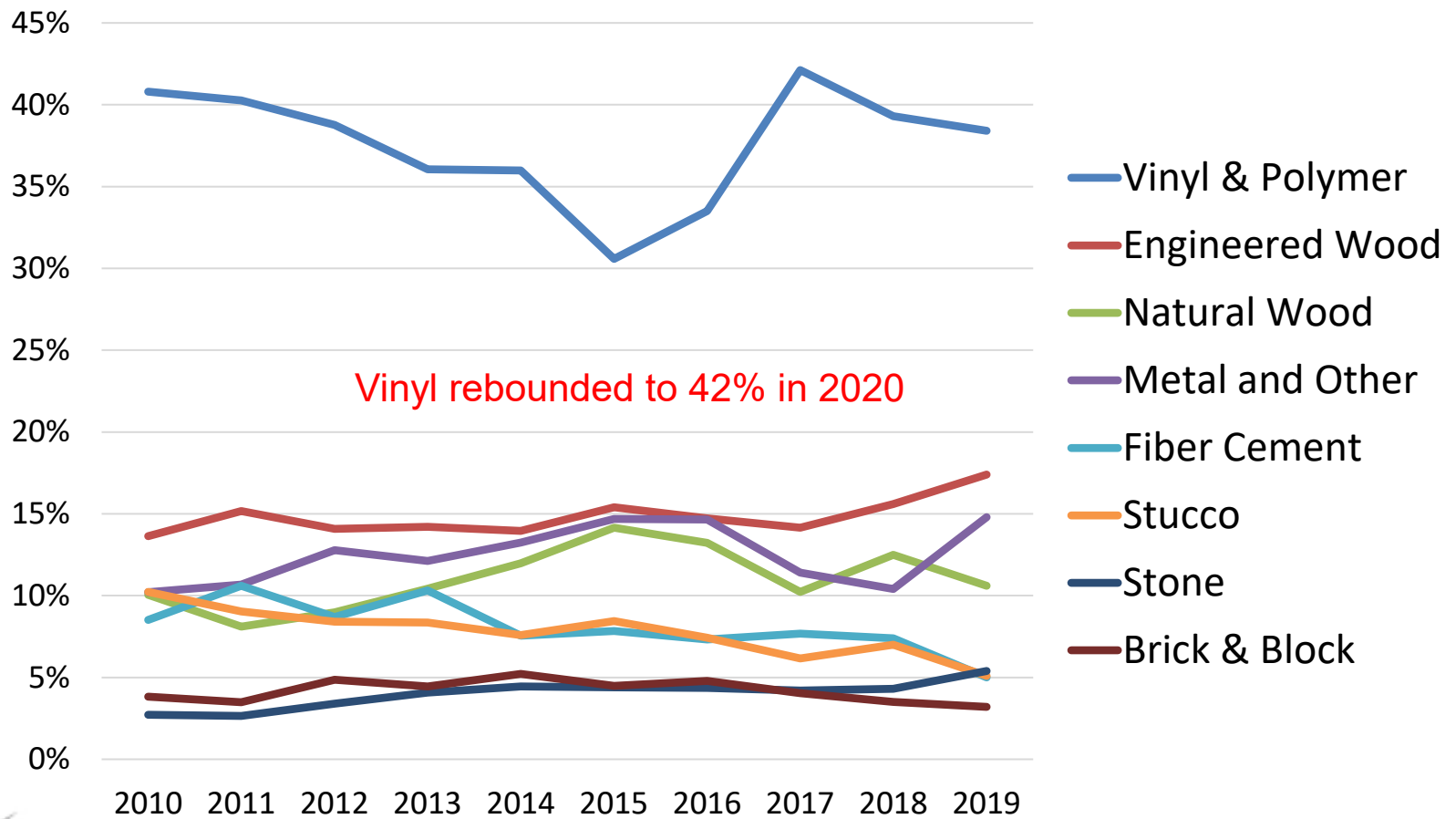


Residential siding represents more than 8 billion square feet annually

Siding Installations on New Homes

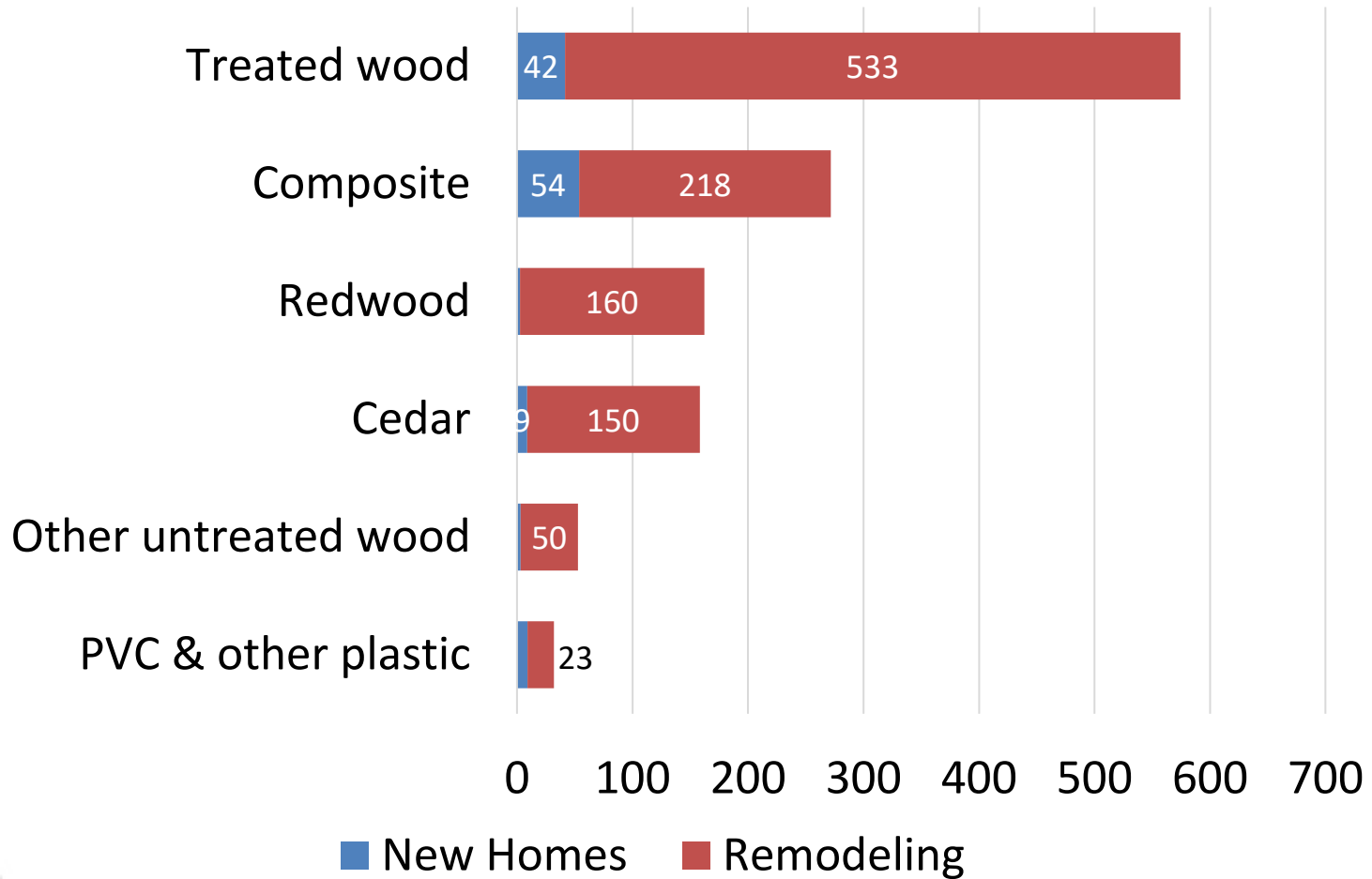


Siding Installations in Home Remodeling

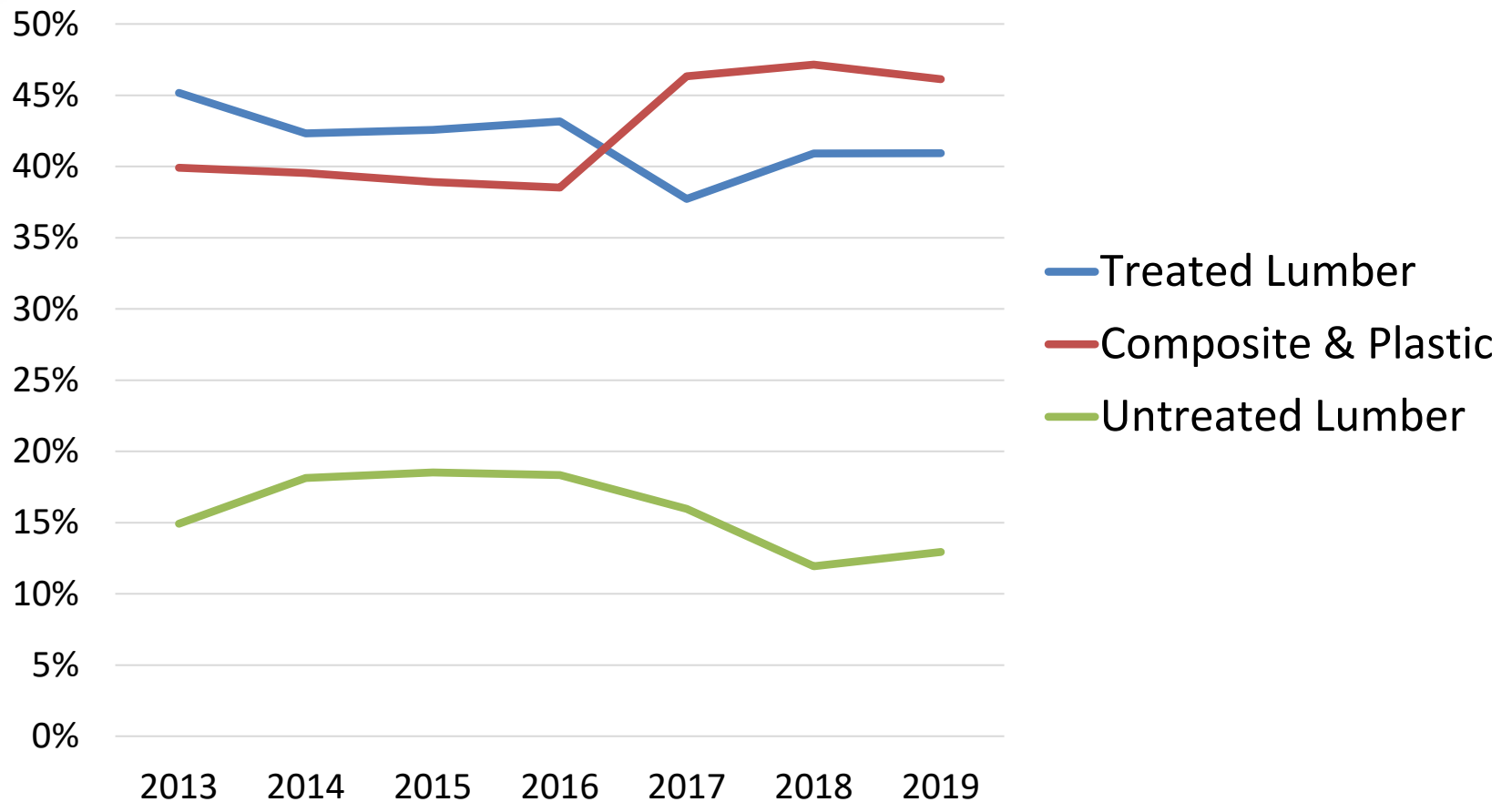


Porch & Deck Surfacing in New Homes and Remodeling, 2019

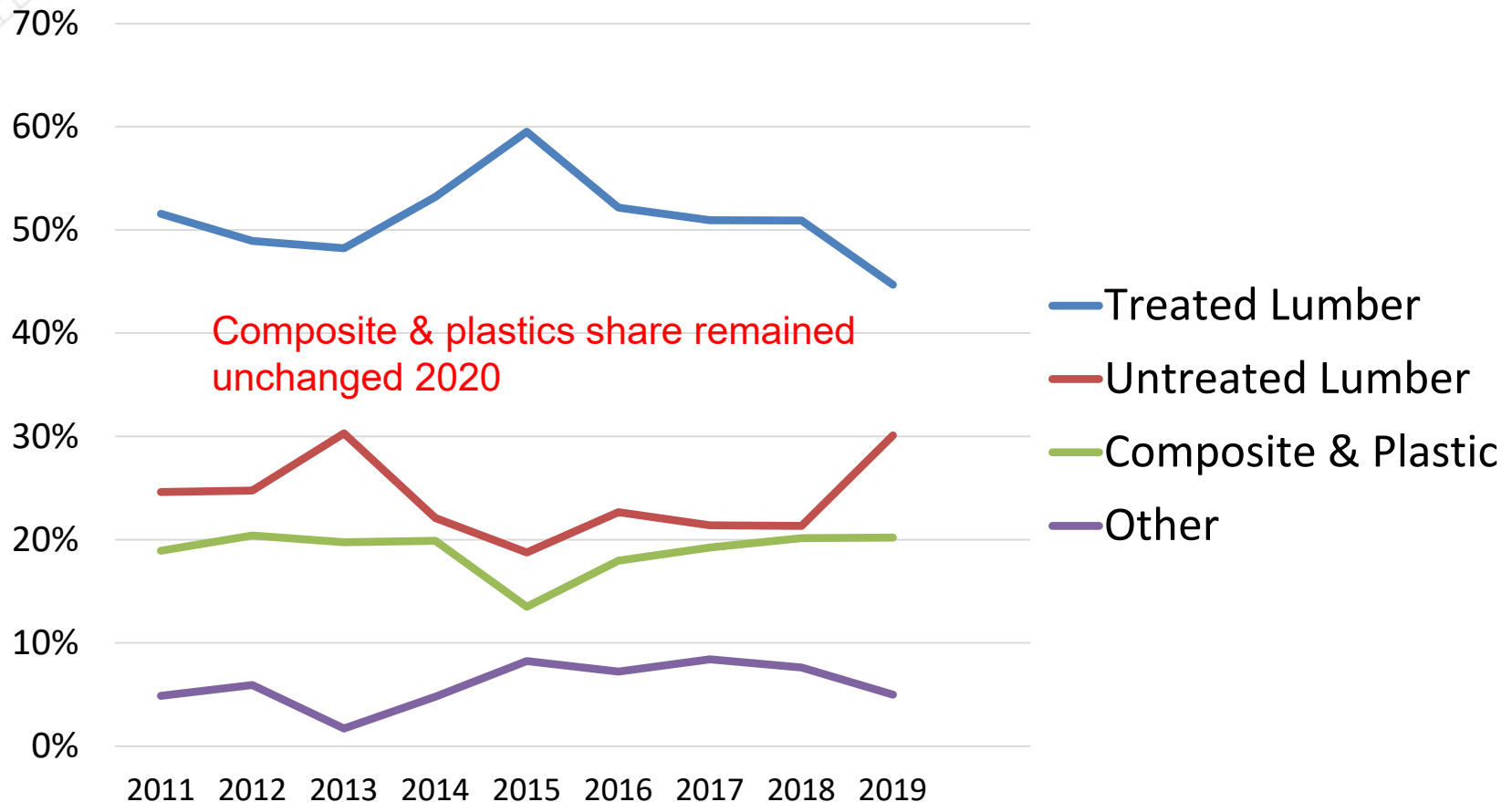
(millions of sf installed)



Porch and Deck Surfacing Material in New Homes

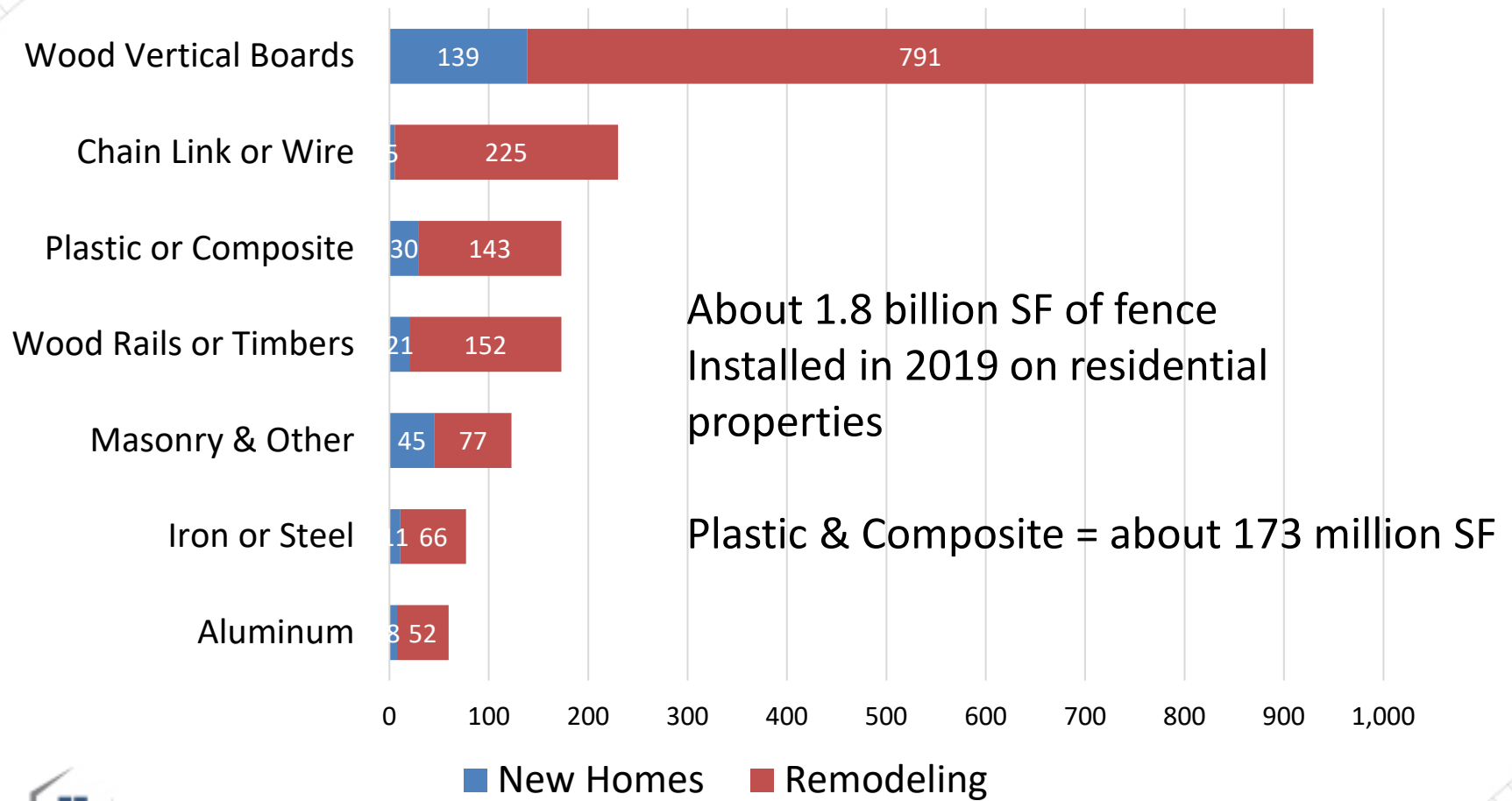


Porch and Deck Surfacing Material in Home Remodeling

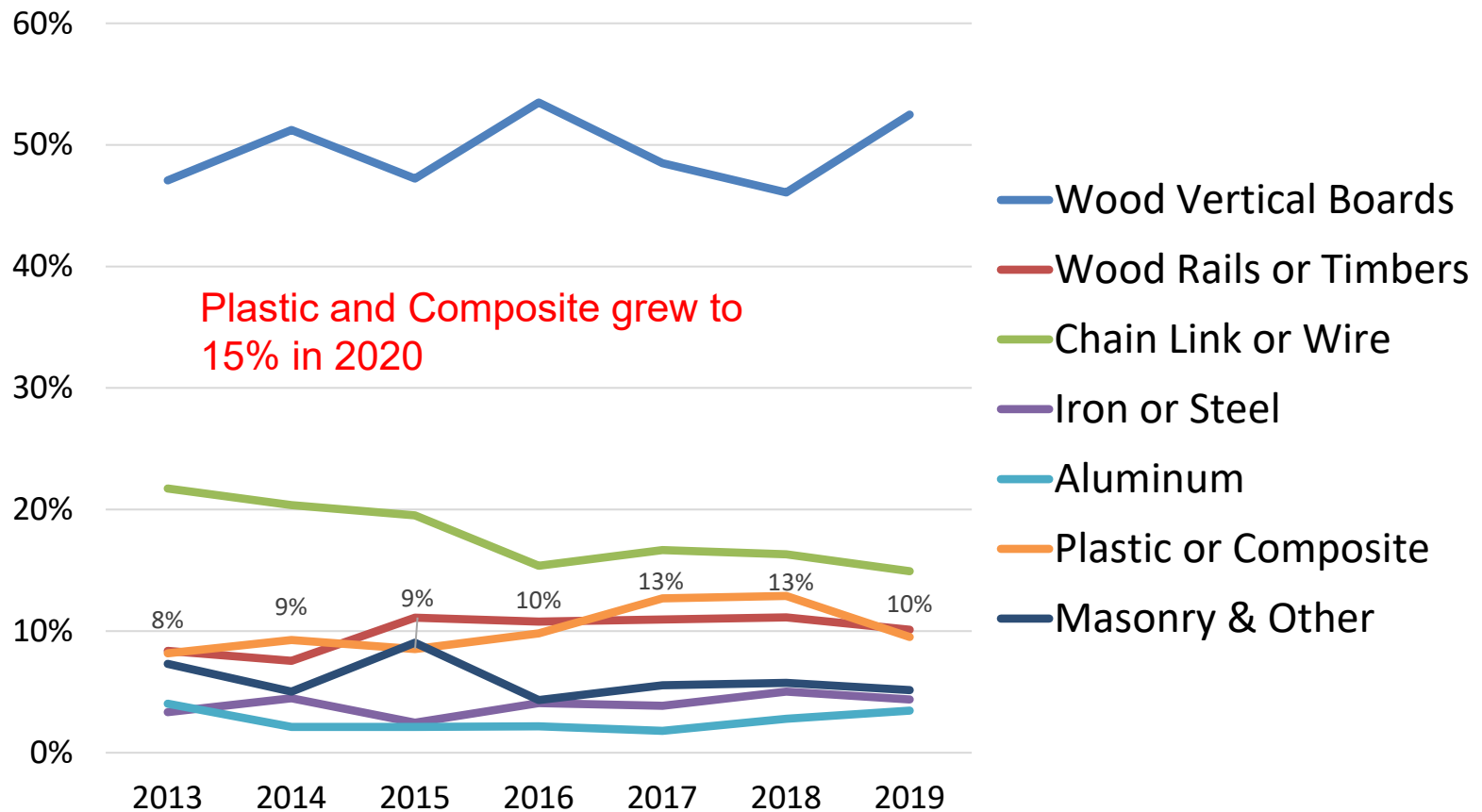


Fences & Privacy Walls Installed in New Homes and Remodeling, 2019

(millions of SF)



Fence & Privacy Walls Installed in Home Remodeling





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THANK YOU

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