

12 December 2019

Australian Securities Exchange
Attention: **ASX Market Announcements**

BY ELECTRONIC LODGEMENT

Dear Sir / Madam

US Brick Market Overview Presentation

Please see attached US Brick Market Overview Presentation by Greg Silvestri – General Manager Austral Bricks NSW.

This presentation has been authorised for release by the Managing Director, Lindsay Partridge.

Yours faithfully

BRICKWORKS LIMITED



SUSAN LEPPINUS
COMPANY SECRETARY



Analyst Presentation – USA Brick Market

11th December, 2019

Mr. Greg Silvestri General Manager Austral Bricks NSW

Park Chelsea, Washington DC



Introducing Greg Silvestri

- Glen-Gery November 2017 through July 2019
- CertainTeed (Saint-Gobain) October 2011 through October 2017
- Viracon (Apogee) 2007 through October 2011
- Plug-Power 1999 through 2007
- Norton Abrasives (Saint-Gobain) 1991 through 1999
- McKinsey & Company 1986 through 1991
- Hewlett-Packard 1982 through 1985
- MBA - University of Virginia
- Chemical Engineering - Princeton University

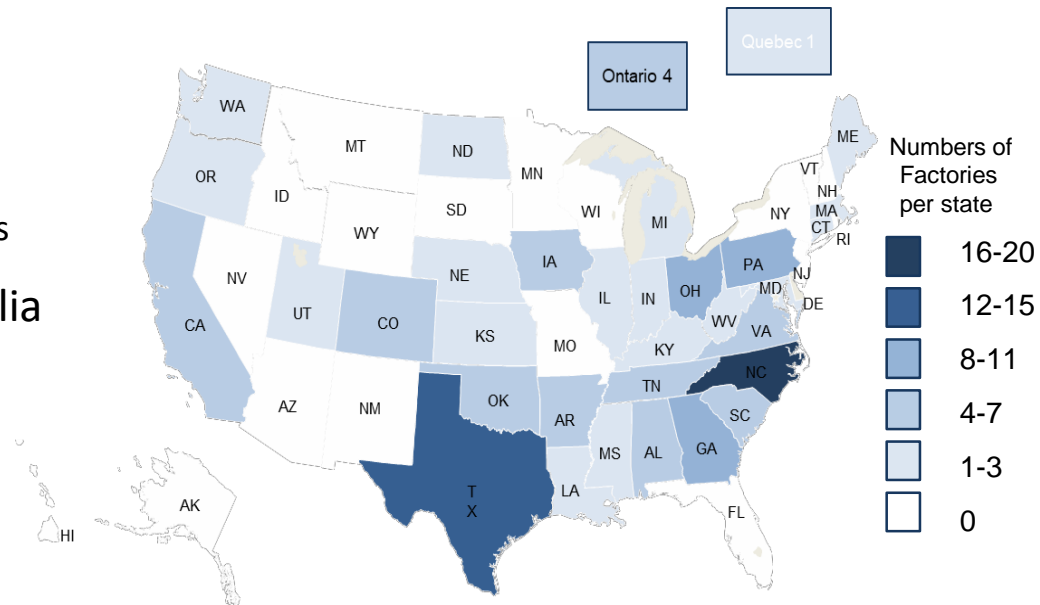


Overview

The USA bricks industry is large but appears 20+ years behind Australia

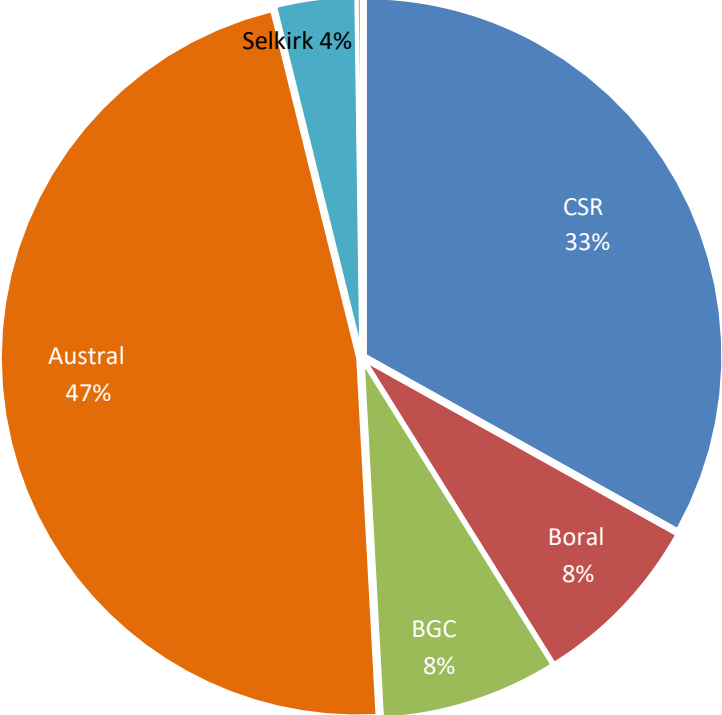
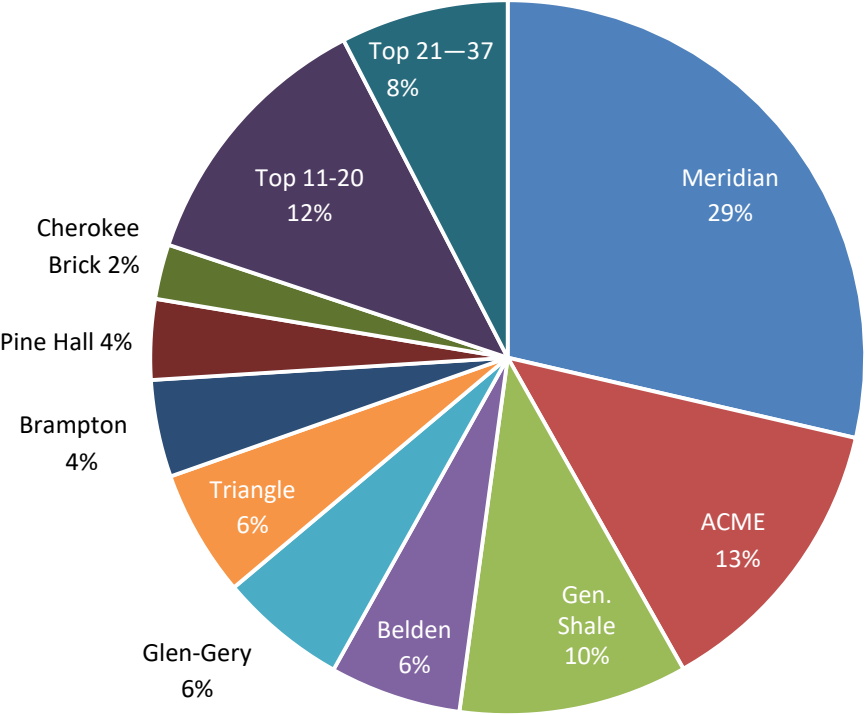
- Favourable market conditions in the USA
 - Housing recovery well underway
 - Labour and energy costs remain low
 - Interest rates remain historically low
 - Recent corporate tax cuts (now 15%)
- Bricks are favoured external cladding
 - Across all generations, States and price points
- USA's market is 20+ years behind Australia
 - Industry is not consolidated
 - Product is less sophisticated
- 37 manufacturers
 - 138 factories identified
 - 31 of 50 states
 - Highest concentration in North Carolina and Texas

Brick factory heat map by state



Market Share

The USA bricks industry is significantly more fragmented than Australia

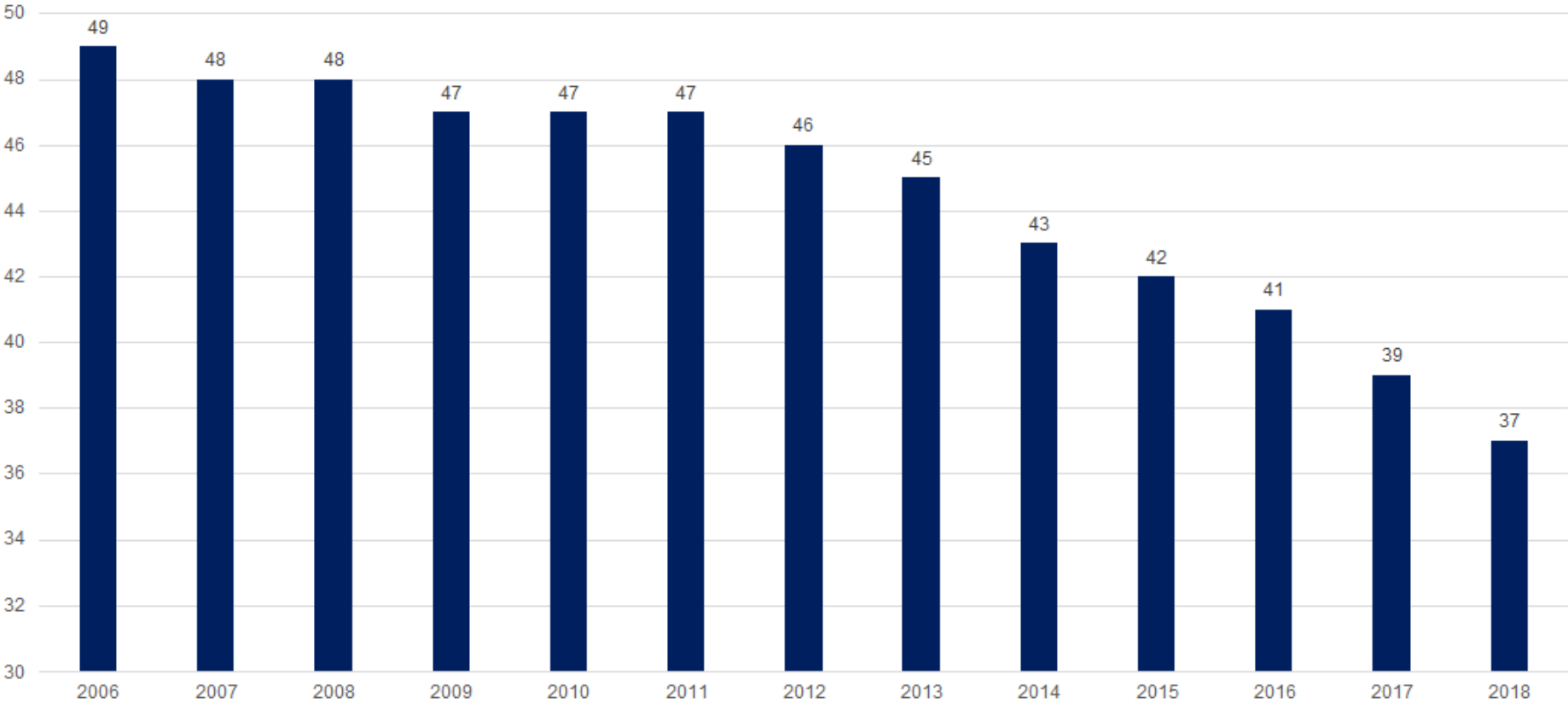


USA market share based on stated capacity
 Australian market share based on Company estimates of production

USA Brick Industry Consolidation

The rate of consolidation is accelerating

Total USA Brick Manufacturers

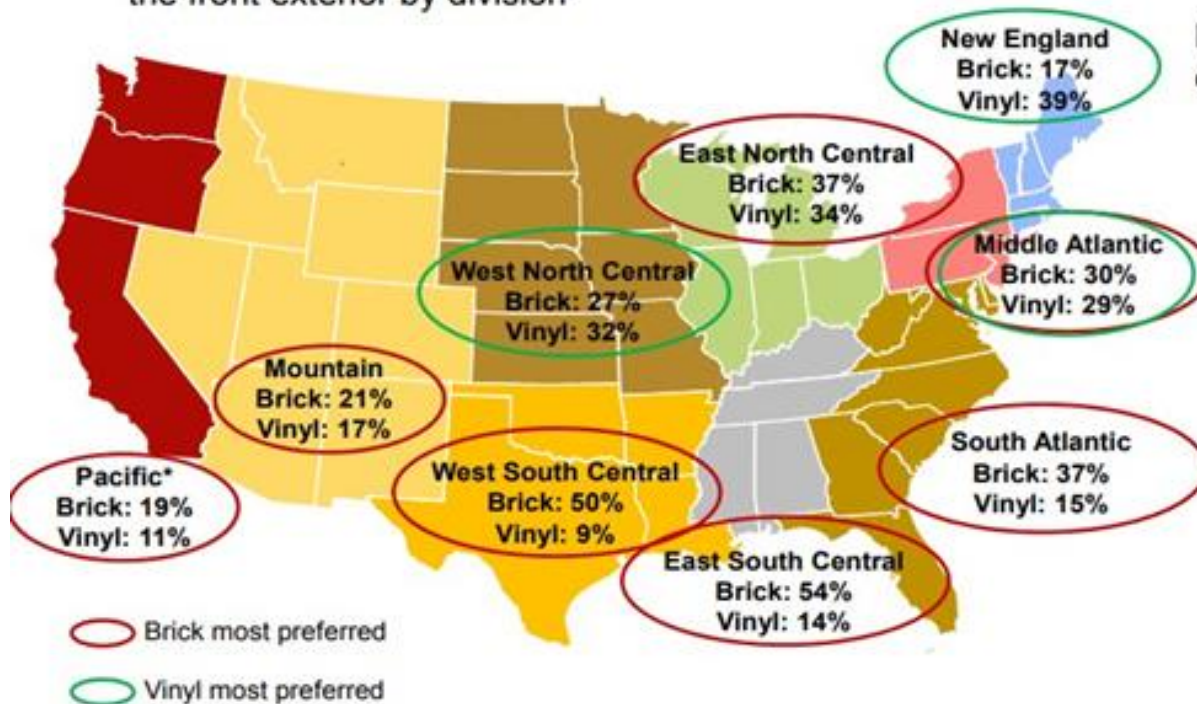


Source: Company estimates

Brick – Preferred in Most Locations

Southern USA has the highest preference for bricks

- Share of respondents who prefer brick or vinyl on the front exterior by division



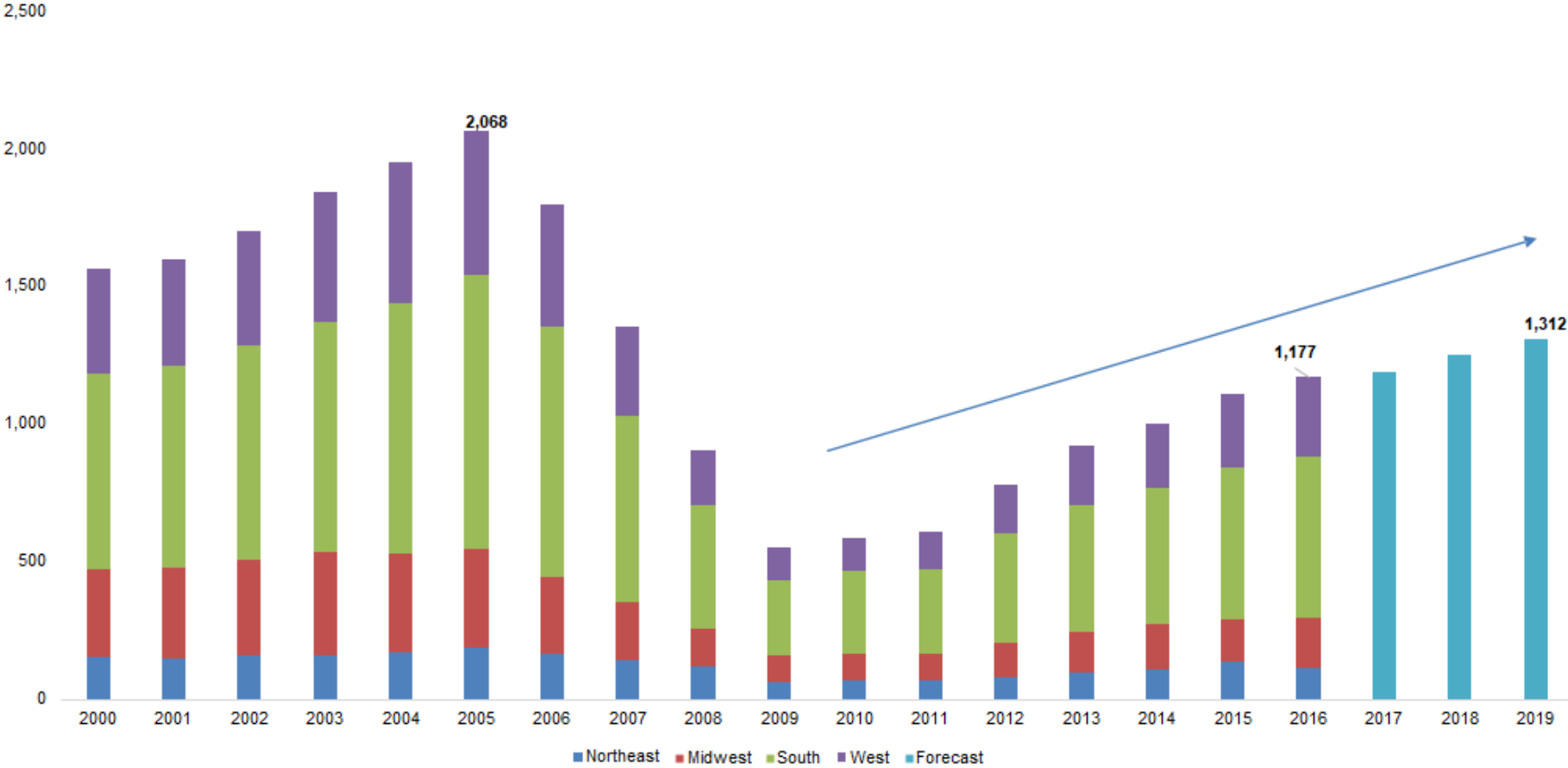
Most preferred materials by price expected to pay for a house:

- < \$ 150,000 house**
Vinyl, Brick, Stone and Stucco
- \$ 150,000 – \$ 249,000**
Brick, Vinyl Siding, Stone
- \$ 250,000 – \$ 499,000**
Brick, Stone, Stucco
- \$ 500,000 +**
Stone, Brick, Stucco

Source: Company estimates taken from various sources

USA Housing Market

USA Housing Permits

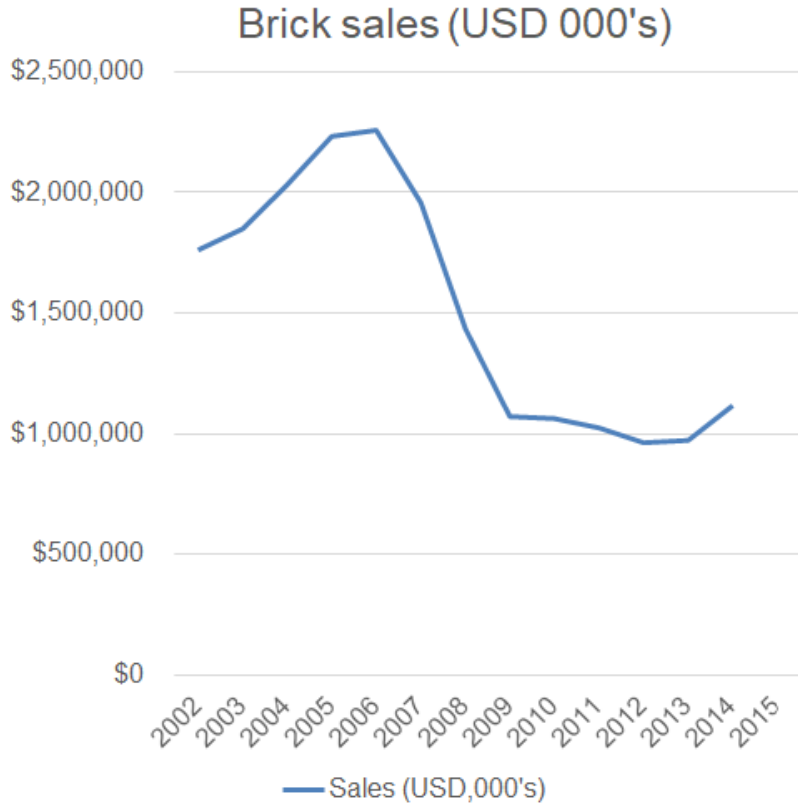
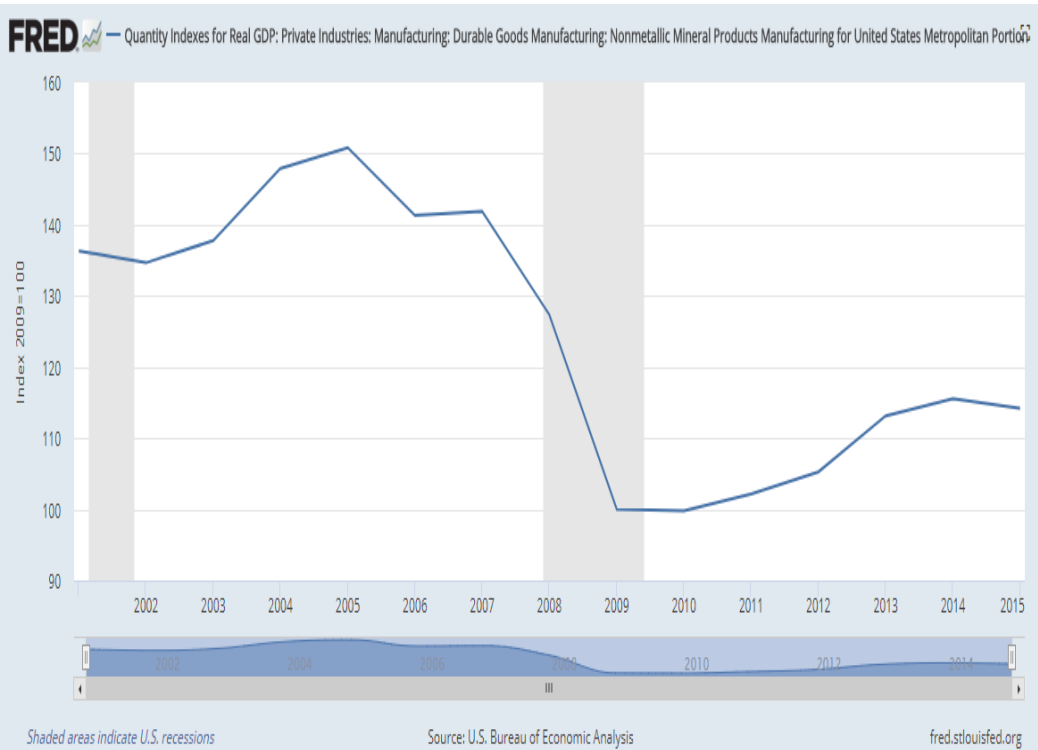


Source: NAHB/Wells Fargo Housing Market Index and U.S. Census Bureau

Brick Volume and Sales

Volumes are recovering, though slowly

- Non-metallic mineral products (including bricks) have increased from GFC lows



Source: Company estimates taken from various sources

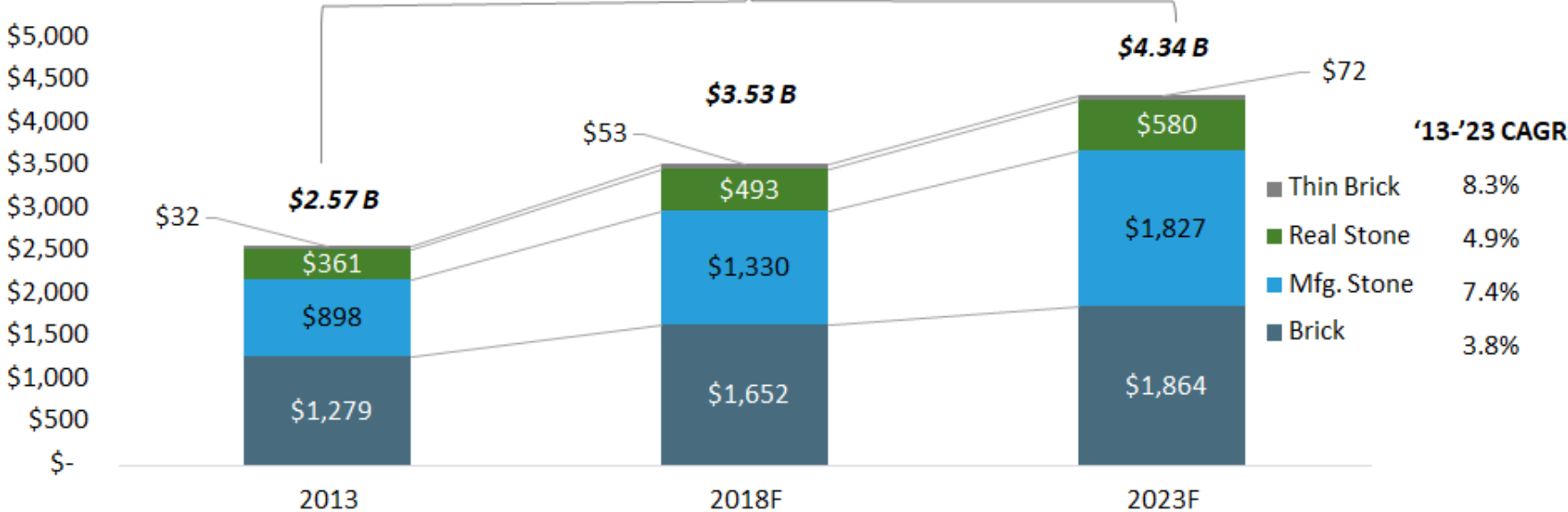
Brick and Stone Size and Growth

The masonry market is expected to grow ~70% from 2013 to 2023, providing ample opportunity for manufacturers and distributors of masonry products.

- The strongest growth areas are products like manufactured stone and thin brick, more than doubling over the forecasted time period. These products provide the look of traditional masonry while allowing easier physical installation, quicker install times, and less expertise required to do the installations. Strong growth in particular for thin brick is in commercial sectors while manufactured stone’s growth is primarily in residential applications as an accent to other siding material
- While traditional masonry products such as brick and real stone are declining in usage relative to other siding materials, this decline is minor overall and brick and real stone will still provide additional market opportunity over the next five years

Masonry Market Size by Material in Millions of 2017 Dollars

CAGR: 5.4%



Source: Company estimates taken from various sources

Residential Applications

Brick and stone materials continue to play an influential role in single and multi-family home construction in the United States. Used in exterior and interior applications, masonry products come in a nearly unlimited variety of size, shape, and color

- The usage of brick in new home construction remains strong as brick can be used as a primary exterior material, secondary feature, or interior wall accent
- Nearly 80% of all bricks produced in the United States are used in the construction of new homes, with a very small percentage going towards remodel
- Consumption of bricks can vary state by state. Southern US states, such as Georgia and Texas, are the biggest markets for brick



- Manufactured stone compliments masonry and non-masonry exterior wall materials in a variety of applications. Used mostly as a secondary wall material for highlighting specific aspects of a home, stone provides additional value in new homes
- After several years of high levels of customer demand, the manufactured stone market, is nearly the size of the brick industry, valued near \$1.2B USD
- Manufactured stone can be installed relatively quickly while providing any building a very unique look

Source: Company estimates taken from various sources

Commercial Applications

The continued development and use of brick and stone products has led to more national chain restaurants designing and remodeling their buildings to incorporate higher value masonry materials



- Real Stone can be used as a wall accent or as the primary wall material. Mixed cladding walls, as seen above, are becoming more popular in commercial and residential applications

- Commercial buildings like retail spaces, offices, and restaurants continue to use masonry material on interior and exterior applications due to its superior durability and desire to blend in with the local community
- In terms of costs, brick and stone are more affordable options compared to materials such as metal panels and glass walls

- Brick and stone products are being used in restaurants and hotels more frequently. National chains such as Taco Bell, Target, and Marriott Hotels now cover their exterior walls primarily or partially with brick and stone
- Another trend affecting commercial buildings are national design considerations. Once a company has decided on the look of the building, the same size and color of the masonry materials being used has to remain the same. This is changing the way masonry products are being sourced, shifting from local suppliers to national providers



Source: Company estimates taken from various sources

Hardscape and Thin Brick Applications

Large commercial buildings such as recreational venues and parking garages are beginning to incorporate the look of brick through thin brick applications in order to blend in with the surrounding community

- New sports stadiums, large venues, and some manufacturing and warehouse buildings are using Thin Brick in addition to precast, metal, and glass walls. Having a brick or stone look allows the facility to more easily blend in with the surrounding neighborhood. Recent examples include Little Caesar's Arena in Detroit and Lucas Oil Stadium in Indianapolis
- Thin Brick can be installed more quickly through precast/tilt-up processes, metal panel spacers, or mortar/tile approaches. Having a wide variety of installation methods has allowed Thin Brick to overcome slower, more expensive installation hurdles










Source: Company estimates taken from various sources

- Stone hardscape, consisting mostly of sandstone, limestone, granite, and bluestone is a \$565M market in the United States
- Primary applications include outdoor fireplaces, patios, pathways, and more. Most stone for hardscapes is sold through specialty stone distributors
- Brick pavers, representing only 2% of total hardscape materials, is a \$60M business. The majority of bricks go towards driveway and pathway construction

Lifetime Value Cost Comparison

Masonry products are more expensive to install than other residential cladding options; however, their durability is such that they last 3-10x as long as competing materials.

Material	Installed Cost of Cladding for Wall Area per Square Foot in Residential Applications	Required Maintenance	Lifetime Expectancy	Estimated Life Cycle Cost
Vinyl	 \$3.05	5-10 years	10-20 years	\$.20
Fiber Cement	 \$5.50	10-15 years	20-30 years	\$.22
Eng. Wood	 \$6.00	10-15 years	20-30 years	\$.24
Stucco	 \$10.00	Minor cleaning, crack and separation repair if it arises	15-25 years	\$.50
Brick	 \$12.00	Minor cleaning every few years	100+ years	\$.12
Mfg. Stone	 \$14.00	Minor cleaning every few years; mortar repair if it arises	50+ years	\$.28
Real Stone	 \$25.00	Infrequent cleaning, mortar repair when needed due to settling	100+ years	\$.25

Source: Company estimates taken from various sources

Competitive Landscape: Geographic Penetration

Brick manufacturing plants are highly concentrated in the Midwest, Northeast, and Southern regions around clay deposits and major demand area. Real Stone plants tend to be located more in the West near quarries, with Manufactured Stone plants more evenly distributed throughout the United States

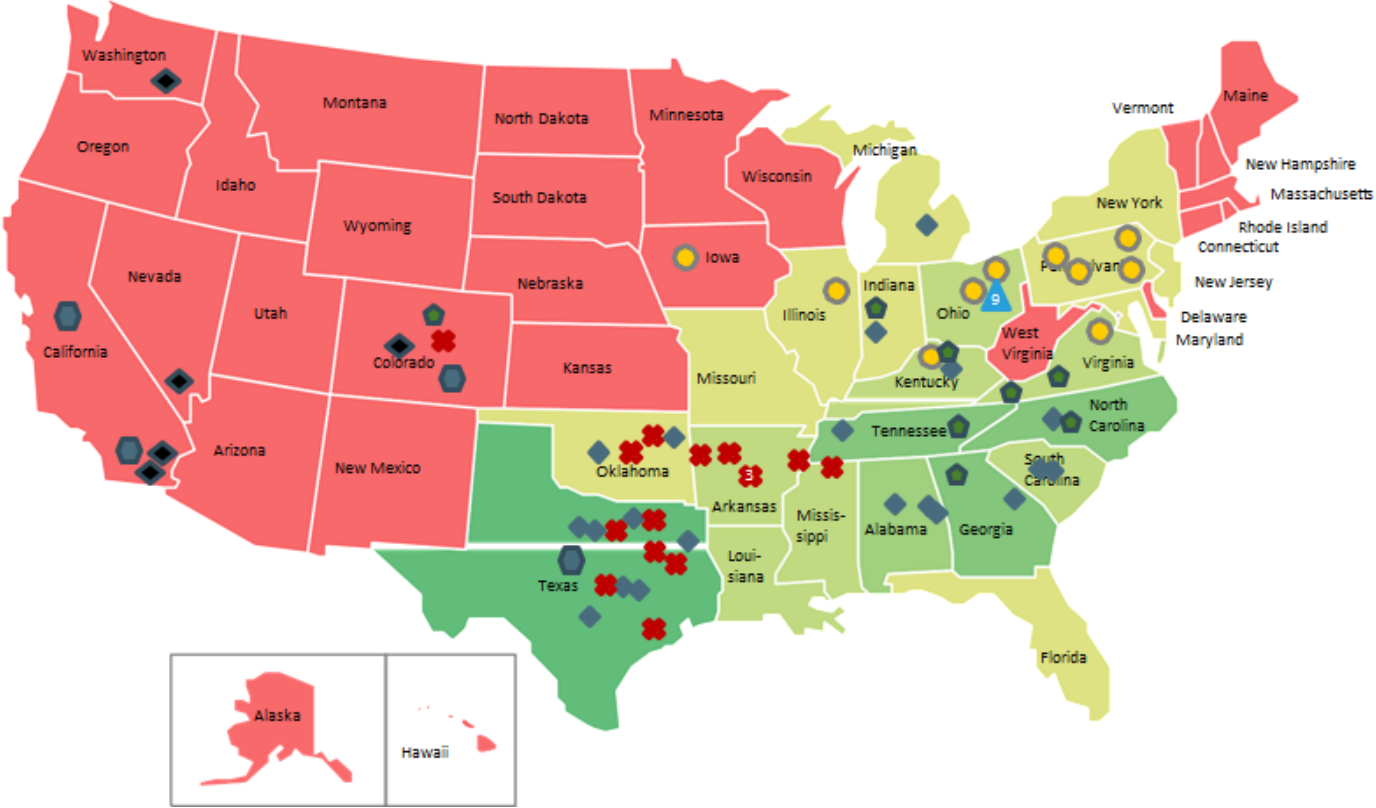
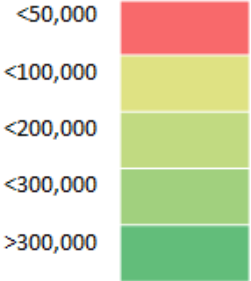
Manufacturing Facilities by Supplier (not exhaustive)

- Acme ✿
- Meridian* ◆
- Belden ▲
- General Shale* ◆
- Glen-Gery ●
- Eldorado ◆
- Coronado ◆

Geographic Footprint of Key Brick and Stone Competitors

Pre Brickworks market entry

2017 Brick Shipments Heat Map ('000s)



Source: Company estimates taken from various sources
 Note: Boral and General Shale Plant locations represent just those facilities engaged in the manufacture of bricks

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