



13 September 2016

The Manager, Listings  
Australian Securities Exchange  
ASX Market Announcements  
Exchange Centre  
20 Bridge Street  
Sydney NSW 2000

**Boral Limited**  
Level 3, 40 Mount Street  
North Sydney NSW 2060  
PO Box 1228  
North Sydney NSW 2059

T: +61 (02) 9220 6300  
F: +61 (02) 9233 6605

[www.boral.com.au](http://www.boral.com.au)

Dear Sir

We attach copies of slides on Boral's US operations being presented to members of the investment community in San Antonio on 13 September 2016.

Yours faithfully

A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Dominic Millgate  
**Company Secretary**



# BORAL USA

Investor Day 2016, San Antonio

13 September 2016

Cladding



Roofing



Light Building Products



Materials



BORAL USA INVESTOR DAY 2016

## Our Strategic Priorities

Transforming Boral



**Our vision is to transform Boral for performance excellence and sustainable growth**



Our goals are to deliver:

- **World class health and safety outcomes based on Zero Harm**
- **Returns that exceed the cost of capital through the cycle**
- **More sustainable growth**

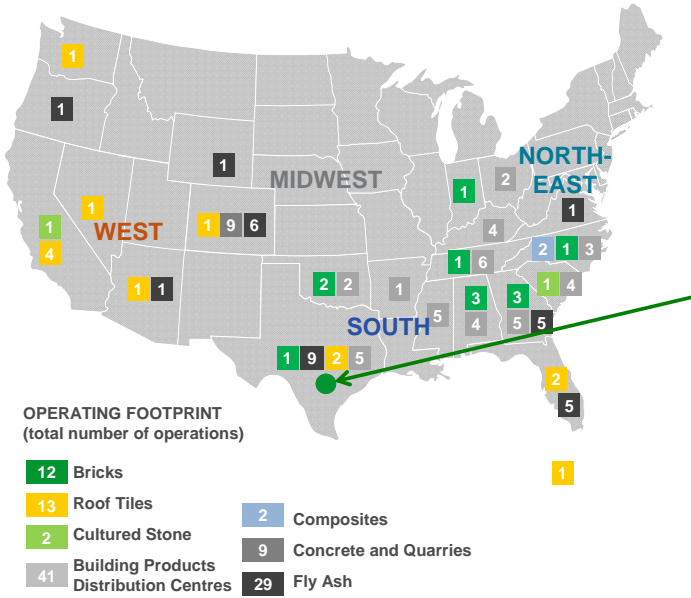
Boral Australia <sup>1</sup>	USG Boral	Boral USA
<ul style="list-style-type: none"> <li>• Maintain and strengthen our leading, integrated construction materials position and optimise returns across all businesses</li> <li>• Benefits from significant pipeline of major roads and infrastructure work</li> </ul>	<ul style="list-style-type: none"> <li>• Organic growth over the medium and long term through:               <ul style="list-style-type: none"> <li>○ Innovation</li> <li>○ Asian economic growth</li> <li>○ Product penetration for interior linings and related products</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Growing earnings through cyclical market recovery and new product development</li> <li>• Disciplined approach to assessing strategically aligned M&amp;A opportunities</li> </ul>

1. From 1 July 2016 Boral Australia comprises the Construction Materials & Cement and Building Products divisions



## 2016 US Site Visit – San Antonio, Texas

Texas is a Brick, Fly Ash and Roofing state, where Boral’s Fly Ash based R&D work began



### San Antonio, Texas

- Head office of Boral’s Fly Ash business
- Boral Material Technologies (BMT) R&D centre started in San Antonio, in 1998
- BMT’s early R&D work underpins the development of Boral’s Fly Ash based composite building products
- Boral’s newest research facility, *The Boral Discovery Centre*, opened in San Antonio in 2016
- Accordingly, today’s presentations will cover Boral’s US portfolio, with greater emphasis on **Fly Ash, Composites (Trim & Siding) and Innovation with an update on Bricks, Stone and Roofing**



## Boral USA Schedule Tuesday, September 13

Time	Event	Speaker
8:30 a.m. – 11:00 a.m.	Presentations	David Mariner, President & CEO, Boral USA US Management Team
11:15 a.m. – 12:00 p.m.	Lunch	
12:00 p.m. – 12:30 p.m.	Depart to Boral Discovery Center	
12:30 p.m. – 2:00 p.m.	Safety Briefing and Tour	<ul style="list-style-type: none"> <li>▪ Joel Charlton</li> <li>▪ Russell Hill</li> <li>▪ Discovery Center Team</li> </ul>
2:00 p.m.	Depart	



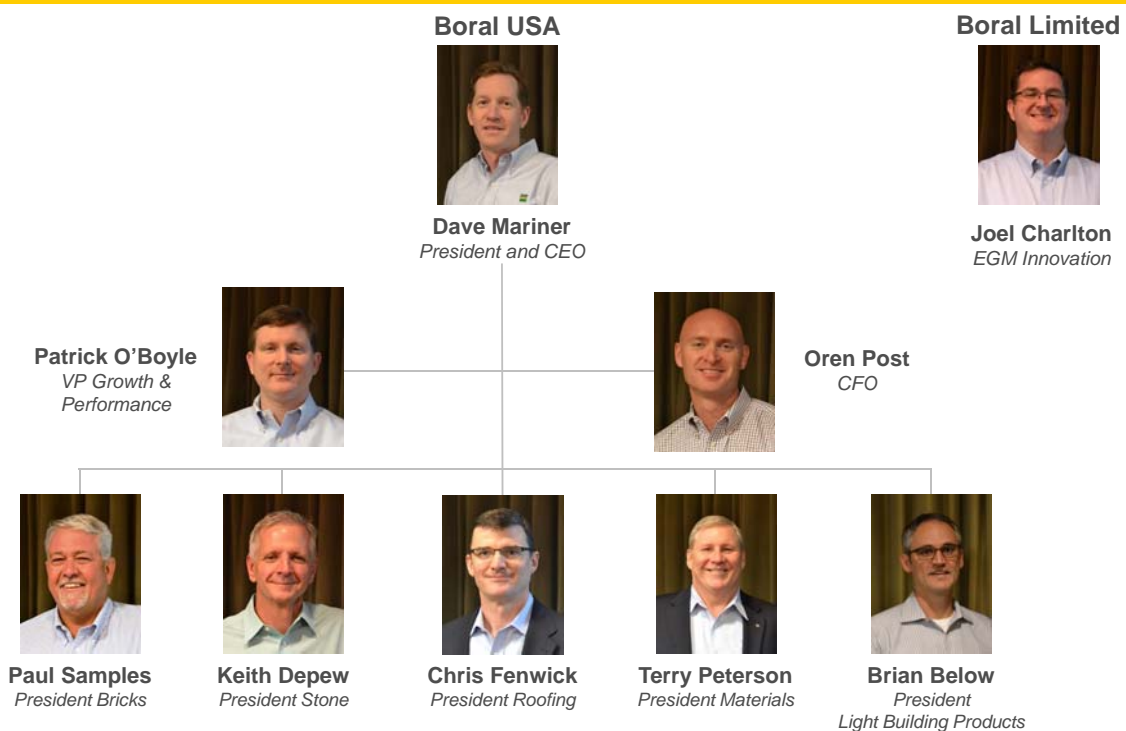
# Content

## ▪ Boral USA Overview

- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, Light Building Products
  - Stone, Roofing
  
- Appendix
  - Economic and Housing Update
  - Financial Results



# Boral USA Team

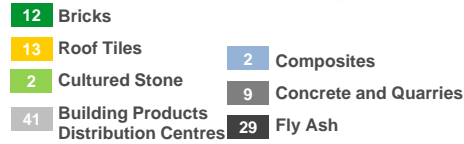
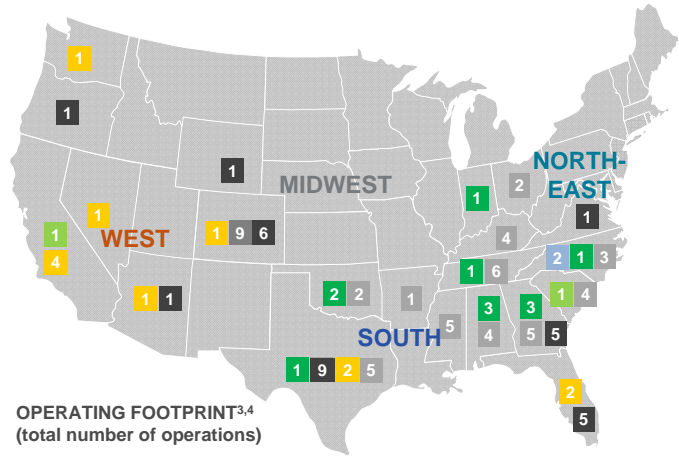
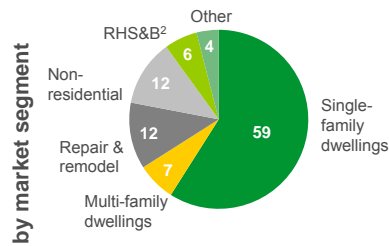
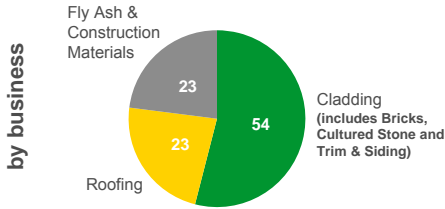




# Boral USA has Leading Market Positions and a National Footprint

#1 in Brick, Clay Tile, Concrete Tile and Manufactured Stone; #2 in Fly Ash;  
#3 in Construction Materials in Denver, Colorado

## Share of Revenue<sup>1</sup>, %



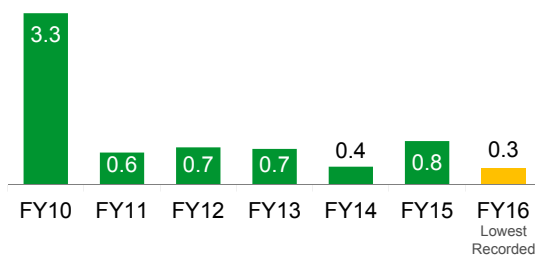
- Based on split of FY2016 external revenue for Boral USA
- Roads, highways, subdivisions and bridges
- SOUTH consists of AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, WV, VA | NORTHEAST consists of CT, MA, ME, NH, NJ, NY, PA, RI, VT | MIDWEST consists of IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI | WEST consists of AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY. States italicised in green are the states in which Boral operates and are included in Boral's US Revenue chart.
- Does not include Forterra Bricks Assets



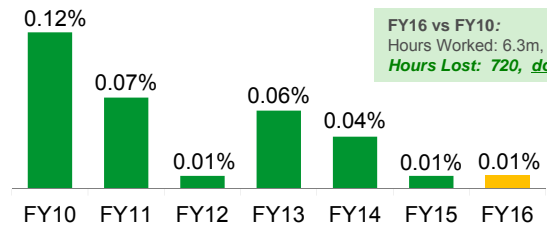
# Zero Harm Safety Culture

Recordable Incident Frequency Rate down 14% to 5.2 – all-time low for Boral

## Employee and Contractor LTIFR<sup>1</sup>

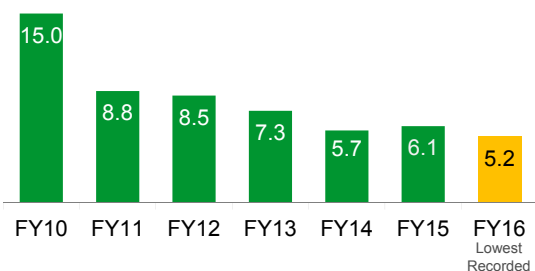


## % of Total Hours Lost to Injury



**FY16 vs FY10:**  
Hours Worked: 6.3m, up 89%  
Hours Lost: 720, down 77%

## Employee and Contractor RIFR<sup>2</sup>



- Continued focus on risk identification, employee engagement
- FY16 - record number of hazard awareness and near miss reports, 19% higher than FY15
- FY16 - best year in Boral USA's safety performance
- Goal is ZERO HARM TODAY

1. Lost Time Injury Frequency Rates (per million hours worked)  
2. Reportable Injury Frequency Rates (per million hours worked)

## Content



- Boral USA Overview
- Strategic Update
  - **US Overview**
    - Bricks Joint Venture
    - Fly Ash, Innovation, Light Building Products
    - Stone, Roofing
- Appendix
  - Economic and Housing Update
  - Financial Results

## Boral USA

Continued progress in all business units



## Boral USA



- ✓ **Opened new US\$4m Innovation Factory** in San Antonio, Texas
- ✓ **Added manufacturing line for Boral Versetta Stone®** in Napa, California
- ✓ **US\$6.2m acquisition of roof tile making equipment and distribution yard** in Texas
- **Increase manufacturing capacity at Boral TruExterior® Siding and Trim facility** in Salisbury, North Carolina
- **Continuing to assess strategic M&A opportunities**, with a disciplined approach

## Cladding



## # 1 in Bricks, Stone, Stucco

- ✓ Announced Bricks Joint Venture
- ✓ Designed auto de-molding process, enhancing safety and increasing labor efficiency
- Generating margin improvement through new product launches
- Lowering reliance on housing and fixed cost manufacturing

## Light Building Products



## Boral Composites (poly-ash) Trim &amp; Siding, Versetta®

- ✓ New Versetta capacity in Napa leading to 10 new distribution outlets
- ✓ Added ~150 stocking dealer locations to reach ~650 total
- ✓ Added 120,000 sq ft warehouse and processing facility for Boral Composites
- Implementing accelerated sales plan
- Growth capital project to double production capacity for composite products

## Roofing



## #1 in Concrete and Clay Roof Tile

- ✓ Completed closure and sale of Gilroy, CA facility
- ✓ Moved light weight product line to Stockton, CA
- ✓ Price increasing as demand grows
- Upgrading line in Lake Wales, FL to better serve customers
- Optimize SG&A positions for increased profitability

## Fly Ash &amp; Materials



## #2 in Fly Ash, #3 in Materials (Denver)

- ✓ Completion of Franklin St. ready mix concrete plant
- ✓ Opened new Holton/Morton quarry
- ✓ Opened new sand and gravel aggregate operation in Ft. Lupton, CO
- Maintaining volumes despite disruptions in energy industry
- Solid price performance in competitive markets



# Strategic Roadmap

Growing earnings through cyclical market recovery, product development, and continuing to maintain a disciplined approach to strategically aligned M&A opportunities

1

Optimize portfolio to maximize profitability

- Continue focus on margin enhancement, i.e. price improvement, operating cost improvements
- Divest non-core construction materials business in Colorado when appropriate
- Drive increased value through recently announced Bricks Joint Venture

2

Invest in innovation

- Grow capabilities of Innovation Factory
- Deliver new products to market
- Develop new platforms
- Invest in new composite manufacturing technology

3

Strategically aligned M&A opportunities

- Identify opportunities that align with Boral's portfolio and strategic objectives, including:
  - Ability to diversify Boral's market exposures beyond single family housing
  - Opportunities to leverage emerging trends, targeting products early in life cycle
  - Less capital intensive businesses, with a more flexible, variable cost structure
  - Earnings accretive opportunities



# Executing our Strategic Roadmap

Optimizing portfolio through the Bricks JV while leveraging our Innovation Factory to strengthen Light Building Products (LBP)

## Bricks Joint Venture



- Combined proforma FY2017 annual EBITDA of ~US\$25-\$30 million
- Delivers cost synergies ramping up to ~US\$25m+ by year 4
  - ✓ Plant network optimisation
  - ✓ Improved utilisation of freight and distribution
  - ✓ Streamlined selling, marketing and administration costs
  - ✓ Procurement cost savings

## Evolution of LBP from Boral's Fly Ash Heritage





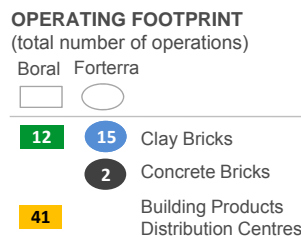
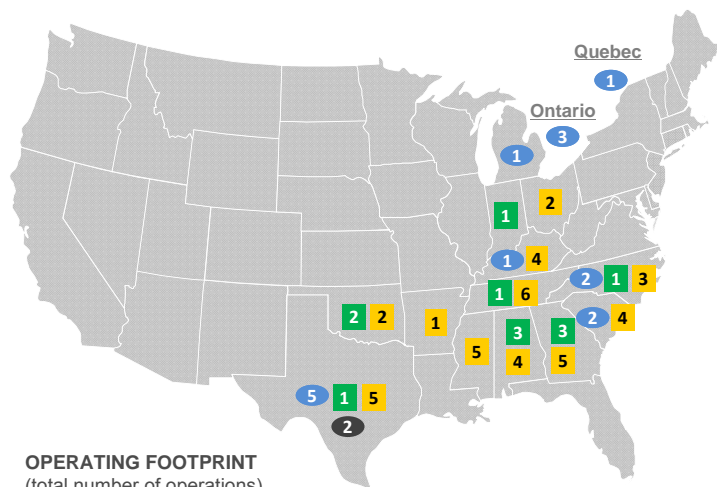
# Content

- Boral USA Overview
- Strategic Update
  - US Overview
  - **Bricks Joint Venture**
    - Fly Ash, Innovation, Light Building Products
    - Stone, Roofing
- Appendix
  - Economic and Housing Update
  - Financial Results



# Bricks Joint Venture Overview

- **Combined FY2017 annual proforma EBITDA of ~US\$25-\$30 million**
- **2,639 million SBE** (standard brick equivalent) **manufacturing capacity**
  - 2,291m SBE in current operation
  - 348m SBE mothballed
- **27 clay brick manufacturing operations**  
(including 4 mothballed operations)
- **2 concrete brick manufacturing operations**  
(including 1 mothballed operation)
- **41 Building Products Distribution Centres**
- **~1,380 combined employee base**







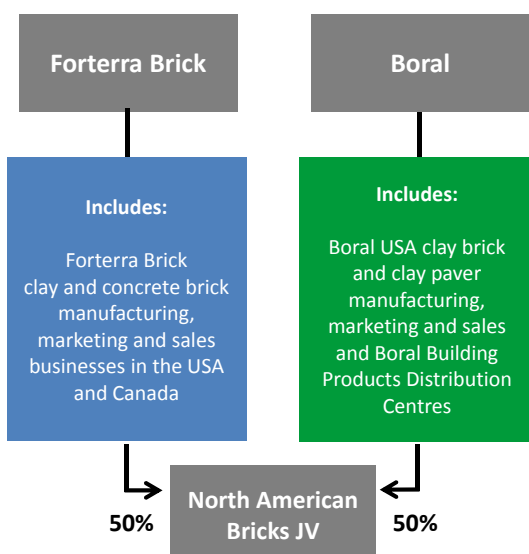
## Transaction Rationale

- Create a more efficient and better positioned business to compete in the broader cladding market through the cycle
- Optimise combined manufacturing capacity and leverage distribution network to better serve customers
- Deliver cost synergies, which are expected to be ~US\$25 million+ p.a. by year 4 through:
  - Plant network optimisation
  - Improved utilisation of freight and distribution
  - Streamlined selling, marketing and administration costs
  - Procurement cost savings

15



## Transaction Structure



- Ownership will be 50/50
- Jointly represented Board
- Joint venture to be co-managed by Boral and Forterra
- No upfront cash
- JV is expected to be self funding

16



# Content

- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - **Fly Ash**, Innovation, Light Building Products
  - Stone, Roofing
- Appendix
  - Economic and Housing Update
  - Financial Results



# Fly Ash Background

## History:

- Romans used volcanic ash in building construction
- In 1937, fly ash used in concrete construction



## Production:

- Created in coal-fired power plants
- Fine particles rise with flue gasses
- Particles collected in bag house



## Quality and Types:

- Quality depends on coal source, combustion process
- Two types:
  - Class C – self cementing
  - Class F – requires activator





# Utilities' Coal Combustion Produces Ash

## Utilities



## Coal Basins<sup>1</sup>

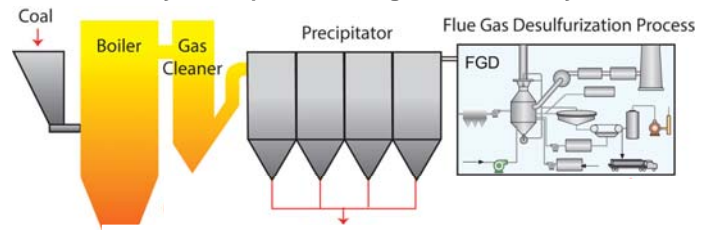


## Coal Fired Power Plants<sup>1</sup>



- Coal makes up ~38% of total fuel generation in the U.S.
- Key coal supply regions include Central Appalachia and Wyoming's Powder River Basin
- ~500 power plants using coal
- ~600m tons of coal were used in 2016

## Fly ash captured in "bag house" of utility



### Fly Ash

*Pulverized coal is burned to generate electricity. The fine particles of coal residue "fly up" into the stacks with flue gases and are removed by electrostatic precipitators and fabric filter bag houses.*

1. Energy Information Administration

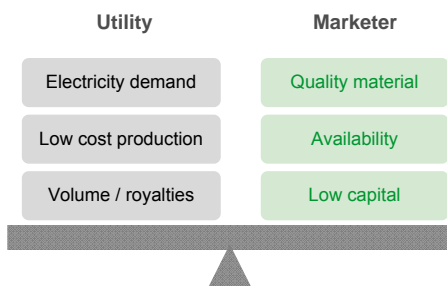


# Marketer's Role

Marketers serve two customers: 1) utilities - motivated by low cost electricity production; 2) end user - focused on quality, cost, and availability

1

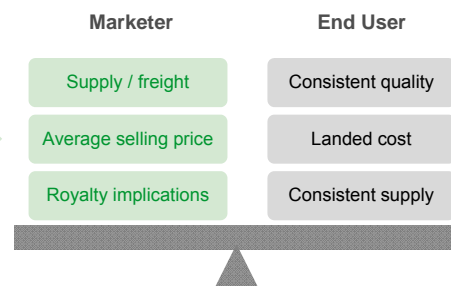
## Utilities



- Utilities motivated by production costs and demand
- Marketers motivated by:
  - Manageable royalties and minimum volumes
  - Supply availability (seasonality)
  - Consistent quality

2

## End Users



- End users motivated by:
  - Low landed cost, single sourced supply, consistent quality
- Marketers motivated by:
  - Consistent supply, competitive freight

*Marketer's Value  
Connect the  
Utility to End User*



**Boral is a leading Fly Ash marketer in the US**



## Multiple Applications for Ash

Boral has four key areas for growth; cement / ready mix represents the largest opportunity while engineered products provide significant upside

### Applications



Cement and Ready Mix



Asphalt and Mineral Filler



Engineered Products



Site Services and Disposal

### Market Opportunity

- **Cement and Ready Mix:** Cement substitute in ready mix; upside opportunity as cement substitution pushes levels above 17%<sup>1</sup>
- **Asphalt and Mineral Filler:** Applications tied to infrastructure; upside exists by expanding government specifications
- **Engineered Products:** Downstream filler for products such as **Boral Composites**; upside includes expanding into new applications and industries leveraging **Boral Innovation Factory**
- **Site Service and Disposal:** Service allows marketer to build long term relationship with utility; source specific driven by geography and ash quality

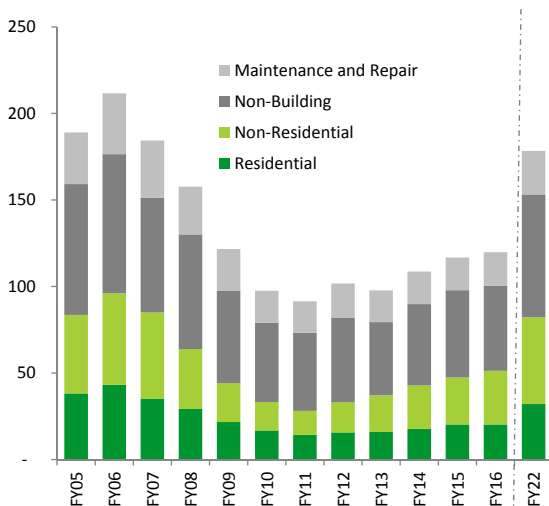
1. Average replacement of 17% in ready mix producers who use fly ash; overall industry average is 10%



## Cementitious Materials<sup>1</sup>: Size and Segment

The cementitious market is currently ~120 million tons, and forecast to grow to ~180m tons by FY2022

**Market Size<sup>2</sup>**  
(millions of tons)



**Market Segments**  
(type)

#### New Construction



- New Res foundations
- Non-Res foundations, sidewalks
- ~41% of US demand

#### Infrastructure



- Roads / Highways
- Oil Field
- Soil Stabilization
- ~59% of US demand

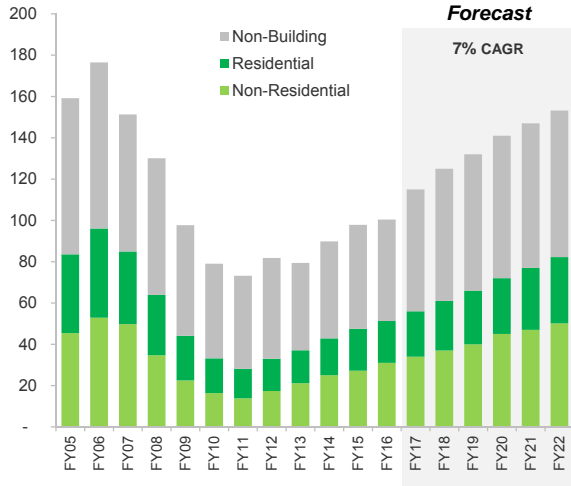
1. Cementitious materials includes cement, fly ash, slag, limestone fines and silica fumes  
2. NAHB, Moody's, Dodge, Management Estimates



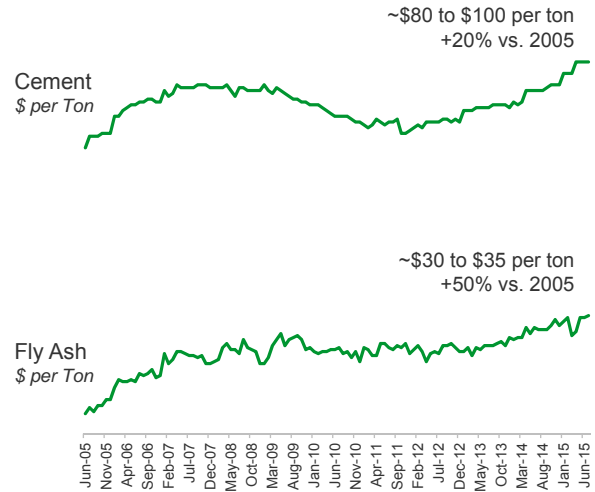
# Cement Demand Drives Fly Ash Opportunity

Cement consumption in ready mix will drive significant increase in Ash volume; Ash remains competitively priced against cement

**Cement Demand<sup>1</sup>**  
(millions of tons)



**Cement and Fly Ash Pricing<sup>2</sup>**



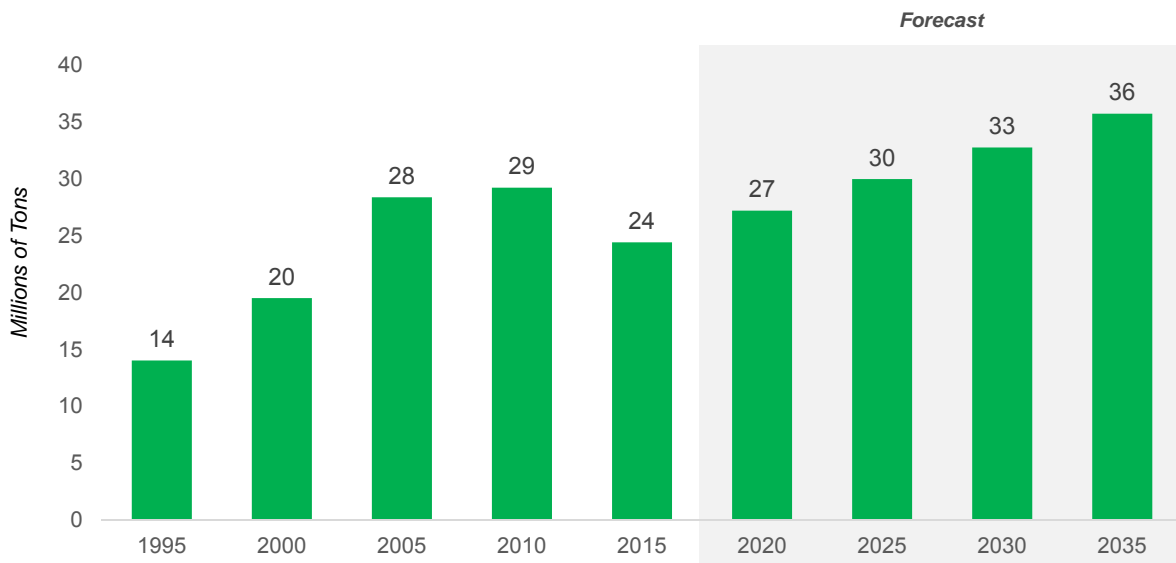
1. Portland Cement Association: 2015 Market Intelligence Report  
2. Estimated industry Fly Ash ASP, Cement ASP: Bureau of Labor Statistics



# Fly Ash Demand Continues to Grow

Fly Ash demand expected to grow over the next 20 years driven by cement, ready mix and other beneficial use (fillers)

**Fly Ash Demand<sup>1</sup>**



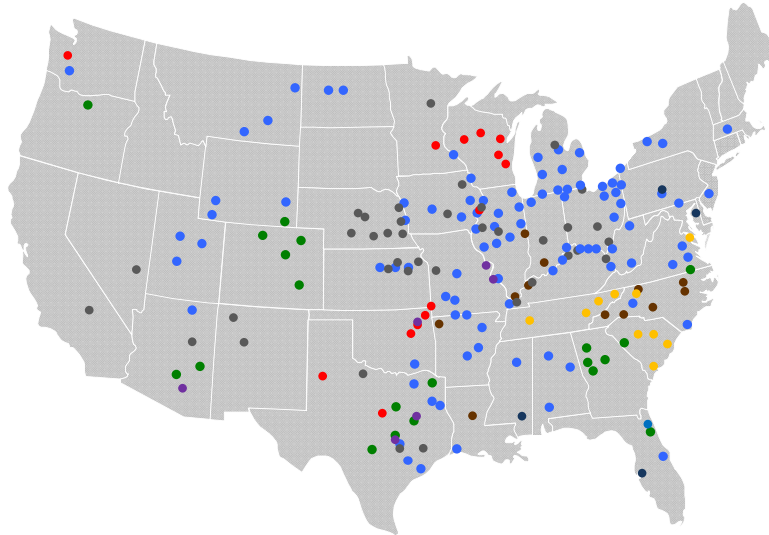
1. The American Coal Ash Association: Key Findings 2015 Coal Combustion Products; Demand for all products, including ready mix concrete  
2. Increase in production in 2005-2010 driven by concrete oil field demand during last business cycle; decline through 2015 driven by lower construction activity during economic recovery



# Landscape of Marketers

Multiple marketers primarily focused in the East and the Midwest

## Fly Ash Marketers<sup>1</sup>



### Select Marketers

- Boral
- Headwaters
- SEFA Group
- Separation Technologies
- Lafarge
- Mineral Resource Technologies
- Charah
- Others

1. Management estimates as of 2015

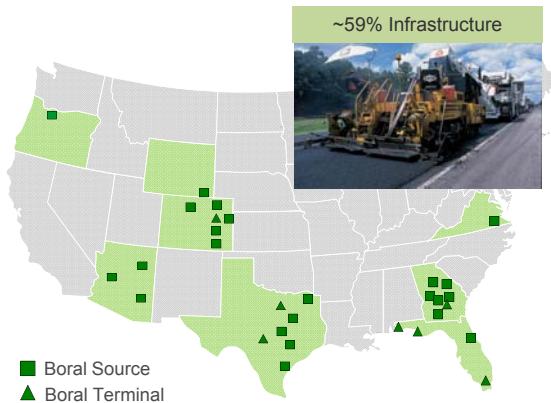


# Fly Ash: Strategic Intent

Secure existing ash supply, obtain additional supply, and invest in storage; improve returns with continued recovery of construction market

### Business Overview:

- #2 national fly ash player, regionally focused in Texas, Georgia, Florida, and Colorado
- Pricing influenced by cement
- Opportunity is in new geographies, expanded supply, expanded storage, distribution, and new product applications



### Industry Structure and Business Road Map

#### Industry Structure and Outlook

- Category Size (mid-cycle) US\$1.2b
- Market Exposure Infrastructure / new construction
- Core market is ready mix / infrastructure
- Business heavily tied to Texas, Georgia, Florida
- Growth potential in new applications

#### Organic Strategy

- Continue to price competitively with cement
- Pursue effective management and growth of supply
- Leverage high value fillers

#### Innovation Strategy

- Sustainable Development: Product Applications



Bottom ash stockpile – San Antonio



Boral Site



# Fly Ash: Business Highlights

Expansion into new uses and engineered applications has improved the business's performance through the cycle

## 1. Safety

- LTIFR<sup>1</sup> rate from 2.8 in FY15 to zero in FY16
- MTIFR<sup>2</sup> rate from 8.5 in FY15 to 5.5 in FY16

## 2. SGA and Business Optimization

- Restructured organization
- Integrated shared services

## 3. Price and Margin

- ASP increases in last 4 years
- Influenced by cement price increases

## 4. Innovate for Beneficial Use

- Backing system for carpet / synthetic turf
- Fly Ash Beneficiation Optimization

1. Lost time injury frequency rate per million hours worked  
 2. Medical treatment injury frequency rate per million hours worked

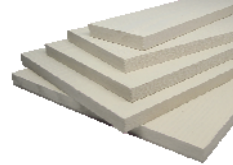
## Products / Services



Cement and Ready Mix



Asphalt and Mineral Filler



Engineered Products



Site Services and Disposal



Highly Reactive Pozzolans



Celceram®



# Fly Ash: Opportunities and Actions

Executing on key initiatives to grow supply, expand applications, and improve margins

## Opportunities

- Expand supply / storage
- Expand site service footprint
- New product applications
- Margin improvement initiatives

## Actions

- ✓ New supply contracts
- ✓ New storage facilities
- ✓ Expansion into new products / industries
- ✓ Price competitively based on market conditions

Ready Mix



Site Services



Storage





# Content

- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, **Innovation**, Light Building Products
  - Stone, Roofing
- Appendix
  - Economic and Housing Update
  - Financial Results



# Boral's Innovation Evolution



1,200 sq ft Bruanig Lab, adjacent to plant

**1998 – 2003**

Boral establishes R&D Center in 1998 (Monex)



15,000 sq ft Arion Pkwy Lab

**2004 – 2006**

Development of fly ash for new markets

**2007 – 2011**

R&D pivots towards building products



30,000 sq ft state-of-the-art Discovery Center

**2012 – 2016**

Innovation Factory established

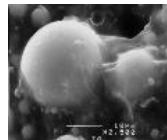
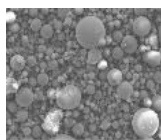


- Fly ash and coal combustion
- Cement and concrete
- Ash processing and beneficiation

- Ash processing
- Functional fillers
- Multiple filled resin systems

- Poly-ash technology created
- First-of-kind Boral Composites plant built
- TruExterior® trim introduced

- TruExterior® product extensions
- Transformational growth activities
- Light building products







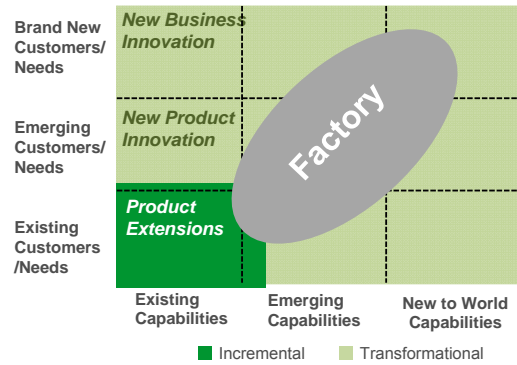
# Innovation Update

Discovery Center opens; Light Building Products (LBP) makes further progress

## Innovation Factory, San Antonio, Texas

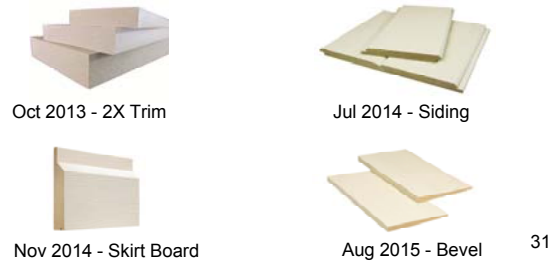


## Innovation Factory Strategy



- Discovery Center doors opened February 2016
- LBP continues strong growth
  - Creation of Innovation Factory has significantly increased Boral's patent portfolio
  - USA now has over 100 granted or pending patents

## Select Products



# Boral's Poly-Ash Technology Platform Proving its Versatility for Growth

## Poly-Ash Technology



Boral's proprietary Poly-Ash technology continues to open new category opportunities



# Boral's Poly-Ash Composites Business Aligning with Market Trends

Products designed to match market trends and align with Boral's growth strategy

	Key Driver	Impact to Customer and Business
External Market Driven	<b>Performance</b>	<ul style="list-style-type: none"> <li>Proprietary technology providing new value proposition</li> <li>Good aesthetics and high durability</li> </ul>
	<b>Ease of Use</b>	<ul style="list-style-type: none"> <li>Light weight</li> <li>Handles and works like wood</li> <li>Low labor</li> </ul>
	<b>Sustainable</b>	<ul style="list-style-type: none"> <li>High recycle content, reduced embodied energy, and low carbon footprint</li> <li>Durable, low maintenance</li> </ul>
Internal Business Driven	<b>Geographic Diversity</b>	<ul style="list-style-type: none"> <li>National appeal and very transportable</li> <li>Customizable</li> <li>Global potential</li> </ul>
	<b>Market Diversity</b>	<ul style="list-style-type: none"> <li>Opens new channels</li> <li>Distributed across residential, commercial and R&amp;R</li> </ul>
	<b>Growth Potential</b>	<ul style="list-style-type: none"> <li>Revenue potential</li> <li>Opportunity in &gt; \$1b markets</li> </ul>
	<b>Cost</b>	<ul style="list-style-type: none"> <li>High ROA business model</li> <li>Flexible manufacturing</li> </ul>

## Poly-Ash Platform

Current



Emerging



Exploratory



## Content

- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, **Light Building Products**
  - Stone, Roofing
- Appendix
  - Economic and Housing Update
  - Financial Results



# Light Building Products (LBP)

Transformational business with low assets and significant ROFE potential

## Light Building Products

- Combination of Boral Composites and Versetta®
- Growth platform based on proprietary technology
- High returns through cycle

Boral Composites



Versetta®



## Current US Portfolio

- High assets, high energy
- High fixed cost platform
- Residential focus
- Mature markets



## Light Building Products

- Disruptive, rapid growth technology
- Low asset base, low energy
- Variable cost based manufacturing
- Balanced market segments (repair and remodel and non-residential)
- Significant ROFE potential



# Light Building Products: Strategic Intent

Market leader for high performance, innovative, “green” product solutions across new residential construction, light commercial, and repair and remodel segments

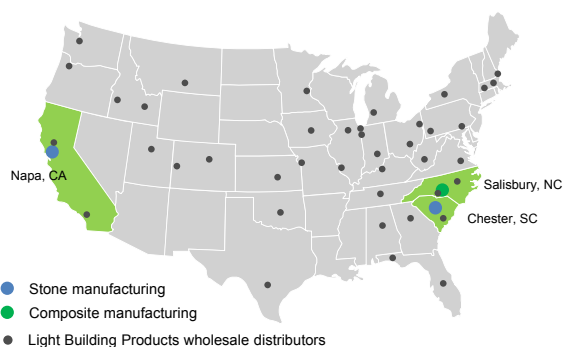
## Business Overview:

- Market adoption continues to be strong
- National presence with high R&R focus
- Opportunity to accelerate growth with sales and marketing investment

## Industry Structure and Business Road Map

Industry Structure and Outlook	
Category Size (mid-cycle)	US\$1.8b
Market Exposures	R&R, new residential and non-residential
<ul style="list-style-type: none"> <li>▪ High R&amp;R exposure</li> <li>▪ Composites gaining share vs. wood, trend to continue</li> <li>▪ Opportunity to extend technologies into new markets and platforms</li> </ul>	
Organic Strategy	
<ul style="list-style-type: none"> <li>▪ Continue driving 2 step distributor growth</li> <li>▪ Expand into new geographies</li> <li>▪ Optimize costs and performance</li> <li>▪ New products</li> </ul>	
Innovation Strategy	
<ul style="list-style-type: none"> <li>▪ Develop new products and categories</li> </ul>	

## Manufacturing and Distribution Network





# Light Building Products: FY2017 Commercial Initiatives

Multi-faceted strategy to increase market awareness

## Market Awareness

### National Initiatives

- PR and editorial coverage
- News releases
- Print and digital advertising

### Channel Initiatives

- Mobile training events
- Katz roadshow global sponsorship
- Dealer buy-in and engagement

### Content Marketing Initiative

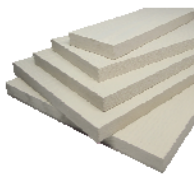
- Online content library
- Digital marketing assets
- Thought leadership and brand advocacy



# Light Building Products: FY2017 Commercial Initiatives (cont.)

New product launches are planned to deliver significant growth in FY2017

## Siding and Trim



Trim



Bead Board



Skirt Board



Siding Collection



2X Trim



Bevel Siding

## Versetta Stone Panel



Versetta



Accessories



Universal Corner



Mission Point



Graphite



# Light Building Products: Business Highlights

Emerging from start-up mode, LBP is quickly gaining scale and positioned to contribute meaningful earnings to the business over time

## 1. Safety

- 5 years without an LTI

## 2. Sales and Marketing

- Accelerating investment in SGA<sup>1</sup>
- Multi-pronged marketing initiative

## 3. Manufacturing

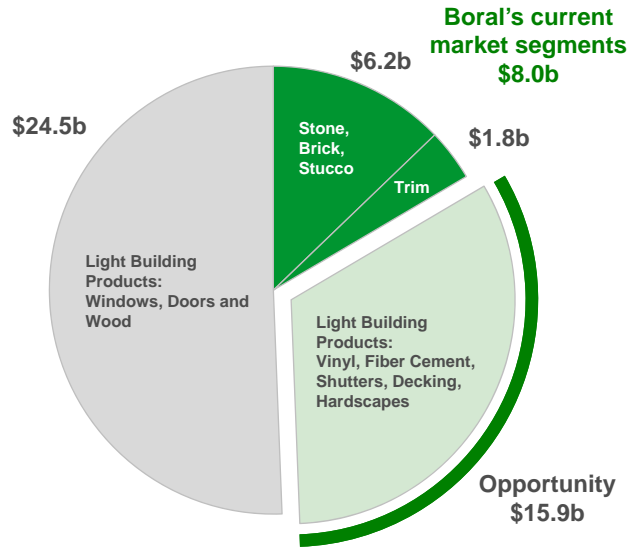
- Operating efficiency improvements
- Investing to double capacity in FY17

## 4. Products and Technology

- Siding products well received
- New product offerings launching in FY17
- Additional market opportunities available as technology platform expands, e.g. moulding, sheets/substrates, shutters etc.

## U.S. Cladding and Other Exterior<sup>2</sup>

(market size US\$)



1. Selling, general and administration  
 2. Market analysis, McGraw Hill housing starts, NAHB, management estimates



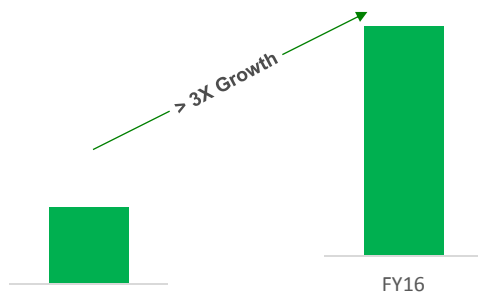
# Light Building Products: Opportunities and Actions

Executing on key initiatives to aggressively grow scale

## Opportunities

- Market adoption to continue rapid growth
- Manufacturing efficiency and cost improvements
- Timing of new manufacturing capacity
- Rapid product development

### LBP Revenue Growth (\$m)



## Actions

- ✓ Expansion of geographies, channels, segments
- ✓ Accelerated investment in sales and marketing
- ✓ Manufacturing initiatives deliver margin gains
- ✓ Opened Boral Composites Finishing Plant in FY16 Q2; Additional Boral Composites capacity coming online FY17 Q3
- ✓ Expanding product portfolio to full exterior wrap

Boral Composites Finishing Plant





# Content

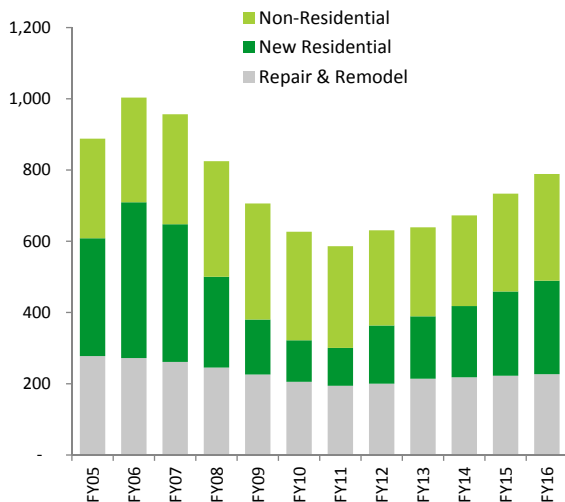
- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, Light Building Products
  - **Stone, Roofing**
- Appendix
  - Economic and Housing Update
  - Financial Results



## Stone: Size and Segment

Stone market is currently ~789m sq ft, includes natural and manufactured stone.  
 Non-residential accounts for ~38% of the industry and is more stable through the cycle

**Market Size<sup>1</sup>**  
 (millions of sq ft)



**Market Segments**  
 (type)

**New Residential**



- Tiered categories: premium, mid-grade, and economy
- Big builders driving trend
- High cyclical market segment

**Non-Residential**



- Exterior accents
- Interior accents
- Low cyclical market segment

**Repair & Remodel**



- Positive outdoor living market trend
- Perpetual interior refresh / remodel cycle
- Exterior accents

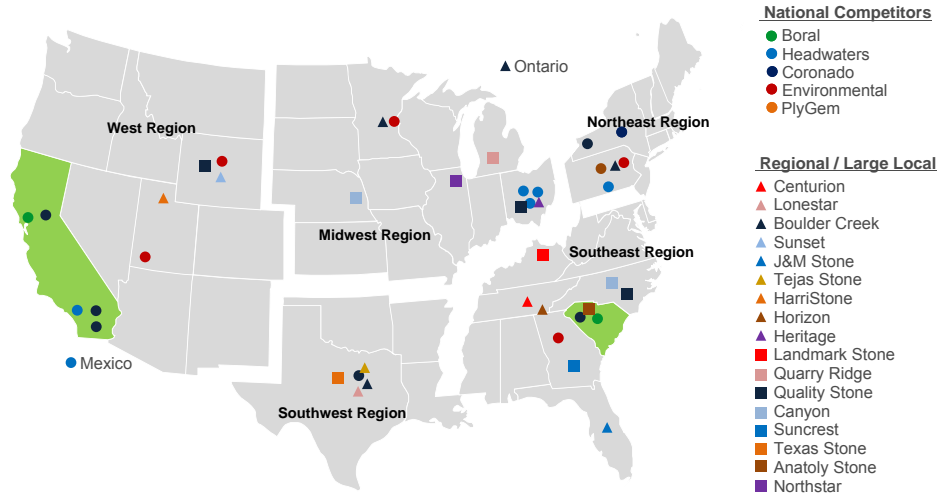
1. NAHB, Moody's, Dodge, Management Estimates



# Stone: Segment Leader in Manufactured Stone Veneer

East and West variable manufacturing capacity allows for flexing production based on demand

## Stone Veneer Manufacturers

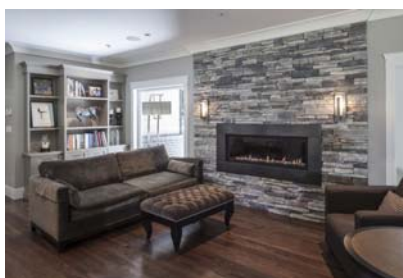


# Stone: Strategic Intent

Manufactured stone veneer leader across residential new construction, light commercial, and repair and remodel segments

### Business Overview:

- Leading brand manufactured stone veneer
- Diversified segment including new construction, interior/exterior, and repair and remodel
- Geographic exposure – US and Canada
- Opportunity in optimizing network, expanding sales offering (good, better, best), product development, innovation



Non-residential, multi-family, repair and remodel

### Industry Structure and Business Road Map

#### Industry Structure and Outlook

Category Size (mid-cycle)	US\$2.3b <sup>1</sup>
Market Exposures	New residential, Non-residential and R&R
<ul style="list-style-type: none"> <li>▪ US and Canada</li> <li>▪ Regional competition</li> <li>▪ Regionalized product preferences</li> <li>▪ Expanding market</li> </ul>	

#### Organic Strategy

- Execute – Better/Best
- Resale and accessory growth
- Continue new brand penetration
- Innovative product development

#### Innovation Strategy

- Sustainable development: process improvement



2015 Designer Cultured Stone Collection

1. Industry size includes natural stone



## Stone: Business Highlights

Innovative manufacturing solutions and execution of sales and marketing initiatives have contributed to significant year-over-year earnings improvement

### 1. Safety

- LTIFR<sup>1</sup> between zero and 0.8 for 5 years running

### 2. SGA and Business Optimization

- Sales optimization and efficiency
- E-Business, Web, Marketing

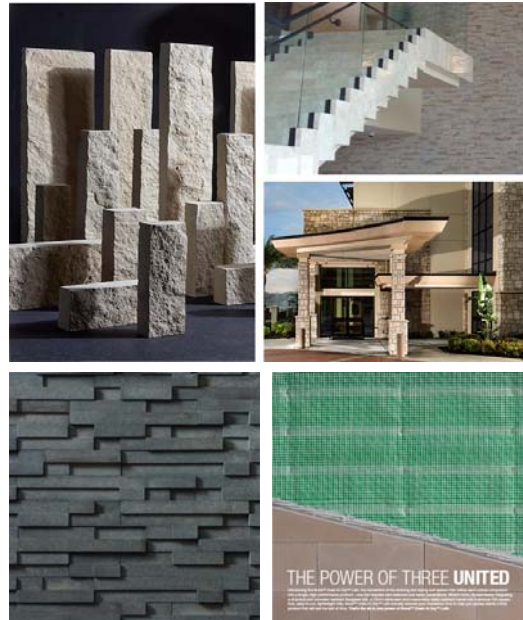
### 3. Manufacturing Optimization

- Increased operational performance
- Low cost automation

### 4. Price, Margin, and Resale

- 3 years of price improvement in competitive environment
- Continued gross margin improvement

## Product Line Expansion



1. Lost time injury frequency rate per million hours worked



## Stone: Opportunities and Actions

Executing on short and medium term growth strategy driving margin improvement

### Opportunities

- Continued focus on Zero Harm Today
- Optimized production ramp-up
- Margin focus
- Grow interior market space
- Accelerate growth

### Actions

- ✓ Safety strategy execution
- ✓ Flexible operations and fixed cost optimization
- ✓ Product development innovation
- ✓ Marketing excellence
- ✓ Accessory expansion

Black Rundle Pro-Fit® Alpine LedgeStone



Carbon - Pro-Fit® Modera™ LedgeStone



Drain-N-Dry Lath







# Content

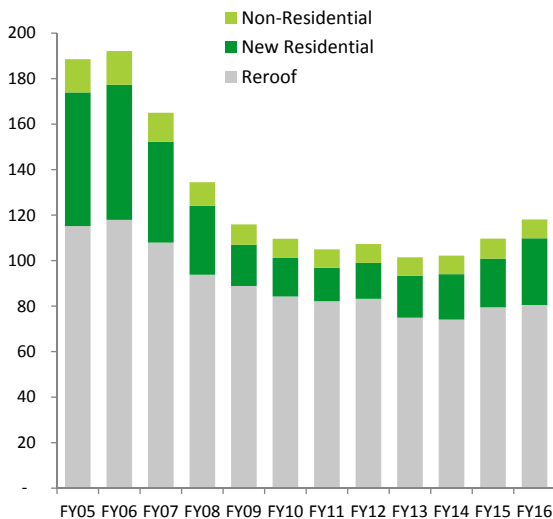
- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, Light Building Products
  - Stone, **Roofing**
- Appendix
  - Economic and Housing Update
  - Financial Results



## Roofing: Size and Segment

The pitched roof market is currently ~118 million squares; the size, stability, and profitability of the Reroof market is desirable

**Market Size<sup>1</sup>**  
(millions of squares)



**Market Segments**  
(type)

**New Residential**



- ~1.5 million roofs / year
- Cyclical driven
- Production builder
- Lower price / margin
- Less complicated sale

**Reroof**



- 3.8 million roofs / year
- Stable and growing  
~120 million homes
- Re-roofer
- Higher price / margin
- Complicated sale

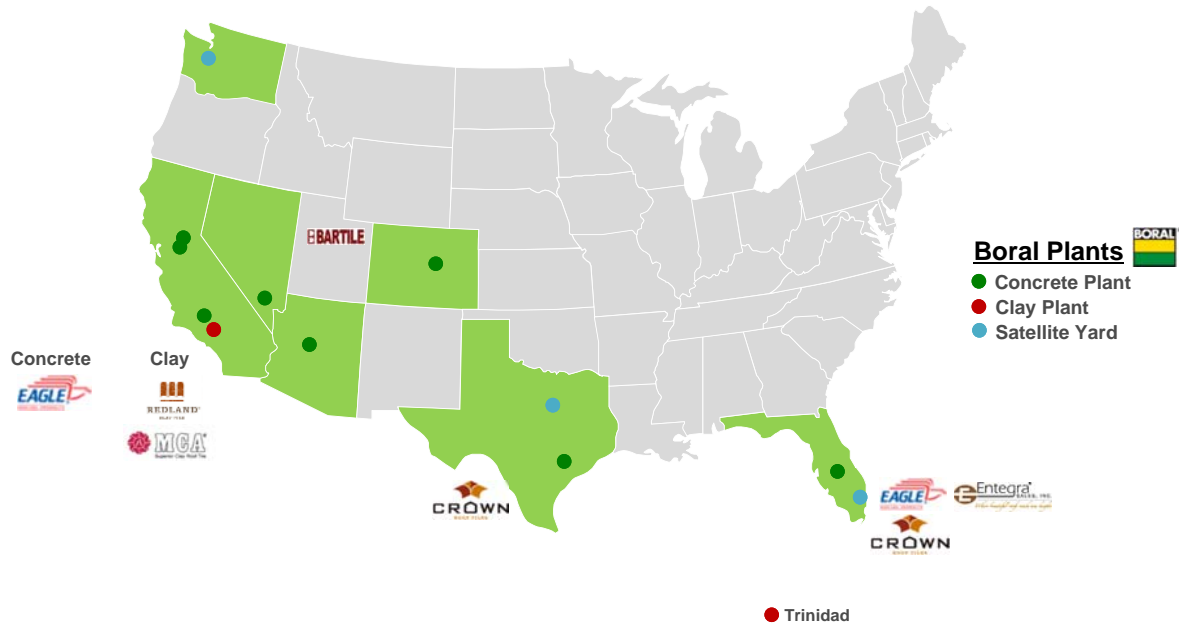
1. Source: ARMA, NAHB, Moody's, Dodge, Management Estimates



## Roofing: Market Leader in Concrete and Clay Tile

Over the past 8 years, a significant housing downturn has negatively impacted the Roof Tile Industry; Boral's performance will improve as the housing market recovers

### Roof Tile Manufacturers

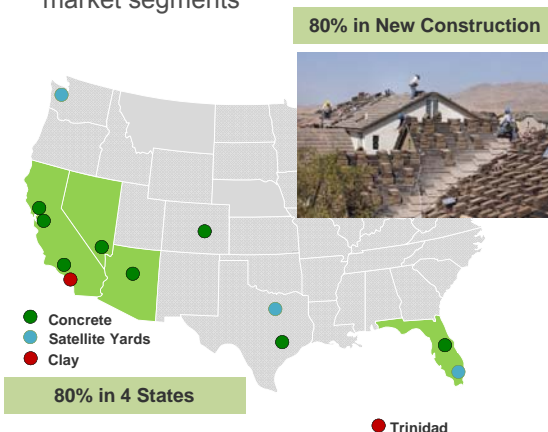


## Roofing: Strategic Intent

Provide full offering of high-end pitched roof solutions that will enable Boral to grow and diversify into new geographies and market segments

### Business Overview:

- Market leader in roof tile, but only 1% to 2% of total North America roofing
- Heavily tied to four states and new construction (production builders)
- Opportunity in new geographies, products, and market segments



### Industry Structure and Business Road Map

Industry Structure and Outlook	
Category Size (mid-cycle)	US\$0.8b
Market Exposures	New residential
<ul style="list-style-type: none"> <li>▪ Growth tied to national builders</li> <li>▪ CA, FL, AZ, NV significant upside in housing starts</li> <li>▪ Further conversion of Asphalt</li> </ul>	
Organic Strategy	
<ul style="list-style-type: none"> <li>▪ Update manufacturing with automation</li> <li>▪ Geographic expansion and total roof system</li> <li>▪ Continued accessories growth</li> </ul>	
Innovation Strategy	
<ul style="list-style-type: none"> <li>▪ Sustainable Development: Process improvement</li> </ul>	



Hand Stacking Tile



Pitched Roof Solutions



## Roofing: Business Highlights

At similar activity levels and significantly below long-term average demand; Boral Roofing has substantially improved earnings since pre-acquisition

### 1. Safety

- LTIFR<sup>1</sup> rate of zero for 5 years running
- MTIFR<sup>2</sup> rate from 5.5 in FY15 to 3.3 in FY16

### 2. SGA and Business Optimization

- Restructured organization
- E-Business, customer service, HR, etc.

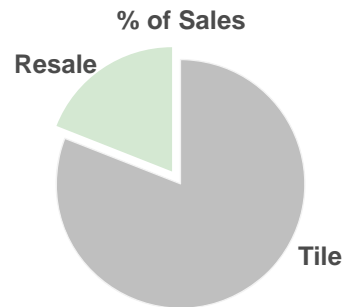
### 3. Manufacturing Optimization

- 17 to 9 plants, volume maintained
- Operating efficiency improvements

### 4. Price, Margin and Resale

- ASP increases in last 4 years in strong competitive environment
- Resale 3x in last 5 years

## Product Line Sales



1. Lost time injury frequency rate per million hours worked  
 2. Medical treatment injury frequency rate per million hours worked



## Roofing: Opportunities and Actions

Executing on key initiatives to increase profit margin and share of roof

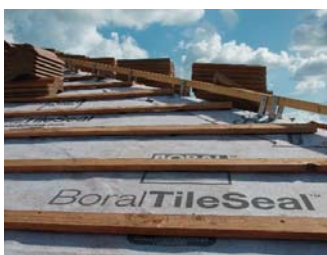
### Opportunities

- Growth of new residential in core markets
- On boarding new hires injury free
- Managing ramp-up in utilization
- Margin improvement initiatives

### Actions

- ✓ Fewer hours lost to injury
- ✓ Market and product line expansion
- ✓ Increased roof component sales
- ✓ Manufacturing network optimization
- ✓ Overhead cost improvements

Pitched Roof Solutions



Gilroy to Stockton Conversion



Hand Stacking Tile



## Boral USA – Well positioned for growth



- 1 Strong management team, track record
- 2 Leading market positions with national footprint
- 3 Fundamentals signal healthy market growth over next 5+ years
- 4 Delivering results from investment in innovation
- 5 Continuing to assess strategic M&A opportunities with a disciplined approach

## Content



- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, Light Building Products
  - Stone, Roofing
- Appendix
  - **Economic & Housing Update**
  - Financial Results



# Economic and Housing Summary

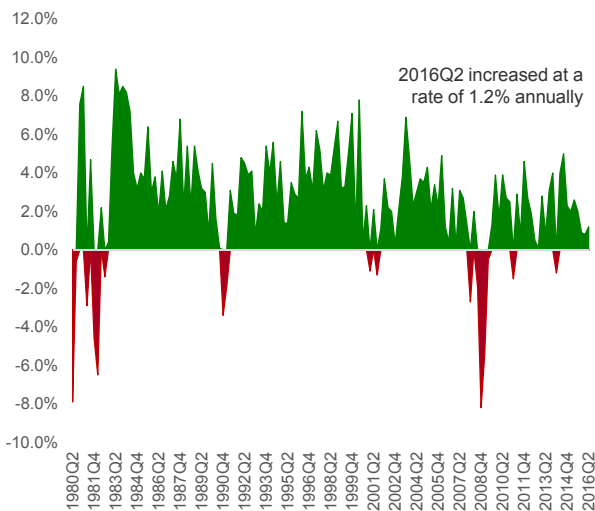
<p><b>1</b></p> <p><b>Economic Outlook</b></p>	<ul style="list-style-type: none"> <li>Growth is steady, and there are strong indicators that it will continue</li> <li>Labor markets are tight</li> <li>Consumer wages, buying power increasing</li> </ul>		<p><b>SUPPORTS</b></p> <ul style="list-style-type: none"> <li>Sustainable recovery</li> <li>Recovery supported by:                             <ul style="list-style-type: none"> <li>Economy</li> <li>Affordability</li> <li>Housing supply and demand</li> <li>Demographics</li> </ul> </li> <li>No indication of a pause or change to shape of recovery</li> <li>Ample room for continued growth</li> </ul>
<p><b>2</b></p> <p><b>Housing Fundamentals</b></p>	<ul style="list-style-type: none"> <li>Affordability is high</li> <li>Market is undersupplied</li> <li>Single family homes needed to meet demand</li> </ul>		
<p><b>3</b></p> <p><b>Demographics</b></p>	<ul style="list-style-type: none"> <li>Demand outpacing supply</li> <li>Millennials need starter homes in short term</li> <li>Baby boomers need next home in long term</li> </ul>		



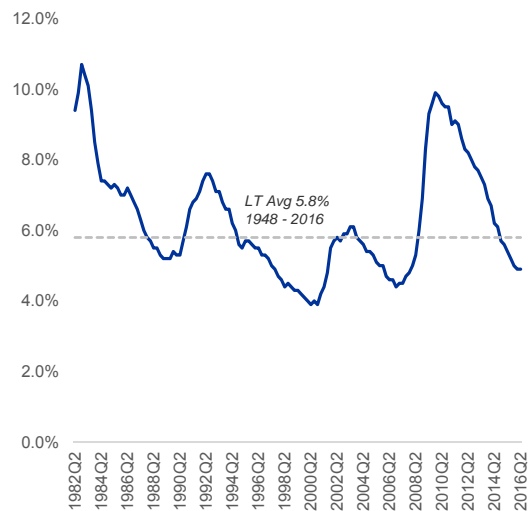
## 1. GDP Growing and Wages Rising

Growing economy and high employment are starting to drive real wage growth

**US Real GDP Growth<sup>1</sup>**  
(YOY % Growth)



**Unemployment Rate<sup>1</sup>**



Growing economy coupled with steady job growth should drive higher wage growth and household formations

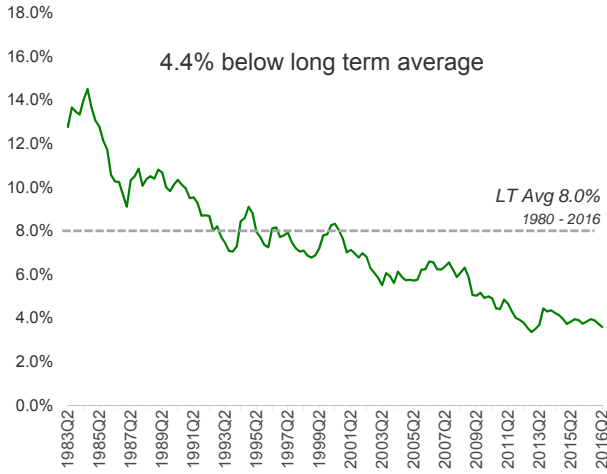
1. Sources: Bureau of Economic Analysis, Bureau of Labor Statistics



## 2. Affordability Near All Time High

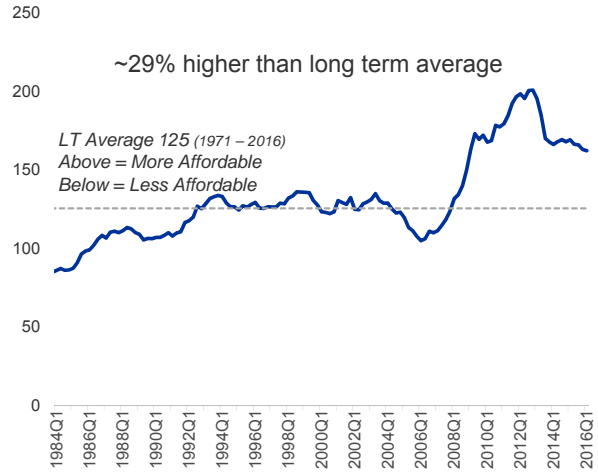
Affordability remains high, low rates have driven demand and pricing upwards

**30 Year Fixed Mortgage Rate<sup>1</sup>**  
(%)



Rates to remain low as FOMC adjusts Fed Funds rate at slow pace

**Housing Affordability Index<sup>1</sup>**  
(Index)



Affordability will remain high driven by low rates and wage growth

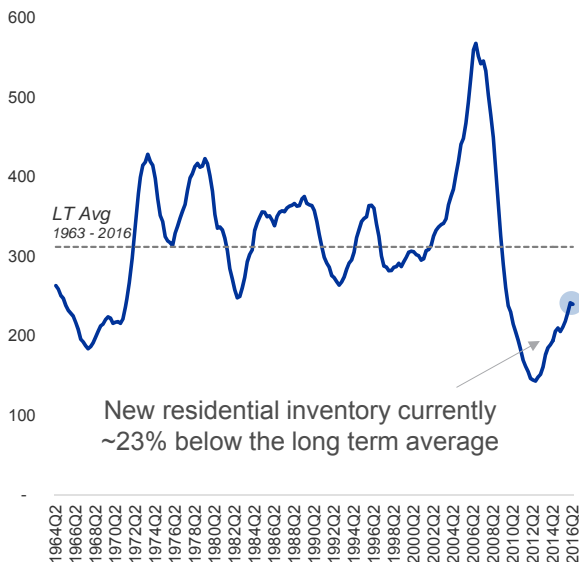
1. Sources: Moody's Analytics, National Association of Realtors



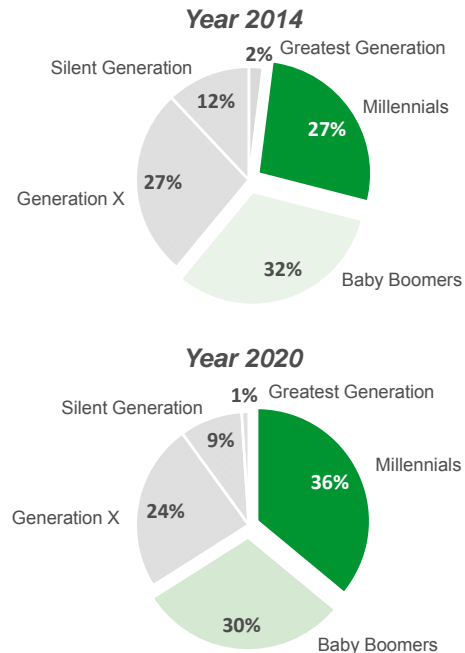
## 2. and 3. Demand Outpacing Supply

Housing stock undersupplied as demand continues to rise driven by millennials and baby boomers

**New Housing Stock Inventory<sup>1</sup>**  
(New homes millions)



**% of Adult Population<sup>1,2</sup>**



1. Sources: US Census, Harvard Joint Center for Housing studies, Pew Research Center

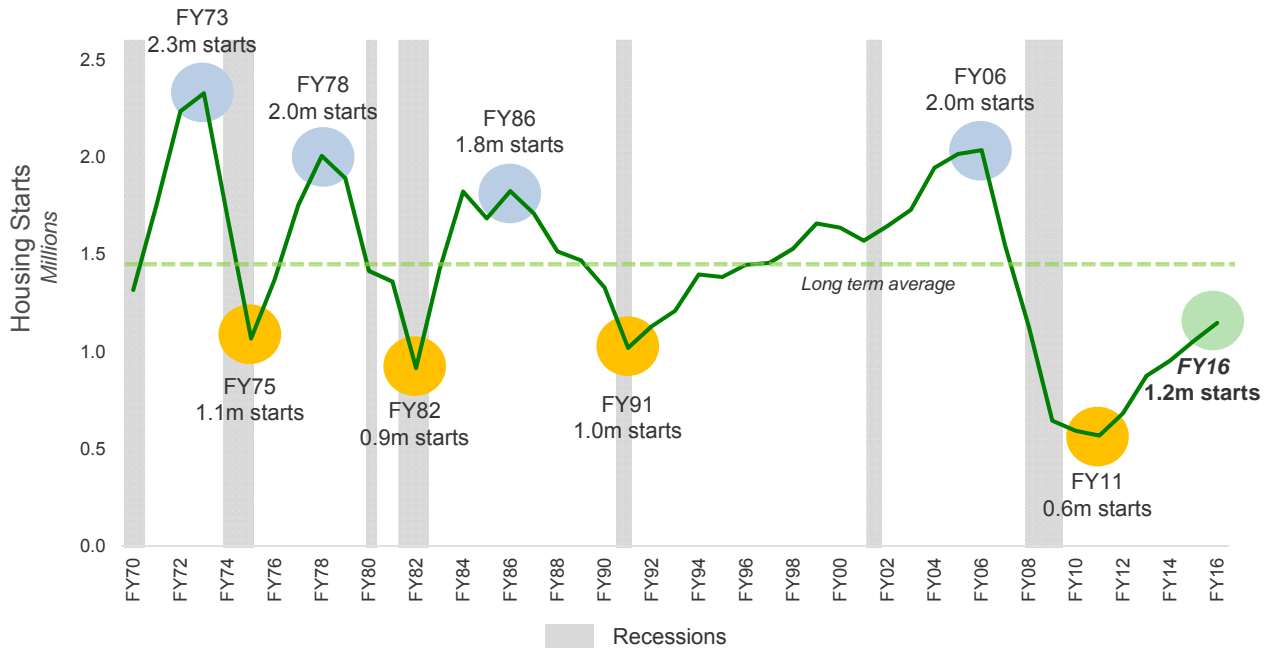
2. Millennials born in: 1981-1997; Generation X: 1965-1980; Baby Boomers: 1946-1964; Silent Generation: 1928-1945; Greatest Generation: before 1928



# Historic Total Housing Starts

Current cycle near long term cyclical low; fundamentals support continued improvement

## Long Term Housing Starts<sup>1</sup>



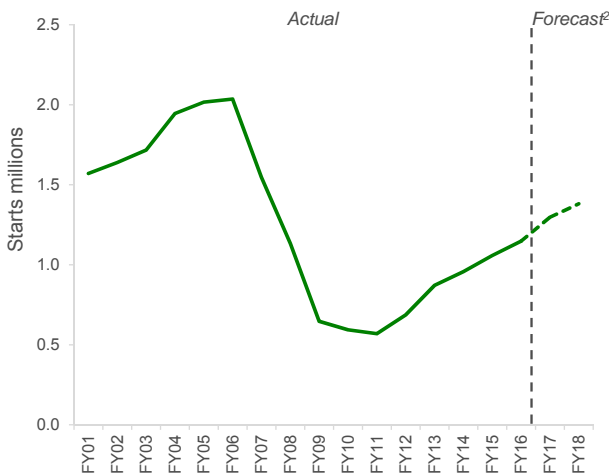
1. Sources: Census Bureau



# Market Outlook

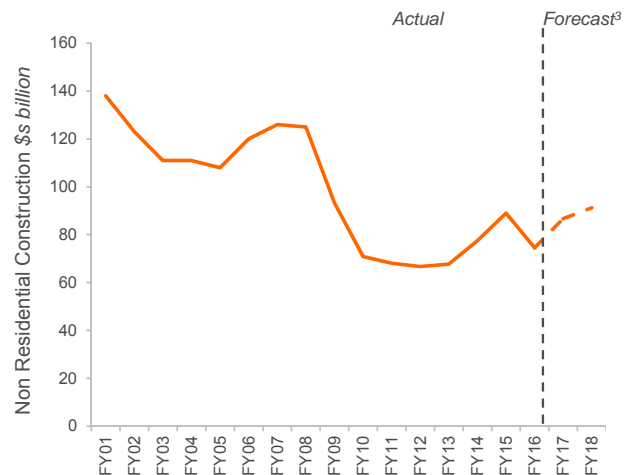
Residential and non-residential momentum to continue in FY2017; strong growth forecast in both markets through next 3 to 5 years

## New Residential Starts<sup>1</sup>



External forecasters<sup>2</sup> expect average of ~1.3m starts in FY2017

## Non Residential Activity<sup>3</sup>



Expected growth of ~16% for the Non-Residential segment in FY2017

1. Historical Housing Starts: Census Bureau  
 2. Residential Forecast: Average of NAHB, MBA, Dodge, Wells Fargo, NAR, Fannie Mae and Freddie Mac  
 3. Non Residential Activity: McGraw Hill / Dodge - 1992 Value



## Content

- Boral USA Overview
- Strategic Update
  - US Overview
  - Bricks Joint Venture
  - Fly Ash, Innovation, Light Building Products
  - Stone, Roofing
- Appendix
  - Economic & Housing Update

### ➤ Financial Results



## FY2016 Financial Results

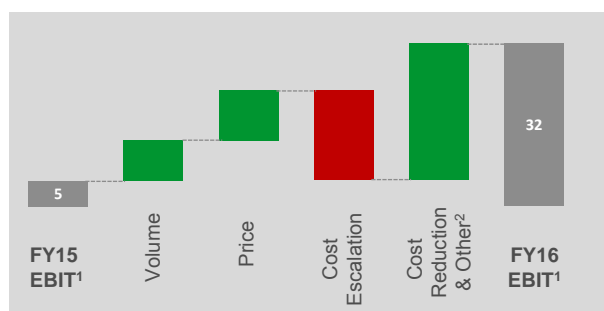
Strong profit growth; continuing to benefit from market recovery

US\$m	FY16	FY15	Variance
Revenue	751	695	8%
EBITDA <sup>1</sup>	68	42	63%
<b>EBIT<sup>1</sup></b>	<b>32</b>	<b>5</b>	
EBIT ROS, %	4.2	0.7	
Net Assets	659	634	
ROFE <sup>1</sup> , %	4.9	0.8	

**Revenue**  
**\$751m** ↑8%      **EBIT**  
**\$32m** ↑ from US\$5m

- US\$ revenue up 8% to US\$751m; continuing to benefit from increased housing construction
- EBIT of US\$32m, up US\$27m, due to volume and price growth and one-off land sale of US\$7m
- Cladding revenue up 8% to US\$405m
  - Bricks: revenue up supported by re-sale product revenue growth; volumes up 4%, average prices up 1%
  - Cultured Stone: volumes up 7%, average prices up 2%
  - Trim & Siding: volume and price growth; manufacturing and marketing accelerated; targeting break-even in FY2017
- Roofing: volumes up 11% with higher growth in traditional Tile States; average prices steady
- Fly Ash & Construction Materials: pricing gains as well as strength in Denver construction market

### EBIT Variance (US\$m)



1. Excluding significant items; ROFE may differ slightly in AUD and USD due to FX conversion  
 2. Cost reduction & other includes production volume leverage and one-off land sale

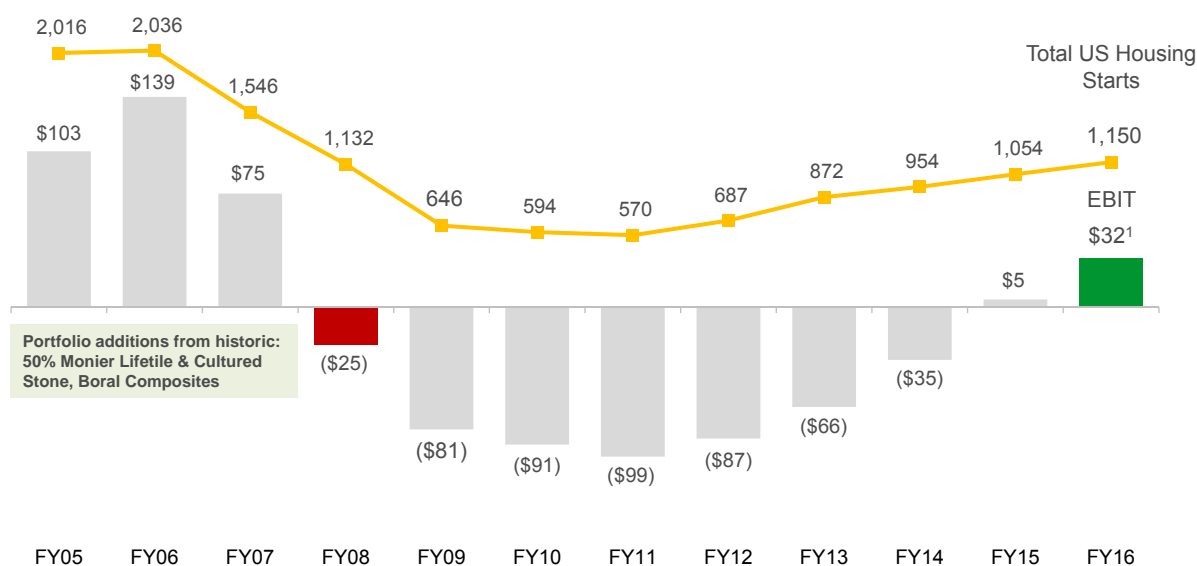




## EBIT and Housing Starts

Positive results at lower level of housing starts

### EBIT (US\$m) vs Housing Starts ('000)



1. Includes one-off \$7m land sale

63



## FY2016 Performance Drivers

Improvement driven by higher volumes, price growth, and cost and asset management

	Total Starts <sup>1</sup>	Single Family Starts <sup>1</sup>	Volume	Price	Revenue	EBIT	Utilization
Bricks	Up 4%	Up 6%	↑	↑	↑	↑	Up to 55%
Stone	Up 9%	Up 13%	↑	↑	↑	↑	Up to 40%
Roofing	Up 9%	Up 16%	↑	↑	↑	↑	Up to 31%
Composites	-	-	↑	↑	↑	↓	-
Materials <sup>2</sup>	-	-	↑	↑	↑	↑	-
Fly Ash	-	-	↑	↑	↓	↑	-

1. Brick States: Texas, Oklahoma, Arkansas, Louisiana, Kentucky, Tennessee, Mississippi, Alabama, Georgia, South Carolina, North Carolina (Source: Dodge)  
 Stone: Total United States starts (Source: Census)  
 Tile States: California, Nevada, Arizona, Florida (Source: Dodge)

2. Volume and ASP are concrete only

64



## FY2017 Outlook for Boral USA:

- Expect further growth in EBIT on the back of increased housing activity
- If market improvement trajectory of past three years of ~10% continues, expect ~1.26m housing starts in FY2017
- Continued growth of Boral's Light Building Products

65



The material contained in this document is a presentation of information about the Group's activities current at the date of the presentation, 13 September 2016. It is provided in summary form and does not purport to be complete. It should be read in conjunction with the Group's periodic reporting and other announcements lodged with the Australian Securities Exchange (ASX).

To the extent that this document may contain forward-looking statements, such statements are not guarantees or predictions of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this release.

This document is not intended to be relied upon as advice to investors or potential investors and does not take into account the investment objectives, financial situation or needs of any particular investor.

66