

16 May 2018

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

### Dear Sir

We attach copies of slides being presented today to members of the investment community in Brisbane, Queensland.

Yours faithfully

Dominic Millgate
Company Secretary



# Agenda – Wednesday, 16 May 2018



#### **PRESENTATIONS and Q&A:**

Introduction: 8.45-9.00am

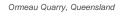
· Mike Kane, CEO & Managing Director

#### Boral Australia: 9.00-11.15am

- · Joe Goss, Divisional Chief Executive, Boral Australia
- · Ross Harper, Executive GM, Cement
- · Wayne Manners, Executive GM, Major Projects
- Brian Tasker, National GM, Property
- · Simon Jeffery, Executive GM, Queensland

#### USG Boral: 11.30-12.45pm

- · Frederic de Rougemont, CEO, USG Boral
- · Tony Charnock, Senior VP Asia Pacific, USG Boral



**LUNCH:** 12.45-1.15pm

**SITE VISIT – Ormeau Quarry** Depart 1.15pm, return 4.45pm

# Boral today: Performance, transformation & growth



#### 1. Delivering strong results in Australia and maintaining leading positions

- · Key supplier to Australia's booming infrastructure and strong residential and non-residential construction markets
- · Reinvesting in valuable upstream quarry positions, low cost cement positions and downstream concrete & asphalt networks
- · Solid margins with further improvements to come through excellence programs, innovation and price

TODAY'S FOCUS: Excellence programs, challenges & opportunities, major projects, property, Queensland

#### 2. Strong long-term growth platform with innovation-based competitive advantage in USG Boral

- · Leading plasterboard business in Asia, Australia and the Middle East
- · Positioned well to respond to changes in demand cycles and competitive pressures

TODAY'S FOCUS: Delivery against strategy, innovation, brand leadership, challenges & priorities

#### 3. Delivering transformational growth in North America

- · Successful integration of Headwaters acquisition with substantial synergies
- · Further growth through market recovery and innovation
- · Addressing short-term operational issues
  - Photo updates from the diary of the CEO

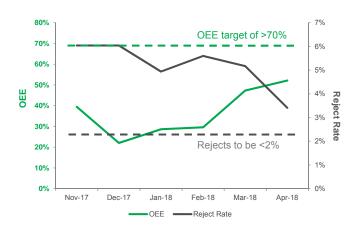
3

# Boral North America - Oceanside, California

BORAL

Plant Optimisation is delivering substantial improvements in efficiencies

Overall Equipment Effectiveness (OEE) and Reject Rates, Oceanside Metal Roofing Plant, California



- Monthly OEE reporting implemented at end of 2017
- In 4 months:
  - OEE lifted from 22% to 52%
  - reject rates reduced from 6.0% to 3.4%
- Plant optimisation expected to improve costs

# Boral North America – Oceanside, California



We are aligning Oceanside's safety and production with our standards

BEFORE





Glazing mixing area











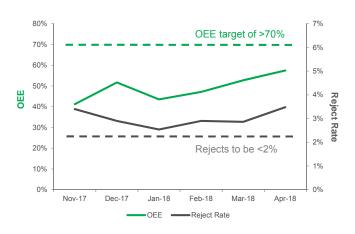


# Boral North America - Okeechobee, Florida

Plant Optimisation is delivering substantial improvements in efficiencies



Overall Equipment Effectiveness (OEE) and Reject Rates, Okeechobee Roof Tile Plant, Florida



- Monthly OEE reporting implemented at end of 2017
- In 5 months:
  - production doubled from December to March/April
  - OEE lifted from 41% to 57%
  - reject rates fluctuating between 2.5% and 3.5%
- Plant optimisation expected to improve costs

# Boral North America — Okeechobee, Florida Improved logistics and inventory management





# Boral North America - Okeechobee, Florida

We are aligning Okeechobee's safety and production with our standards



BEFORE



















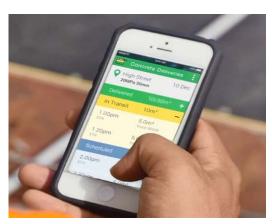


# Agenda

Boral Australia is making strong progress on building a sustainable performance model



- Boral Australia Overview
   Joe Goss
- Major Projects
   Wayne Manners
- Cement
  Ross Harper
- Property
  Brian Tasker
- QLD Region
  Simon Jeffery

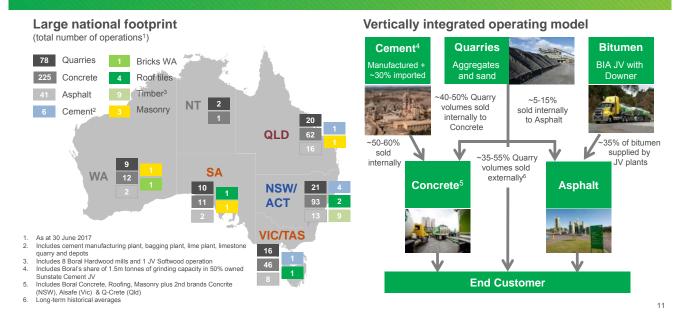


Boral Concrete App launch

# **Boral Australia**



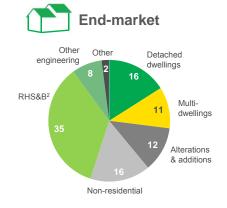
A vertically integrated portfolio of construction material assets with an east coast focus



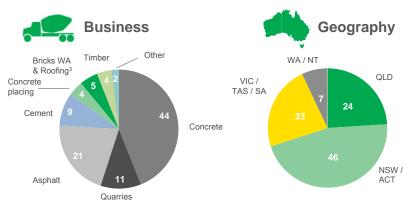
# Revenue Profile

**BORAL** 

A diverse revenue<sup>1</sup> profile (%) by end-market, business and geography



Diversified end-market focused on infrastructure and residential



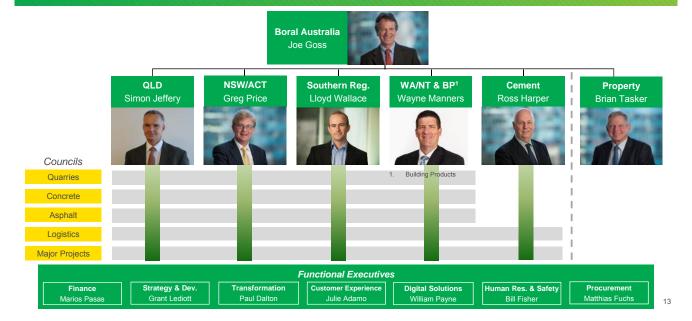
Concrete sales externally focused with Quarries & Cement more internal

East coast, metro market focused

- Based on 1H FY2018 split of Boral Australia external revenue Roads, Highways, Subdivisions & Bridges Bricks WA & Roofing includes Masonry revenues



Organisational Structure
Leveraging regional management structure with product & functional support.



# Delivering strong returns and capturing growth We are targeting to deliver continued revenue growth and margin improvements



Growth focus	Initiatives and Actions	Targets
Capturing volumes from higher demand	<ul> <li>Upgrading quarry and downstream plant</li> <li>Supplementing fixed network with mobile plants</li> <li>Expanding asphalt crew and equipment national mobility</li> <li>Optimising national cement sourcing and adding cement capacity</li> <li>Maintaining or improving our market position</li> <li>Expanding Project Management Office</li> <li>Introducing new value added concrete products</li> <li>Implementing national network sales and operations planning</li> </ul>	Maintain or improve market position  Secure our share of infrastructure projects
Delivering better <b>pricing</b> outcomes	<ul> <li>Building organisational customer orientation</li> <li>Implementing Commercial Excellence</li> <li>Implemented two price increases p.a. since FY2016</li> <li>Targeting more technical projects aligned with capabilities</li> <li>Differentiating our customer experience, driving value for both customers and Boral</li> </ul>	ASP to offset cost increases and achieve a return on investment that exceeds cost of capital through cycle
Continuing focus on <b>costs</b> & operational improvements	<ul> <li>Continuing Operational Excellence initiatives (incl. procurement, OEE, productivity)</li> <li>Implementing Supply Chain Optimisation program</li> <li>Delivering quarry upgrade benefits: Deer Park, Orange Grove, Ormeau (late 2018)</li> <li>Completing alternative fuels investment at Berrima</li> <li>Building Vic portside clinker import and grinding facility</li> <li>Leveraging digital innovation opportunities for cost and safety</li> </ul>	~1-2% savings on cost base per year ~5-10% Supply Chain cost optimisation (over 3 years)

# **Culture and Capability**

Sustaining performance by investing in culture and our people

Sustainable Performance



#### Sustainable Performance Model

Culture

People & Leadership

Safety Excellence

Customer Excellence

Operational Excellence

Transforming our business through our people – strong leadership, people engagement and cultural alignment

- Culture, people and leadership underpins our investment in excellence programs and our zero|one|ten strategy
  - 'Zero Harm Today' to our people and environment
  - Number one for customers and employees
  - 10% improvement
- Organisational health is critical in achieving sustainable high performance

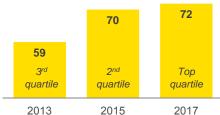
# Organisational Health

Improving organisational health to drive sustained business performance



# **Organisational Health Index**

Source: McKinsey & Company OHI Survey





- Organisational health and culture of the business are critical to achieve sustainable performance
- McKinsey Consulting has compiled years of studies from over 1,000 companies into an Organisational Health Index (OHI), which indicates that companies in the top quartile 'outperform' peers
- Our most recent 2017 survey<sup>1</sup> score has moved Boral Australia into the top OHI quartile with zero practices in the bottom
- Survey results by business provide valuable insights into individual business culture and leadership perspectives within each business
- Outputs provide key areas of focus to continue to grow our people and improve performance

<sup>2017</sup> survey included 1,300 employees in Boral Australia surveyed and included front line team leaders and supervisors through to the senior leaders in our business



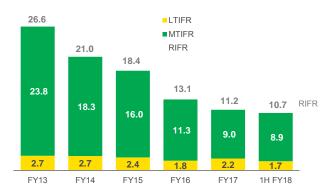


## Safety Excellence

# ZEROHARM Today

- Management commitment and leadership
- Employee engagement in health, safety and environment responsibility:
  - ✓ Engaging front line supervisors
  - ✓ Strengthening behavioural programs
  - ✓ Continuing contractor safety program
  - ✓ Implementing site based environmental plans

### **Division Recordable Injury Frequency Rate**



Injuries per million hours worked for employees and contractors. Recordable Injury Frequency Rate (RIFR) comprises Medical Treatment Injury Frequency Rate (MTIFR) and Lost Time Injury Frequency Rate (LTIFR).

# Customer Excellence

Improving customer orientation and pricing practices



### Customer Excellence

## **Customer orientation:**

Helping customers to Build something great

- · Identifying customer journeys by key segments to better understand customer needs and moments of truth across our customer lifecycle
- Designing improved customer experience built around core customer and business value
- · Developing improved service models by segment, with success metrics

#### **Commercial Excellence:**

Setting prices to achieve a sustainable return

While maintaining or improving our market positions, obtaining a fair price to achieve a return on investment that exceeds the cost of capital through the cycle

- Building a commercial culture and training our sales team to leverage the value of our products and services
- Differentiating pricing by segment and product, built around the value we deliver / what customers value
- Improving access to sales data to allow faster and better decision making and oversight of our price and margins

# **Customer Excellence**

Improving customer orientation and pricing practices



# Growing revenue and margins

#### **Objectives**

- Expanding margins through greater understanding of Boral's 'cost to serve' and customer behaviour
- · Capturing pocket margin

# Building commercial culture

- Institutionalising 'One Boral' behaviour / culture with clear behavioural guides
- Building sales staff competency through training programs and targeted recruitment

# Building sales tools & systems

- Improve decision making via reporting and 'configure, price, quote' tools with customer relationship management
- · More frequent pricing reviews

#### **Progress**

- Experience roadmap validated with customers, works program commenced
- Launched SMS order confirmation and Concrete deliveries arrival time 'app'
- Achieving product margin growth targets for most businesses
- 280 sales professionals accredited to Bronze status by June 2018
- Configure Price Quote tool rolled out in Southern Region with the rest of the East Coast to be completed by July 2018
- Implemented two price increases in FY18

19

# Pricing

We have delivered price growth on the east coast



20

- · Average selling price (ASP) increases required to offset inflationary cost increases
- · ASP impacted by a range of issues including geographic, segment and product mixes
- · Like-for-like (LFL) movements impacted by demand and competitive dynamics

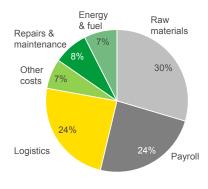
#### Case Study: Boral concrete prices, FY2014-18 1HFY18 Boral concrete price movements FY14 FY15 FY17 **1HFY18** ASP **1** 4% **1** 4% Slightly Steady 1% 3% LFL Steady Steady 1% NT QLD WΔ ASP Strong housing activity Shift to infrastructure and Sydney SA and LNG projects Improved pricing outcomes in stronger ASP LFL **NSW/ACT** demand geographies reduced by softness Competitive pressures in Qld and Victoria in WA and regional markets Annual price increases Market position recovery in some regions Price increase VIC/TAS Progressive rollout of Commercial Price decrease ASP T Excellence program contributing Implemented two price increases p.a. since FY16 Steady prices

# Cost Base





# Boral Australia's ~\$2.9b cost base



Source: Management accounts

- Materials costs: internationally traded clinker and bitumen prices increasing in line with Asian markets and exchange rate
- Payroll: average wage inflation of ~3%
- Logistics: higher subcontractor cartage costs in east coast markets due to higher demand to move tunnel material and supply underlying markets
- Energy and fuel: electricity & gas ~\$20m higher in FY2018 (to be ~\$110-\$120m) and diesel usage ~100m litres p.a.
- East coast quarry capacity being supplemented with mobile contract crushing plants and sourcing materials from quarries outside metropolitan areas and external purchases
- Key quarry, concrete and asphalt investments will reduce future operating costs

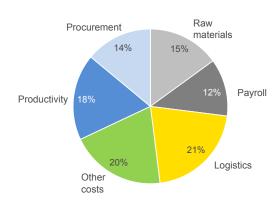
21

# Carational Excellence

Continued success from Operational Excellence initiatives



#### Cost improvement focus areas for FY2018



Source: Internal estimates

### Operational Excellence

- Cost improvement programs delivered around average \$60-70m p.a. (~\$250m since FY2015¹)
- Productivity based improvements from OEE<sup>2</sup>, plant configuration and waste reduction
- Restructuring and labour right-sizing
- · Procurement initiatives
- Ongoing supply chain optimisation
- · Strategic and operational capital allocation
- Contributing to growing margins and offset cost increases

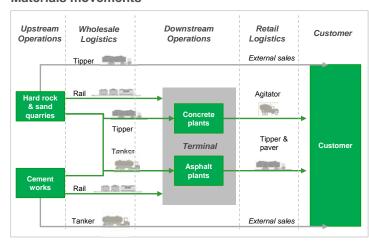
# Supply Chain Optimisation





We have ~2,500 road vehicles, including ~1,400 agitators and ~1,100 tippers and tankers. We spend over \$650m p.a. moving more than 100m tonnes of materials and finished goods by road, rail & ship

#### **Materials movements**



- Using fleet to improve connectivity between 225 concrete plants, 78 quarries and 41 asphalt sites
- Standardising and automating processes that evolved organically across independently run businesses
- Building common tools and systems, as well as people capability, for a sustainable outcome
- Our 3 year journey into supply chain excellence commenced January 2018
- Network optimisation will lower costs and demonstrate the true benefits of scale

23

# Supply Chain Optimisation

We are making progress on our multi-year supply chain program



# Objectives

Optimising our network to drive margin growth

- Reducing 'costs to transport' and improving customer service / reliability
- Performing diagnostics to prioritise areas of opportunity – digital, people and process areas identified
- Building common tools & processes
- Standardising logistic processes and building supporting infrastructure
- System upgrades to automate despatch and S&OP¹ investments

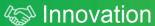
Improving connectivity

- Improving connectivity between logistics fleets and our large integrated operational footprint
- · Leveraging network scale and reach
  - Sales and Operations Planning

#### **Progress**

- Completed internal and external benchmarking, identified 5-10% supply chain opportunity over 3 years
- · Recruited external supply chain resources
- Optimising national standard S&OP practices
- Building new reports with key logistics measures and weekly dashboards
- Piloting initial allocations improvements in Southern Region
- Piloting national concrete economic order sourcing model in SEQ

24







#### **Objectives**

Driving margin growth through new products

- Continual review of product, service and business models to maximise the potential benefits of innovation
- · Digital innovation to feature heavily

Commercialisation

- Commercialising products centred on customer needs and materials science
- Includes early strength and low carbon concrete and recycled asphalt products

Focus on collaboration and partnerships

- Leveraging Boral's history of innovation, product development and technical capability
- Greater collaboration with USA and USG Boral as well as external partners

#### **Progress**

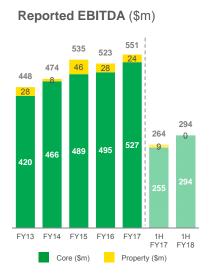
- In-house R&D and product innovation centres at Maldon and Baulkham Hills
- New B/Hub 'idea incubator' site for agile development / commercialisation
- Launching Concrete customer apps and new website with enhanced mobility and e-commerce functions
- Launch of new products including Vantage® and Aspire®
- · Strengthening technical sales capability
- Expanding links with Boral Innovation Factory in San Antonio
- Partnerships established with leading Australian universities

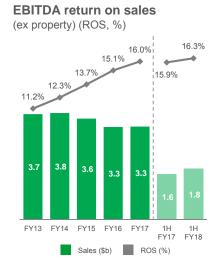
2

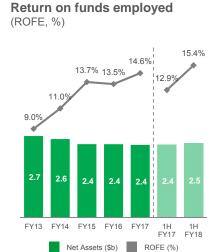
# Financial Performance

Solid earnings growth reflects successful progress on key strategies











# Outlook for FY2018 (as announced on ASX on 24 April 2018)



Australia

- Including Property, Boral Australia is now expected to deliver improved earnings growth with an expected increase of approximately 10-20% in FY2018 compared with FY2017, on both an EBITDA and EBIT basis.
- Earnings in Boral Australia were lower than we expected in the March quarter due to an unscheduled kiln outage at Berrima, continued challenging conditions in Western Australia, and a rain impacted Queensland market. However, a strong June 2018 quarter is expected from Boral Australia, especially if favourable weather conditions occur as they did in the June 2017 quarter.
- Boral now expects a total EBITDA contribution from Property in FY2018 of approximately \$55 million to \$65 million, with the sale of the Prospect site having progressed earlier than expected.

# Agenda

Major Projects are an avenue for continued Boral Australia growth



- **Boral Australia Overview** Joe Goss
- **Major Projects** Wayne Manners
- Cement Ross Harper
- **Property** Brian Tasker
- **QLD Region** Simon Jeffery



Forrestfield Airport Link, WA (Photo supplied courtesy of Salini)



Boral's Project Pipeline
We have secured and are executing on a strong pipeline of projects

Ducinate committed		Boral material supply				
Projects committed	Quarries <sup>1</sup>	Concrete	Asphalt	Cement <sup>1</sup>	completion	
Bringelly Road Stage 1, NSW	✓		1	✓		
Pacific Hwy, NSW	✓	✓	✓	✓		
Toowoomba Second Range, Qld	✓	✓		✓	0010	
Warrego Highway stage 2, Qld	✓		1		2018	
Amrun Project, Qld	✓	✓				
NorthLink stage 1, WA	✓		✓			
Northern Beaches hospital, NSW	✓		✓	✓		
NorthConnex, NSW	✓	✓		✓		
Gateway Upgrade North, Qld	✓		1	1	2019	
Kingsford Smith Drive, Qld	✓	✓	✓	✓		
Logan Motorway, Qld	✓		✓	✓		
Forrestfield Airport Link (Precast), WA	✓	✓				
Sydney Metro (City/SW precast), NSW	✓	✓		✓		
Northern Road stage 2, NSW	1		✓	✓		
Northern Road stage 3, NSW	✓	✓		1	0000	
Melbourne Metro (Precast), VIC	✓	✓		✓	2020	
Pacific Motorway, Qld	1	1		✓		
Northern Connector, SA	✓		✓			

#### Projects currently tendering

Albion Park Rail Bypass, NSW Brisbane Airport Runway, Qld Haughton River Bridge, Qld Inland Rail, Qld, NSW, VIC

Smithfield Transport Corridor Upgrade, Qld

Melbourne Airport Runway, VIC

Lal Lal Windfarm, VIC

Newell Hwy Upgrade, NSW / QLD

Outer Suburban Arterial Roads, VIC

Pacific Hwy W2B, NSW

Barangaroo Residential Tower, NSW

Princes Hwy Upgrade, NSW

Sunshine Coast Airport, Qld

WestConnex Stage 3, NSW

West Gate Tunnel, VIC

Badgery's Creek Airport, NSW (pre-tender)

Note: Materials revenue from major road projects is typically 1-5% of project cost

#### 29

# **Major Project Success**

Infrastructure projects underway demonstrate Boral's capability to deliver







#### Northlink Stage 1

- New Perth road corridor
- Supply & place asphalt
- ~180,000 tonnes



# Forrestfield Airport Link

- & structures
- Fixed & Mobile



2017 - 2019

# **Kingsford Smith**

- ~70,000kt fixed asphalt plant



2016 - 2019



Supply & place asphalt ~500,000 tonnes



2016 - 2019

# Tunnel linking M1-M2



**NorthConnex** 

- Integrated concrete supply through dedicated project plants
- ~500,000m3 concrete



2018 - 2019

# Logan Motorway

- Enhancement Works, Portion A
- Asphalt supply & place via fixed plant
- ~400,000 tonnes

<sup>1.</sup> Includes supply through concrete or asphalt

Boral Project Capability
Boral continues to prove its ability to deliver on major projects



For several years we have made statements around the importance of major projects, building Boral Australia's project management, execution and technical capability and winning projects



# Technical Capability Success in Precast projects Case study: precast concrete supply to line tunnels for metro rail projects



#### **Technical investment**

- · Early concrete solution based investment
- · Technically complex solutions developed
- · Early engagement with project critical
- Leveraging Boral experience and learnings from other major projects
- Supplying large volumes via 'bolt on' concrete plants attached to customers precast facility
- Deploying equipment and people nationally
- Demonstrating our strong safety management and chain of responsibility

#### Fire testing



Flex testing



Slump testing



### Case study: Precast rail projects

### Forrestfield Airport Link, Perth



- 180,000m<sup>3</sup> concrete
- 54,000 segments and stations (9,000 rings)
- 2017 to 2019

Sydney Metro, Marrickville



- 140,000m3 concrete
- 99,000 segments
- 2018 to 2019

### Melbourne Metro, Deer Park

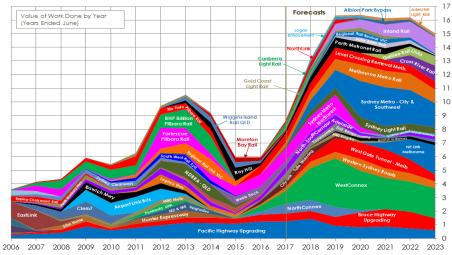


- 90,000m3 concrete
- 50,000 segments
- 2018 to 2020



Project Pipeline – Medium Term
We are in the earlier stages of a strong infrastructure cycle in key east coast markets

#### Major transport infrastructure construction projects<sup>1,2</sup> (A\$b)



- Infrastructure pipeline is east coast dominant
- Projects are close to integrated Boral operations
- **Boral Project Management** Office aligning strategy
- Avoid 'winners curse' by ensuring capacity to service both major project demand and underlying core markets

- 1. Source: Macromonitor, Construction Materials forecast, February 2018 estimates
  2. Charf prepared exclusively by Macromonitor based on publicly available data. Boral has not independently verified either the historical data or forecasts. Chart shows financial years and projects with total value >A\$500m only
  3. Forecast spending represents indicative estimation of likely spending based on currently available information. There can be no assurance that actual results will be as forecasted and such differences can be material.

  There can be no assurance regarding the proportion of forecast project spending that represents requirements for which Boral is a potential supplier, or that Boral will be successful in generating revenue from any of these projects

# Project Pipeline – Longer Term The major project pipeline post 2022 is building with government announcements

**BORAL** 

#### 'The government's 10-year national infrastructure plan'



- Key projects announced in NSW and Vic where Boral has a strong integrated position
- · Projects are in early stages and indicate a continued long-term pipeline of major projects
- Federal and State government budgets include funding for large infrastructure projects
- · Boral will engage early to build solutions utilising our capability to differentiate and effectively compete

# Agenda

Boral Cement continues to be a highly profitable part of Boral Australia



### Boral Australia Overview

Joe Goss

# Major Projects

Wayne Manners

# Cement

Ross Harper

# Property

Brian Tasker

# QLD Region

Simon Jeffery



Resource derived fuels loader for the Berrima Kiln

35

# **Boral Cement Portfolio**

A strong portfolio of businesses that source and supply a wide range of products



# Berrima



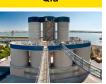
#### Maldon NSW



Waurn Ponds



Sunstate JV Qld



Marulan NSW



Limestone & Lime

limestone reserves

DeMartin & Gasparini, NSW



#### Clinker & cement

- Clinker (1.5mt) fully utilised kiln
- 2 mills (1.6mt)<sup>1</sup>
- Rail link to CBD

## Specialty cements

- 2 mills (900kt)<sup>1</sup>
- Berrima clinker
- Packaging plantRail link to Berrima

# ments Grey cement

- 2 mills (750kt)<sup>1</sup>
- Imported Clinker transported inland

#### **Multiple cements**

- 3 mills (1.5mt)<sup>1</sup>
- 50:50 JV with ABL
- Import clinker
- Portside facilityDry mix capability
- 3.3mt of limestone quarried in FY18

>80 years

- Lime kiln (130kt)
- 19 concrete pumps
   30 concrete placing
- 30 concrete placing tower booms

**Concrete Placing** 

NSW focused

### SL & HE cement

- Grey & O/W Clinker
- Fly ash via FAA
- Cement: SL & GP
- Slag
- Specialty & blends
- Bagged products

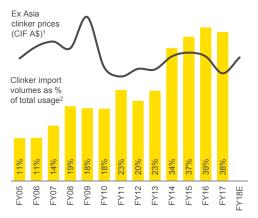
#### Grey cement: GP. HE

- Blends at Somerton terminal
- Grey cement: GP, HE & SL
- Slag, fly ash, O/W
- Blends & Bagged
- Limestone
- Lime
- Manufactured sand
- Concrete pumping & placing
- Contracting packages

Clinker Importation
Current market conditions are favourable for importers







0.75 0.75 0.79 0.90 0.74 0.88 1.00 1.04 1.02 0.91 0.83 0.73 0.75 0.77

- Management estimates Source: Cement Industry Federation Survey 2018 Source: Reserve Bank of Australia



- Historically clinker imports increased as local kilns closed and excess Asian clinker export capacity emerged
- Recent FOB clinker prices trending up due to Chinese regulations reducing export capacity
- Bulk freight increasing from recent lows



- An alternative to importing bulk cement is importing clinker which Boral favours
- Clinker importation allows better quality management and product flexibility
- Capability and scale is critical to access deeper clinker markets and lower costs
- Boral has developed deep supply chain capability importing ~1mtpa of clinker

37

# **Tailored National Cement Sourcing Models**

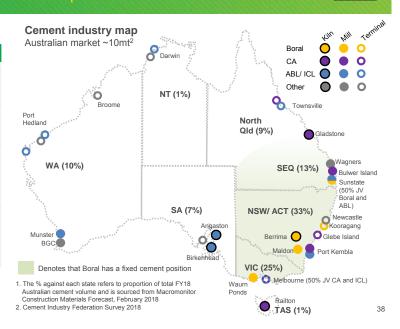
Cement sourcing models across Australia are optimised to match local conditions



#### **Boral Cement sourcing models**

	Area	Assets	Model	Rationale
~70% of National Cement Demand¹	NSW	Berrima Maldon	Clinker manufacturer ~1.5mtpa	Low kiln costs and rail link maintains competitiveness
	VIC	Waurn Ponds	Asian clinker importer ~0.6mtpa	Imported clinker is lower cost cement source
	SEQ	Sunstate (50% JV with ABL)	Asian clinker importer ~0.3mtpa (Boral share)	Imported clinker is lower cost cement source
	Other	Local supply contracts	Bulk cement purchaser from local sources 0,2-0,4mtpa	Lower scale Boral usage combined with competitive local suppliers

Boral Australia periodically reviews the long-term sustainability of sourcing models



# Flexible East Coast Cement Network

NSW cement operations are key to Boral's network flexibility



## Clinker sourcing



- Berrima costs below import parity with strong operational excellence focus
- Boral imports clinker into Port of Geelong and Brisbane with optionality in Port Kembla
- Off white manufacturing and slag processing capability

### Product range



- Maldon mill upgrade enables product supply optimisation
- Maldon blend products including slag and off white
- Package products targeting DIY / builders segment
- Fly ash sourced from FAA JV

## Supply chain



- Berrima & Maldon rail linked for low cost delivery to metro
- NSW rail network allows economic interstate supply
- Road and rail is used to optimise the supply chain of our integrated business

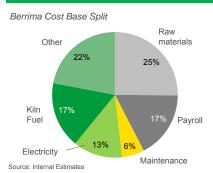
30

# Securing Berrima Cement Position

Building on our strong cost position and actively managing our energy position

# BORAL

#### Berrima Cost Base



- Energy is 30% of Berrima costs
- Raw materials, payroll and maintenance the majority of costs
- Continuous improvement will offset anticipated future cost increases

#### Electricity

Source: AEMO as at 31 March 2018

Wholesale Electricity Prices

120
100
80
40
20
FY12 FY13 FY14 FY15 FY16 FY17 YTD

- Electricity prices have risen in NSW, QLD and VIC
- Berrima electricity exposure actively managed including shifting production to low cost time of day

# Kiln Fuel

Alternative Fuels



Under construction alternative fuel loader at Berrima using resource derived fuel (cellulose product) in the clinker kiln

- Boral will shortly complete a ~\$10m upgrade to allow alternative fuels to substitute coal usage up to 30%
- Optimising Marulan lime kiln fuel by using less gas and more coal

40

# **Building a Lower Cost Victorian Position**

Reinvestment offers an opportunity to embrace new products



Current 'Inland' Operations



- Boral supplies VIC from its inland Waurn Ponds facility which grinds imported clinker
- High cartage costs from trucking clinker ~20km from Geelong Port to Waurn Ponds
- High handling costs from ship discharge to truck and clinker store to mills at Waurn Ponds

Future 'Portside' Operations



- Boral proposed investment of up to \$130m in new 1.3mtpa<sup>1</sup> cement grinding facility at Geelong Port, EPA approval secured, finalising other approvals
- Conveyor loading from ship to clinker store to mill eliminating transport and handling costs
- Growth capacity to capture project activity, future market growth and support broader network
- Produce a lower cost slag based product

44

# Agenda

Property pipeline will continue to provide ongoing earnings opportunities



Boral Australia Overview

Joe Goss

Major Projects

Wayne Manners

Cement

Ross Harper

Property

**Brian Tasker** 

QLD Region

Simon Jeffery



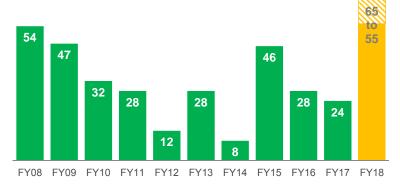
Waurns Ponds Cement site in VIC

# Solid track record of earnings contribution

Strong earnings with historical annual EBIT of circa \$30m



### Property EBIT1, A\$m



- EBIT earnings secured through a combination of multi-year developments and smaller sales of surplus land
- Portfolio rationalisation, asset relocations and operational consolidations have released valuable land opportunities
- Sales values are optimised through a variety of value added options including the rezoning of land for residential or industrial purposes
- Earnings from property expected to continue to average ~\$10m to \$20m p.a. over the near term

43

# Land management and development cycle Boral Australia manages a large land bank (400+ properties)



## **Key activities**

- Securing site tenure and related government approvals
- Facilitating stakeholder engagement
- Managing leases and property administration
- Developing future end-use option

#### Key challenges

- Securing government approvals for greenfield, upgrades or rezoning
- Ongoing urban encroachment impacting existing locations
- Expanding development timeframes



Residential, Employment, Other

Excluding significant items. FY2008 – FY2010 includes earnings from significant multi-year developments at Moorebank and Nelsons Ridge, and initial earnings from the Landfill business. FY18 figure is an estimate reflecting Boral expectations, in line with Boral's guidance in ASX announcement 24 April 2018

# Prospect Masonry Sale Announced A case study in well-executed long term land development strategy



# Prospect Masonry, NSW



Property outline indicative only

- 12.9 ha land area
- Former Boral Masonry site at Clunies Ross Street in Greystanes
- Sale plan commenced in May 2014
- Deal executed / announced in April 2018
- Proceeds of \$60m giving an EBIT contribution of \$56m in FY2018
- Sale timed to capture strong market with the sale proceeding quicker than expected
- Final land sale of the broader Greystanes Estate, which included Nelsons Ridge, 'The Quarry' industrial park and Northern Employment lands, delivered total revenue exceeding \$650m over a decade plus

Property development and divestment pipeline

**BORAL** 

We have identified significant potential development and divestment opportunities

Approx. proceeds timing FY2018 FY2021 FY2024 FY2027+ Prospect, **\$60m** in FY18 **Tactical** NSW announced land sales \$40m+ pipeline includes: NSW - Armidale, Wingham, Kiama, Bombo | WA - Jandakot | SA - Reynella, Stonyfell, Para Hills Donnybrook, Vic Potential \$200m+ (to ~2040) **Potential** Waurn Ponds, Vic Potential \$100m+ (rezoned) development pipeline Potential \$100m+ Scoresby, Vic Penrith Lakes (PLDC), NSW Timing and contribution being evaluated

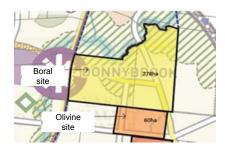
With Boral's deep property land bank, the pipeline will continue to refresh and build

# Future potential development opportunities

Boral has identified several large near term opportunities, all in Victoria



## Donnybrook, VIC



- 340 ha total land area
- Adjoins Mirvac Olivine estate
- Boral land rezoned in Nov 2017
- Subject to current negotiations
- Potential earnings of \$200m+ over 20 years

## Waurn Ponds, VIC



- 1,020 ha land area with rehabilitation required post cement operations
- Designated growth corridor adjacent to Armstrong Creek SW of Geelong
- Land rezoning strategy underway with land value directly related to rezoning
- Potential rezoned land value \$100m+

## Scoresby, VIC



- 84 ha parklands and 87 ha proposed residential infill land
- Clay pits rehabilitation underway with manufacturing site leased until 2025
- Rezoning strategy underway
- Potential 'unzoned' land value \$100m+

47

# Agenda

Strengthening and maintaining our position in South East Queensland (SEQ)



Boral Australia Overview

Joe Goss

Major Projects

Wayne Manners

Cement

Ross Harper

Property

Brian Tasker

• QLD Region Simon Jeffery



Gateway Bridge, Qld

# Queensland Region Footprint Boral has a large integrated footprint supplying key markets in Queensland

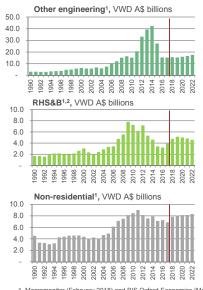


QLD Region major areas		Queensland Region					
External revenue of ~\$0.8b	Markets	Characteristic	QUA	CON	ASP	CEM	
~3,700 FTEs	Cairns	Tourism related	✓	✓	✓		
	Mt. Isa / Weipa	Mining activity	✓	✓			
	Townsville	Growing regional centre	✓	✓	✓		
	Mackay	Mining related growth	✓	✓	✓		
	Rockhampton	Mining related growth		✓	✓		
Operating footprint	Gladstone	LNG corridor	✓	✓			
(number of operations¹)	Bundaberg	Population growth	1	✓	✓	1	
20 Quarries 16 Asphalt	Surat Basin	Coal-seam gas corridor	✓	✓	✓	✓	
62 Concrete 1 Cement	SEQ	Major metro market	✓	✓	✓	1	
	Toowoomba	Growing regional centre	✓	✓	✓	1	

# Queensland Construction activity strengthening

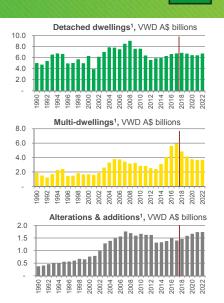
**BORAL** 

Demand is shifting from residential towards infrastructure



# VWD A\$ billions 70.0 60.0 50.0 40.0 30.0 20.0

QLD Region<sup>1</sup> construction activity



1. Macromonitor (February 2018) and BIS Oxford Economics (March 2018) 2. Roads, highways, subdivisions and bridges

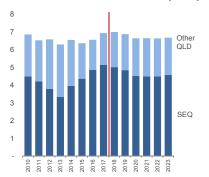
Note charts are for financial years and have been based on 2015/16 dollars unless otherwise noted

# Strong QLD Materials Demand Outlook

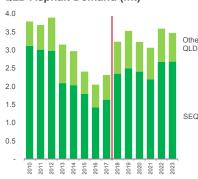
BORAL

Resilient concrete demand and rising asphalt activity with an SEQ focus

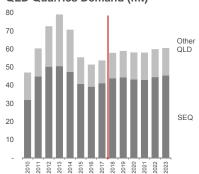




QLD Asphalt Demand (mt)



**QLD Quarries Demand (mt)** 



Source: Macromonitor Construction Materials Forecast, February 2018; financial years ending 30 June

- Recent concrete growth heavily weighted to residential and non residential building activity
- Lifestyle and affordability factors driving higher migration and underpinning future fundamentals
- Strong asphalt demand growth particularly in SEQ and Toowoomba
- Major project and increased maintenance spend driving demand forecasts
- Quarries demand linked to concrete and asphalt activity
- Major road activity contributing to higher quarry volumes

51

# **Major SEQ Initiatives**

Maintaining and strengthening Boral's SEQ position

# BORAL

#### Redbank Concrete Plant



- Plant replacement with improved access to growth corridor SW Bris.
- Capital light solution of ~\$6m using freehold land & surplus LNG plant
- Completion in Oct 2017 with site consented 24/7 and large storage improves supply chain efficiencies

# Toowoomba Asphalt Plant



- New ~\$10m plant and depot will address current site encroachment
- Completion by late 2018 with capacity of 140ktpa (from 30ktpa)
- Lower cost plant with efficient heating costs, reduced waste and maintenance costs

# **SEQ Quarries**



- Improving SEQ quarry network efficiency and capacity position with Ormeau investment
- Assessing other network options to build competitive long term position
- Balancing natural and manufactured sand positions

52

# Ormeau Quarry Reinvestment Upgrading Ormeau Quarry strengthens Boral's Brisbane position



#### **Quarry Characteristics**



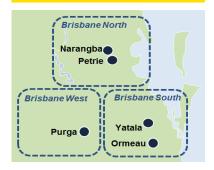
- Stone extraction first commenced in the 1980s
- 40+ years of reserve life
- Higher quality reserves suitable for high specification aggregates and full range of roadbase products

#### **Processing Plant**



- Plant replacement cost of ~\$55m with completion by end of FY2019
- Increased production capacity from ~0.5mtpa to ~2.0mtpa
- 11 hours/6 days per week consent to process and sell material

#### **Boral Network Solution**



- Close to arterial roads, enabling supply into CBD, western and southern Brisbane growth corridors
- · Reduce overall production costs with a large scale, single production plant at Ormeau

53

# **Concrete Product Video Presentation**

Boral Australia has developed a suite of innovative concrete designs



#### Vantage® Concrete

A flowing concrete that compacts under its own weight (self compacting) and allows improved placing in difficult conditions



Trial concrete pour at Ormeau Quarry

#### Aspire® Concrete

A high strength concrete that maximises floorplans in commercial and high-rise buildings and increases productivity



High rise structures / lift cores are suitable for Aspire

#### Envisia® Concrete

A lower carbon concrete with excellent performance benefits including low shrinkage, high early strength and durability



Envisia testing in QLD for precast use

This promotional video highlights the innovation behind Vantage®, Boral's self compacting concrete, and is accessible on Boral's website www.boral.com

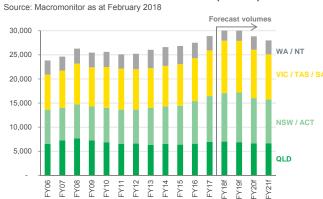


# Concrete and Asphalt demand

Boral is benefiting from industry demand that is forecast to remain at high levels

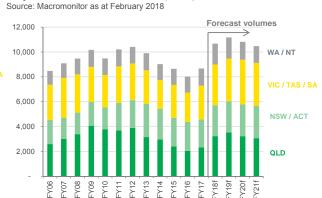


#### Premix Concrete demand forecast ('000m3)



Forecast growth in RHS&B<sup>1</sup> and non-residential building to offset a decline in multi-residential activity keeping demand at historically high levels

### Asphalt demand forecast ('000t)



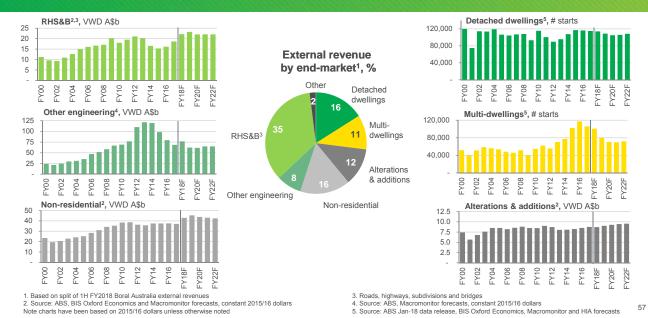
National growth in roads infrastructure keeping demand at historically high levels with QLD and VIC responsible for near term rises

1. Roads, highways, subdivisions & bridges 56



Activity by Segment
Revenues are derived from various market segments

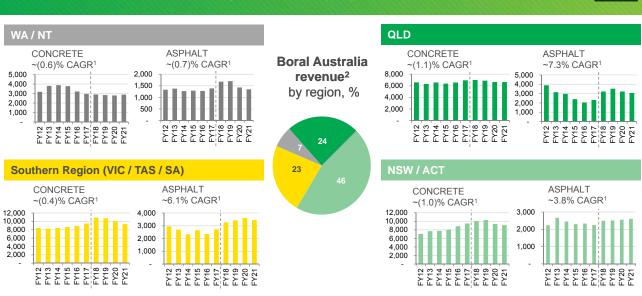






Activity by Geography
Well positioned to take advantage of historically high levels of activity





- Compound annual growth rate from FY2017 to FY2021 forecast by Macromonitor, February 2018 (Concrete in '000 m³ and Asphalt in '000 tonnes) Based on 1HFY2018 split of Boral Australia external revenue

# **USG BORAL**

Brisbane, Queensland

16 May 2018



USGBoral.com Plasterboard Ceilings Interior Finishes Metal Framing Substrates



# **AN ATTRACTIVE GROWTH PLATFORM**



## PART 1: Frederic de Rougemont, CEO, USG Boral

- 1. Safety performance
- 2. Delivering on our JV strategy
- 3. Building on our position

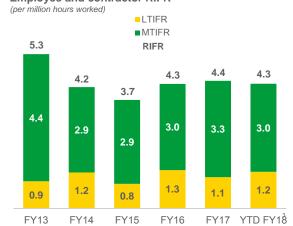
# PART 2: Tony Charnock, Senior Vice President Asia Pacific, USG Boral

4. Asia Pacific (Australia / New Zealand and Indonesia) - country dynamics and opportunities

# SAFETY PERFORMANCE



#### Employee and contractor RIFR<sup>1,2</sup>



- RIFR of 4.3 and LTIFR of 1.2 broadly steady on FY17
- Focusing on lead indicators to further improve safety outcomes
  - Safety conversations: collaborating, innovating and owning change around safety
  - Growing usage of CCTV reports
  - Program underway in all plants leading to a better understanding of 'at risk' (UPSET) conditions
  - Safe START program being piloted at Camellia site







- Recordable Injury Frequency Rate (RIFR) per million hours worked is made up of Lost Time Injury Frequency Rate (LTIFR) and Medical Treatment Injury Rate (MTIFR). Totals may not add due to rounding RIFR, LTIFR and MTIFR per million hours worked includes employees and contractors in 100%-owned businesses and all joint venture operations YTD FY18 refers to 9 months to 31 March 2018

61

# **DELIVERING ON OUR JV STRATEGY**

Frederic de Rougemont CEO, USG Boral



# **DELIVERING ON OUR JV STRATEGY**



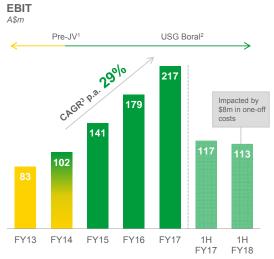
- ✓ Leveraging USG Boral's partnership to deliver revenue and earnings growth, including >US\$50m of synergies in <4 years
- ✓ Successful adoption of Sheetrock® leading to maintain / grow strong positions with price premium
- Expanded product portfolio delivering enhanced revenue and earnings
- Leveraging leading manufacturing platform to meet growing demand
- Driving innovation in building products and systems and accelerated adoption of plasterboard in partitions and walls
- ✓ Delivering customer excellence and leading solutions

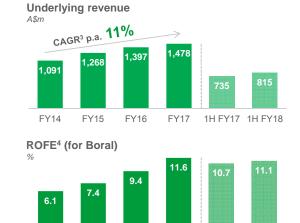
63

# **REVENUE AND EARNINGS GROWTH**



1H FY17 1H FY18





Delivering above Boral's cost of capital since FY17

FY17

FY16

- Boral Gypsum EBIT excluding significant items
  USG Boral underlying EBIT excluding significant items
  Compound annual growth rate from FY14 to FY17
  Based on Boral Gypsum / USG Boral divisional moving annual total EBIT (excluding significant items) on divisional funds employed (segment assets less segment liabilities) at period end

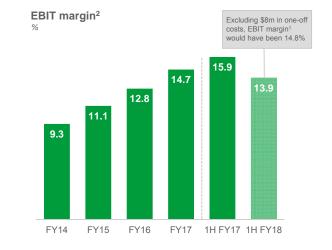
FY14

FY15

# DRIVERS OF PERFORMANCE



- Revenue CAGR of 11%1 p.a.
- Significant EBIT margin expansion
- Successful adoption of Sheetrock® brandstrengthening our position with price premium
- Synergies: revenue, adjacent products and costs
- Cost management
- Operational excellence
- In Australia and Korea:
  - enhanced product and customer mix
  - underlying market growth
  - robust pricing

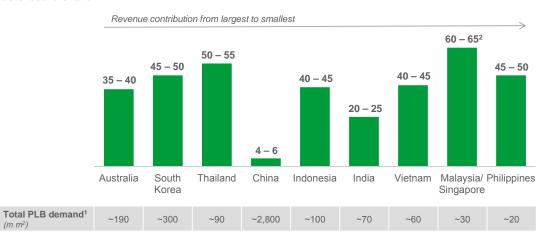


65

# STRONG GEOGRAPHIC POSITIONS



#### Plasterboard share<sup>1</sup>



<sup>1.</sup> USG Boral management estimates for FY17. Note that China 4-6% is based on total China demand however USG Boral's target segment in China is high-end segment only 2. Combined plasterboard share across Malaysia and Singapore

Compound annual growth rate from FY14 to FY17 Underlying EBIT (excluding significant items) to revenue





- · Price benefiting from increasing contribution from Sheetrock® and technical board
  - Sheetrock® premium achieved
- Strong economic conditions and construction activity in developed markets delivered price growth
- Competitive price pressures in Thailand, Indonesia and Vietnam
- Significant price growth in China in 1H FY18 due to temporary supply constraints and waste paper inflation
- Cost inflation partially offset through price and optimising product mix

1. Average selling price

#### Plasterboard ASP1 - pcp

	Australia	Korea	Thailand	China	Indonesia
FY14	1	1	$\Leftrightarrow$	1	1
FY15	1	1	$\Leftrightarrow$	$\leftrightarrow$	1
FY16	1	1	1	$\leftrightarrow$	$\Leftrightarrow$
FY17	1	1	1	$\leftrightarrow$	
1H FY18	1	1	1	1	1

#### Growing contribution from Sheetrock®

% of plasterboard revenue



67

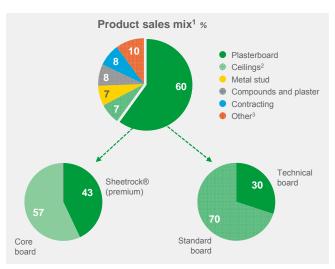
# **EXPANDED PRODUCT PORTFOLIO**



- Customer focused full product suite / system solutions
  - Growing loyalty of our customers to our brand (distributors, subcontractors, contractors)
  - Enhancing revenue and earnings



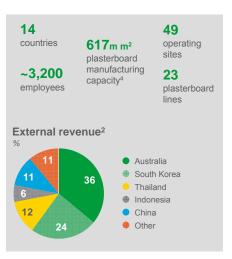
Metal ceiling



- Based on split of 1H FY18 underlying revenue for USG Boral
   Includes ceiling tile and ceiling grid
   Other includes gypsum, cornice, others

# **LEADING REGIONAL FOOTPRINT**







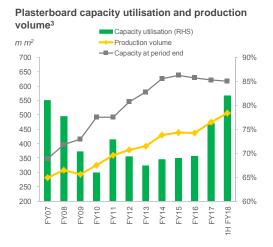
- Excludes additional capacity planned in India and Vietnam Based on 1H FV18 underlying revenue for USG Boral As at April 2018. Certain manufacturing facilities and gypsum mines held in JV with third parties Production of plasterboard and other products may be at the same physical location



# **CAPACITY UTILISATION REFLECTING GROWING DEMAND**



- Average capacity utilisation of 82% across network in 1H FY18, up from ~76% in FY171
- Plasterboard production volume CAGR<sup>2</sup> of 6% p.a. (including Aus/NZ) and 7% p.a. in Asia (excluding Aus/NZ) since FY07



- Based on total production capacity at period end and annualised for 1H FY2018 Compound annual growth rate Includes plasterboard and gypsum ceiling tile volumes

70

69

# **BUILDING ON OUR POSITION**





- Continue growing high margin sales with innovative products and solutions
  - Sheetrock 2.0
  - Technical board
  - Ensemble™ Acoustical Drywall Ceiling
- · Market segmentation to deliver higher margin
  - Commercial sector buildings supplied with more technical products and adjacent solutions (acoustic ceilings, building facades)
  - Focus on customers valuing the product range
  - Strengthen distributors' network







- USG Next Generation Sheetrock providing opportunities for USG Boral
  - USG launched Sheetrock® Brand EcoSmart Panels in USA in March 2017
  - Lighter weight with stronger sag performance
  - Strong sustainability attributes: lower carbon emissions and less water used in manufacturing
- · Initial trials completed at Pinkenba
- · In the next 12 months
  - More work required to optimise technology to achieve preferred product differentiation
  - Assessing customer value proposition
  - Assessing opportunity of reducing energy and gypsum costs

73





## EasyFinish™ – Wall Lining and Partition Systems

- Accelerate plasterboard adoption in wall partitions as step towards cavity walls in emerging countries
- Convert cement render system to plasterboard lining system
- Market test phase completed in Thailand and Indonesia
- Broader rollout to China, Malaysia, Philippines and Vietnam

Winning in the partition segment by sticking plasterboard on traditional masonry walls



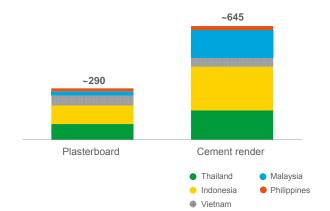


### **EASYFINISH**<sup>TM</sup>

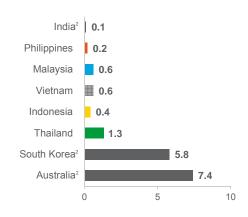
### **OPPORTUNITY TO CONVERT CEMENT RENDER TO** PLASTERBOARD ACROSS SE ASIA



### Plasterboard vs cement render demand<sup>1</sup>



Plasterboard demand per capita<sup>1</sup> m² p.a. per person



- USG Boral management estimates Included for comparative purposes

75

### **RESPONDING TO OPPORTUNITIES AND CHALLENGES**



#### Australia

Knauf Bundaberg started in Queensland

- Grow innovation and commercial segment
- Building a niche, high-end position in New Zealand with Sheetrock® from Pinkenba

#### South Korea

Competitor capacity expansion has started

- Optimised customer / product mix and margins following termination of long-term supply agreement with Byucksan
- Innovation and commercial segment

#### China

Significant paper and gypsum inflation and tight supply

- Successfully achieving strong price increases
- Strong business performance in high-end, growing Sheetrock® penetration and new product offerings, focus on home deco segment

#### Thailand and Indonesia

Protracted soft construction markets, cost inflation and new entrants / capacity

- Protect premium brand with development of a mid-tier brand
- Accelerate penetration of plasterboard in cement render segment with EasyFinish<sup>TM</sup>
- Grow exports from Thailand

#### Other countries

- Vietnam: strong growth, benefits from Sheetrock® but competitive price pressures
- Philippines: strong growth with well recognised brand
- India: Strong growth with significant potential



## CAPACITY EXPANSIONS TO SUPPORT DEMAND GROWTH



#### India - Chennai

- New 30m m<sup>2</sup> plant under construction expected to be completed FY20
- Leverages our market presence including brand, customer relationships and know how established in Southern India
- Servicing high growth market with 1.3bn population, country GDP ~7% p.a. and one of the lowest plasterboard penetration rates among developing countries

#### Vietnam - Ho Chi Minh

- Capacity expansion of 17m m<sup>2</sup> expected to be completed EY20
- Upgrading and restarting Ho Chi Minh line 1, currently mothballed
- Addresses existing supply constraints
- Supports strong growth, with country GDP ~6% p.a. and further penetration and adoption of plasterboard and related products



\_\_\_





Disciplined project management focus

Additional LEAN and 6 Sigma resources

Focused plant reliability excellence program

Targeted cost reduction capital improvements

Continued supply chain excellence focus

New focus on SE Asia logistics

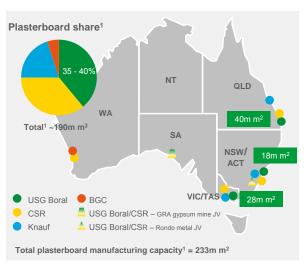
## PART 2: AUSTRALIA / NEW ZEALAND AND INDONESIA

Tony Charnock Senior Vice President, Asia Pacific

79

## AUSTRALIA COUNTRY DYNAMICS



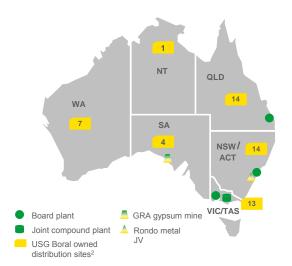


- Demand remains robust despite multi-residential activity moderating YTD FY18
- Expect moderate softening in activity in FY19 but remain well above historical averages underpinned by east coast detached housing and commercial projects
- Industry utilisation to fall following new entrant in Queensland but remain >80% at current demand
- · USG Boral has a leading plasterboard position

1. USG Boral management estimates







- Sheetrock® produced at Camellia (NSW), Pinkenba (Qld) and Port Melbourne (Vic)
  - Sheetrock® adoption rates > 90%
- Strong distribution network comprising USG Boral owned and independent distributors plus retail distributors
- Significant revenue growth since JV formation driven by strong volume growth and solid price growth; prices moderated in 1H FY18





Compound annual growth rate from FY14 to FY17
 Includes Rondo distribution sites owned in JV with CSR

81

### **OPPORTUNITIES**



- ✓ Grow commercial segment exposure
- ✓ NextGen 2.0
- ✓ New products
- Leverage Pinkenba capacity to grow New Zealand niche market
- ✓ Operational cost improvements



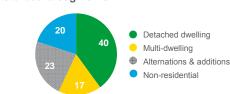


# BUILDING COMMERCIAL SECTOR GROWTH



- Commercial sector including multi-residential high rise, education, health care, hotels, retail projects
- · Best in class architectural specification and engineering teams
- Value engineering support highly valued by commercial developers and contractors
- Invested in best in class Building Information Modelling (BIM) technology for architects, designers and contractors with 100k models (data rich) covering full catalogue

#### Plasterboard segments<sup>1</sup>



1. USG Boral management estimates based on 1H FY18 revenue









- High adoption of Sheetrock® achieved
  - Customers recognised superior product attributes and benefits: lighter weight, sag-resistant, stronger
  - Price premium achieved
- · NextGen 2.0
  - Optimising technology to achieve preferred product differentiation
  - Developing value proposition
- · Grow new products
  - Ensemble™ Acoustical Drywall Ceiling
  - Sheetrock® Ultralightweight Joint Compound
  - USG Securock® Glass-Mat Roof Board and Gypsum-Fibre Roof Board









- Build niche high-end position in plasterboard and related products
  - ~27m m² plasterboard demand¹
- Existing strong positions in joint compound and mineral fibre ceiling grid
- · Footprint established
  - Leveraging Sheetrock® capacity at Pinkenba
  - Distribution warehouses in Auckland and Wellington
- Metal roll forming business sold to Rondo in Feb-2018
  - Rondo will continue to supply USG Boral NZ
- · Winning work and establishing relationships



Securock® gypsum fibre roof board (under bitumen sealer)

Pla	etarh	oard (	comn	etitor
ria	Sterb	oaru (	comp	eutor

Fletcher	Winstone Wall Boards
Fietcher	Only local manufacturer of plasterboard

1. USG Boral management estimate

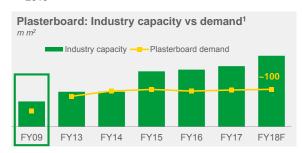
85

### **INDONESIA**





- · Demand continues to be subdued
- Competitive price pressures driven by excess industry capacity
- Competitors building new capacity recognising strong growth potential from increased product penetration
- Expect economic recovery with increased political stability in 2019



1. USG Boral management estimates

- USG Boral: Player in high-end retail and project segments and growing presence in mid-tier segment
- Knauf, St Gobain and Yoshino are key competitors in mid-tier segment
- Aplus and other brands compete in low-end retail segment



1. USG Boral management estimates

## OUR BRAND OFFERING MULTI-SEGMENT APPROACH





- Indo Board launched January 2016
- Growing mid-tier segment
- Retailers channel

88







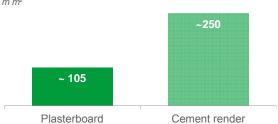
1. USG Boral management estimates based on plasterboard sales volumes

89

# EASYFINISHTM ACCELERATING PENETRATION IN WALL PARTITIONS



### Plasterboard vs cement render demand $m m^2$



- Accelerate plasterboard adoption in wall partitions as step towards cavity walls in emerging countries
- Leverage EasyFinish™ to convert cement render system to plasterboard lining system
- · Very positive initial take-up in Indonesia but early days
- · Initial focus on hotels and multi-residential projects

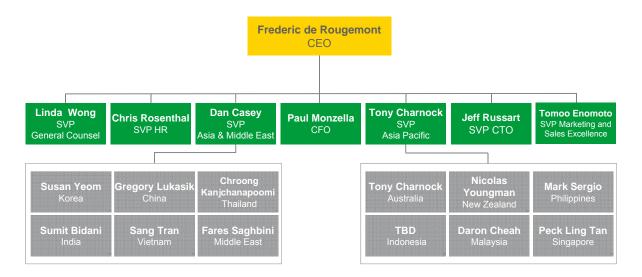


Branz, Gold Coast, West Vista Apartment Jakarta



### **EXECUTIVE TEAM**



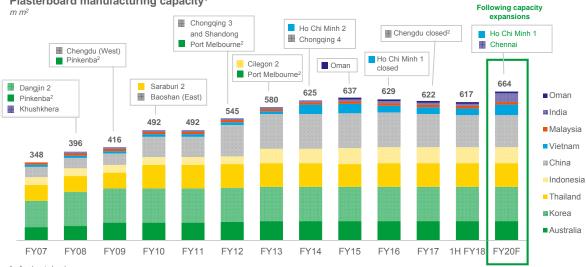




### **MANUFACTURING CAPACITY BENEFITING FROM PRIOR INVESTMENT**







As at period end
 Capacity expansion / closures recognised over two financial years

93

### **EXTENSIVE INFRASTRUCTURE**



		Plasterboard			Metal products	Mineral fibre ceiling tile	Joint compound	Gypsum	Other	
	_	pacity	Plants	Board	Ceiling	Plants	Plants	Plants	Mine	Plants
	m m²	bsf <sup>3</sup>		lines	lines				-	
Total	617	6.6		23		11		12		
Australia	86	0.9	3	3		14		1	17	2 cornice
Korea	153	1.6	3	4	1			2		
China	143	1.5	4	6	1	3	16	3		Mineral wool <sup>6</sup>
Thailand	105 <sup>1</sup>	1.1 <sup>1</sup>	2	3 <sup>1</sup>	1 <sup>1</sup>	1		1	1	
Indonesia	72	0.8	2	3	1	1		1		
Vietnam	30	0.3	1	1	1	1				
India	9	0.1	1	1		24		1		
Malay./Sing	11.1	0.1	1	1	1	14		2		
Saudi Arab.						1 <sup>5</sup>	1 <sup>5</sup>	15		
Oman	8 <sup>2</sup>	0.12	1	12					12	

- 71% ownership interest in SGI. Boonya gypsum mine and PLT are 100% owned Owned in JV with Zawawi Minerals; own 55% of mine. 100% owned plasterboard plant
- Billion square feet 50/50 JV with CSR (Rondo)

- 45/55 JV with local partner Saudi Structured Contracting Company 50/50 Star-USG JV with BBMG Group 50/50 JV with CSR (GRA)



### PRODUCTION CAPACITY BY PLANT



Overall production capacity: 617m m²

Country	Plant	Capacity, m m <sup>2</sup>	Sheetrock <sup>1</sup>
Australia	Pinkenba	40	✓
3 plants, 3 lines	Port Melbourne	28	✓
Total: 86m m <sup>2</sup>	Camellia	18	✓
Korea	Ulsan	46	✓
3 plants, 4 lines	Dangjin 1	37	✓
	Dangjin 2	35	✓
Total: 153m m <sup>2</sup>	Yosu	35	
China 4 plants, 6 lines	Baoshan	35	✓
	Shandong	35	✓
	Chongqing 2	13	
	Chongqing 3 & 4	30	✓
Total: 143m m <sup>2</sup>	Pudong	30	

Country	Plant	Capacity, m m²	Sheetrock <sup>1</sup>
Thailand	Saraburi 1	50	✓
2 plants, 3 lines	Saraburi 2	35	✓
Total: 105m m <sup>2</sup>	Songkhla	20	✓
Indonesia	Cilegon 1	26	✓
2 plants, 3 lines	Cilegon 2	30	✓
Total: 72m m <sup>2</sup>	Gresik	17	✓
Vietnam	Ho Chi Minh 2	30	✓
Malaysia	Parit Buntar	11	✓
India	Khushkhera	9	✓
Oman	Oman	8	✓

<sup>1.</sup> Plants with Sheetrock® technology