

Build something great™



# Boral Asphalt

COMPANY PROFILE

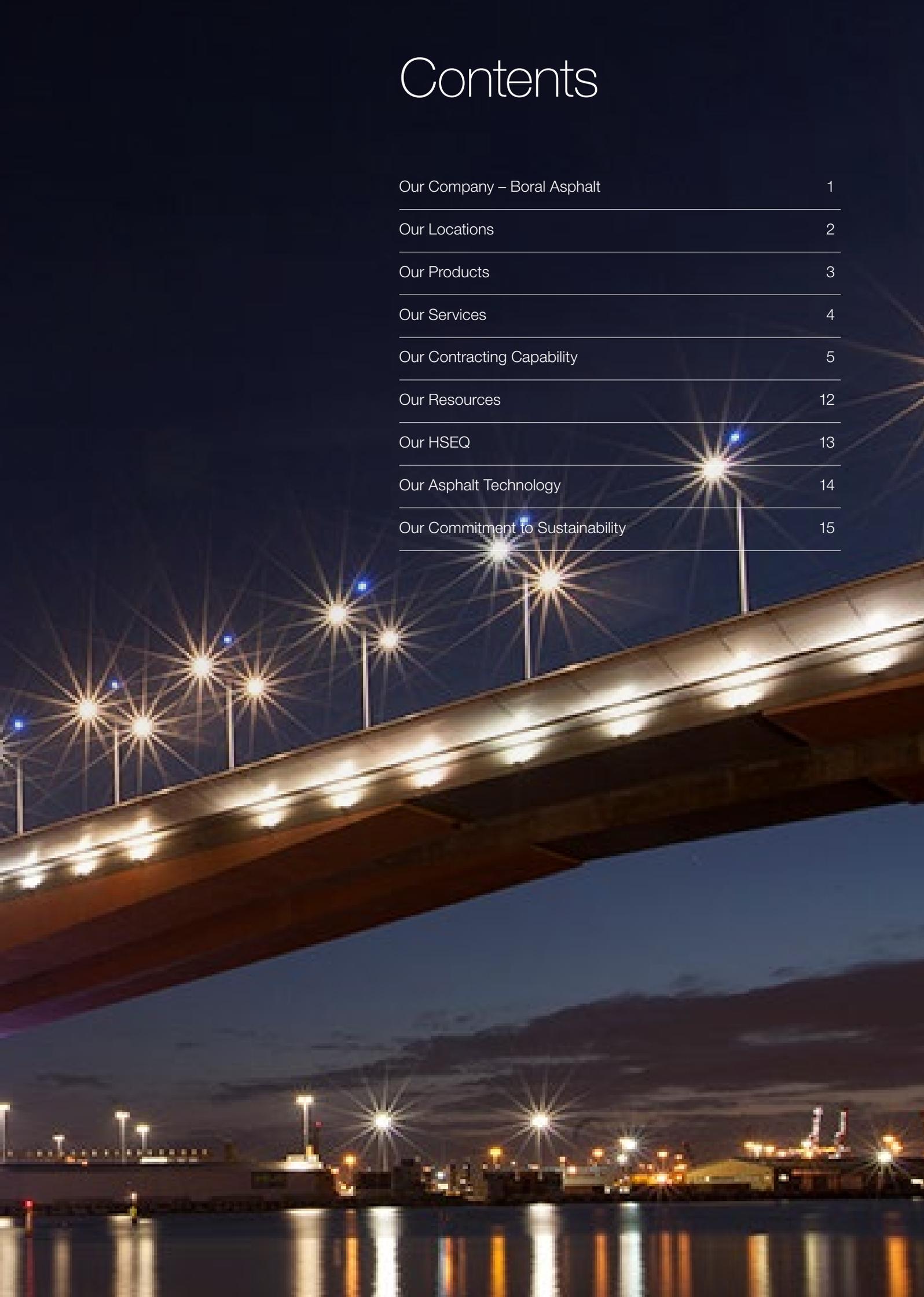
2018 EDITION





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# Our Company

## Purpose

Our purpose is to be the leading producer and applicator of bituminous products in Australia. We will achieve this by listening to our customers and providing sustainable total pavement solutions tailored to their needs. This is made possible with support from our outstanding team of people and investment in industry-leading technology.

## Structure

Boral Asphalt is part of the Construction Materials Division of a global company, listed on the Australian Stock Exchange as Boral Limited. The largest division of Boral Limited, Construction Materials has a national structure that operates over 400 quarry, concrete, asphalt and transport sites throughout Australia.

Our vertical structure provides direct access to raw materials and resources from other businesses in the Boral family, providing assurance that all inputs are directly controlled. Integration also provides seamless responsibility for quality and timely delivery of all products and services.

The connections across construction products and businesses within one company enables customers to draw on staff with a diverse range of industry expertise. Access to a large number of people from all our businesses also gives Boral flexibility to rapidly build up workforces to meet peak demands on large projects. This has made us a successful part of some of the biggest infrastructure projects in Australia, such as Peninsula Link, CityLink, EastLink, Safelink, M2 (Sydney), and Reid Highway (WA).

The asphalt business offers a range of products and services related to bitumen including the supply and placement of asphalt, application of spray seals and the provision of road maintenance services.

Our experience ranges from placing asphalt at major facilities such as airports and harbour precincts, and alliance contracts on some of the biggest road projects in capital cities, to work on local residential streets. We have applied spray seals throughout Australia's rural road network and have also delivered many multiple year term network maintenance contracts to road managers across the country.

## History

Boral has a proud history that commenced with incorporation on 4 March 1946 and continues today in the diversity of our multinational businesses across three continents in eight countries around the world. Boral Asphalt has a pure lineage to the original oil company that has remained defiantly Australian over all these years. Even the name Boral is an acronym of Bitumen and Oil Refineries Australia Limited. Our company has grown over this period into an ASX 100 company with over 15,000 people operating primarily in the Construction Materials and Building Products markets in Australia, with an evolving presence in the USA and Asia.

Boral is one of Australia's largest construction and building products suppliers with significant operations in the USA and Asia.



# Our Locations

Our business structure and technology allow us access to the far reaches of the continent, offshore territories and even neighbouring countries.

## Locations – Far and wide

Boral Asphalt has a footprint of over 50 plants and depots located across Australia. We operate in all states and territories with facilities in Queensland, New South Wales, Victoria, South Australia, Western Australia and ACT. The adaptability of our people and mobility of our technology allows us access to the far reaches of the continent, offshore territories and even neighbouring countries.

In addition to our presence in capital cities, Boral Asphalt has successfully worked in locations as far ranging as rural Tasmania, Papua New Guinea and Cocos Island. Inland projects span the northern regions of Western Australia, mining towns in central Queensland and remote parts of the Northern Territory.



# Our Products

## Our Products

Boral Asphalt supplies a full range of bituminous products and services for the construction and maintenance of roads, airports and industrial hard-stand areas. Products include:

- Hot and cold mix asphalt
- Spray seals
- Hot bitumen and bituminous emulsions
- Cutback bitumens, primes and pre-coating fluids

Our product range covers the performance needs across the spectrum of traffic and environmental conditions from major highways to low volume rural roads. All products are designed and manufactured to meet or exceed standards and specific client needs.

At Boral we pride ourselves in developing useful innovative products distinguished by excellent performance that serve our clients and industry. In many cases unique proprietary products have been developed to meet extreme conditions and applications with attributes that are unsurpassed by alternatives anywhere in the world.

We employ leading technologists in the industry and utilise state of the art equipment at our research laboratories to develop the best product solutions for our clients. Through our alliances with academia and research agencies as well as established international networks, we draw on the latest advances in technology from around the world to benefit Australian roads.

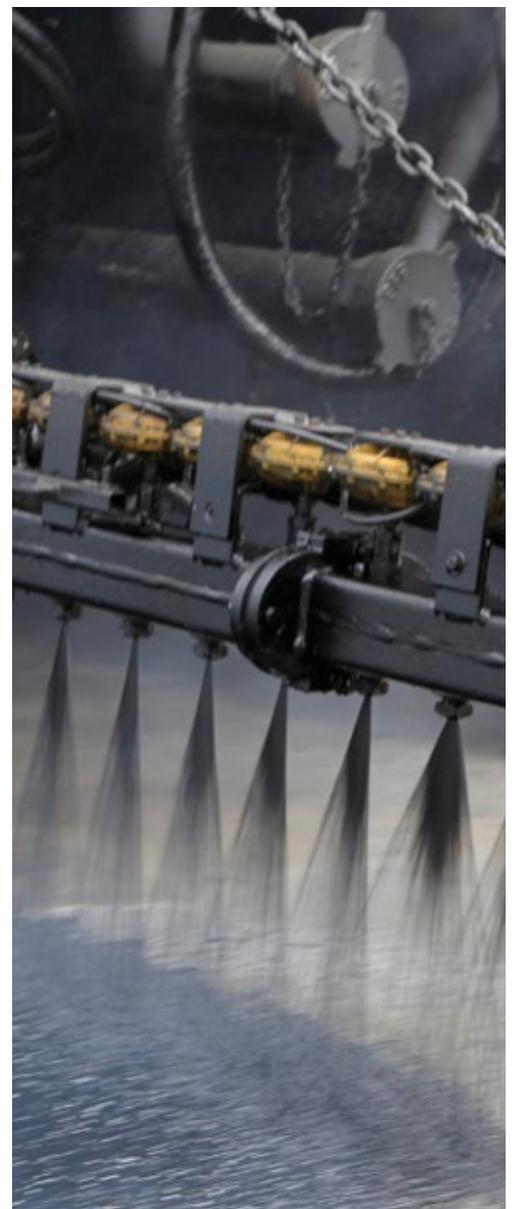
Some of the specialised products we have introduced are:

- WarmPave Asphalt
- Durapave frictional asphalt surfacing
- Portmix (High Strength Asphalt) for extra high loading conditions
- Novachip ultra thin asphalt surfacing
- LoNoise Asphalt wearing course
- Long Haul Asphalt for paving in remote areas
- GATT self-priming graded spray surfacing for gravel roads or reseals
- Premium cold mix patching material (PPR)
- Coloured asphalt and surface coats

Our proprietary asphalt products and a comprehensive suite of standard products are produced using industry best manufacturing processes and well embedded quality management systems at production plants throughout Australia.

For more details on our products please refer to [www.boral.com.au/products/asphalt](http://www.boral.com.au/products/asphalt) or the Boral Asphalt Product Manual.

At Boral we pride ourselves on developing useful innovative products distinguished by excellent performance that serves our clients and industry.



# Our Services

Our activities are supported by an experienced management team of technical and business experts focused on value for money, use of the latest processes, timely delivery and absolute accountability for results that exceed client expectations.



## Services

Boral Asphalt is a leader in our industry through the comprehensive and extensive range of services that complement the products we supply. Because our products cover almost all bituminous road technologies, we provide a total pavement solution that aims to ensure what is built is the most appropriate for the application. Furthermore, Boral's integrated company structure gives us the option to combine our construction material services into a single package. This is backed by a strongly interfaced bank of knowledge so clients can receive the greatest benefits possible.

Our comprehensive services include:

- Asphalt delivery
- Asphalt placement
- Asphalt and binder testing
- Spray seal application
- Road maintenance services
- Dust suppression application
- Project management (of all services associated with road and road reserve activities)
  - Project scheduling
  - Co-ordination of pavement milling, traffic control, linemarking, and civil construction
  - Road stabilisation
- Specialist surfacing applications
- Pavement design and rehabilitation advice
- Asphalt mix design
- Spray seal design
- Maintenance and rehabilitation solutions
- Surfacing selection
- Site investigation and trouble shooting
- Material performance reviews

Our services are delivered by highly trained and experienced people who are acknowledged for their contribution to our industry. We have a large number and network of asphalt and spray seal crews throughout the country as well as specific contracting services that include but are not limited to profiling and paving, binder transport and spraying, chip spreading and rolling. Our activities are supported by an experienced management team of technical and business experts who are focused on value for money, use of the latest processes, timely delivery and absolute accountability, so clients get results that exceed expectations.

Our operations, in turn, are supported by several quality assurance laboratories located at a number of asphalt plants. These units are strongly backed by the central materials testing laboratory situated in Baulkham Hills, New South Wales where we have a comprehensive range of test equipment and peer recognised technologists busy on the next breakthrough in road pavement technology. Together, our testing and development facilities have the capability to develop and conduct performance tests on new asphalts and binders.

Technology services in our company are guided by our National Asphalt Technology Group. Through this group, knowledge is endorsed and transferred company wide so the most current specialist services and advice are made available to clients regardless of location.

# Our Contracting Capability

## Our Contracting Capability

Boral Asphalt is the only major asphalt supplier in Australia not aligned to a commercial civil contracting business and as such offers expertise that is pointedly focused on asphalt, spray seal and other bituminous materials.

The upstream raw material access available to us enables the delivery of a high level of materials expertise in the construction of the entire pavement befitting the requirements of major projects.

A single supply source for all pavement and building materials provides greater client control, clear accountability and promotes timely delivery to meet challenging schedules.

We have successfully partnered many contractors over the years, more recently in large scale alliance contracts, to deliver some of Australia's biggest road infrastructure projects.

Boral Asphalt has a history and capability in undertaking asphalt projects of all sizes in Australia and neighbouring countries. We have successfully provided:

- Seaports and container terminals
- Periodic maintenance and rehabilitation contracts for road agencies such as municipalities
- Term, network, complete-service maintenance contracts
- Residential subdivisions
- Commercial subdivisions
- Recreational reserves and car parks
- Car racing and go-cart track surfacing

Our teams, crews and machines are diverse and competent enough to meet the challenges of changing project scale and complexity.

## Airports

Boral Asphalt has a long and respected history of paving and maintaining airport pavements throughout Australia, and off-shore facilities. A specific attribute we have utilised for airports is our ability to design asphalt mixes to meet the strict requirements of airport material specifications by sourcing aggregates dedicated to the project made easier by access to our own quarries. We draw on our vast pool of people from all over the country, when necessary, to get the best crews and project management team with the required skills to achieve the unique challenges of airport pavement construction. Our management approach has seen the production of high volumes of asphalt around the clock with some asphalt plants dedicated solely to the airport works, if required, so that quality and timeframes are met or exceeded.

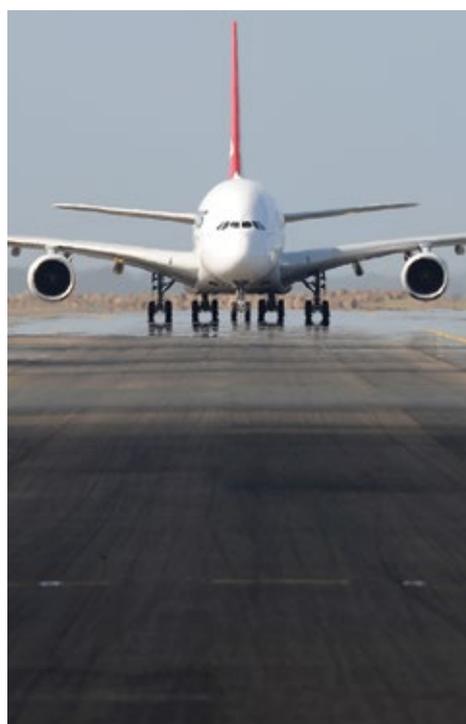
We have nominated a specialist team of management and technical experts at a national level to deliver airport contracts. This team has priority access to the materials and people throughout our business so clients have the satisfaction of knowing the best in the industry are focused on delivering quality airport pavements. Our experts have strong networks with peers overseas and this provides access to the latest international techniques in airport pavement construction and standards. Boral has used this approach on projects such as the asphalt overlay of Sydney Airport.

A single supply source for all pavement and building materials provides greater control by the client, clear accountability and promotes timely delivery to meet challenging schedules.



Sydney Airport

In major infrastructure works as with all projects, a crucial attribute Boral brings to the partnership is our ability to liaise with local and indigenous communities and address the personal needs that residents have when we work in their neighbourhood.



When Boral is engaged on an airport project, some of the key attributes we contribute are:

- An airport project leadership team
- A project management team
- Specialised asphalt mix design
- The ability to manufacture aggregates for specific airport asphalt due to vertical integration with our own quarries
- Airport pavement design and rehabilitation technologists
- Airport crews experienced in airport paving

Airport Contracts	Client	Value	Period
Norfolk Island Airport rehab	Norfolk Island Administration	\$12m	2006
Cairns Airport runway	Cairns Port Authority	\$7.4m	2007-2009
Longreach Airport runway	QLD Airports	\$6m	2008
RAAF Base Tindal taxiways	Leighton Contractors	\$3.1m	2009-2010
Sydney Airport	SACL	\$18m	2010-2011
Mt Gambier Airport	District Council of Grant	\$3.2m	2012
Cairns Airport	Cairns Port Authority	\$5m	2015-2017
Wellcamp Airport	Wagners	\$9.5m	2014
Miles Airport	Leighton Contractors	\$4m	2012
Gold Coast Airport	SEE Civil	\$5m	2017

## Large Infrastructure Projects

Our asphalt business has been intrinsically involved in some of the biggest road infrastructure projects in Australia from Safelink in Brisbane to EastLink in Melbourne and Reid Highway in Perth. Please refer to table under “Major Road Projects” for examples of work recently completed by Boral Asphalt across Australia.

In these projects, Boral participation has varied from that of an alliance partner on some projects to a supplier partner in others, but always in strong collaborative relationships and as a supportive team member. In many instances, the ties built in one project have flowed onto even greater rapport and benefits in subsequent work.

### The precise advantages Boral can offer large infrastructure projects are:

- Supplying the bulk of road and bridge building materials through its own quarry, asphalt, concrete and transport businesses
- Reliability of a large company in the top 100 of the ASX with relevant commercial acumen
- Global reach to the latest technology and ability to innovate
- Availability of experienced, trained and qualified crews anywhere in Australia
- Availability of a large number of asphalt and spray seal equipment to facilitate fast large volume output
- The use of material transfer devices for greater on-site flexibility and uniformity of surface finish
- Specialised, leading technology instruments to achieve exceptional ride quality
- Advanced project management that includes the management of other sub-contractors (line-marking, profiling, signal and traffic loop installation etc)
- Intra-company pavement, seal and asphalt mix design experts.

## Major Road Projects

Major road projects delivered directly to state road authorities or major civil contractors is a regular operation of Boral Asphalt business. We have an extensive history of successful asphalt pavement placement on projects such as road duplications, intersection upgrades and rehabilitation and overlay applications on major facilities in most metropolitan centres throughout the country. When major projects are undertaken, there is strong focus on comprehensive project management, including:

- Establishing team relationships with clients and all relevant participants of the project
- Strategic planning of activities and daily job programming
- Quality assurance and contract management
- A structured implementation of safety initiatives such as group safety seminars, tool box meetings and JSAs
- Continuous project review

Our experiences with major projects on a national scale have impacted on the economic development and transport strategy at both state and local government level.

Road Projects	Client	Value	Period
Clem Jones Tunnel	QDTMR	\$3b*	2005-2008
Gateway Upgrade	QDTMR	\$1.88b*	2006-2011
Ipswich/Logan Hwy Interchange Upgrade	QDTMR	\$260m*	2006-2009
South West Transit Corridor	QDTMR	\$220m*	2007-2009
SAFElink	QDTMR	\$75m	2006-2010
Western & Eastern Reseals	QDTMR	\$8.9m	2009-2010
North West Reseals	QDTMR	\$7m	2008-2010
Asphalt Panel Contract	RMS	\$70m	2007-2009
Windsor Road Upgrade Mile End Road to Boundary Vineyard	RMS	\$8.5m	2006-2007
F3 Freeway Widening Mt White to Coolah	RMS	\$5.8m	2006-2007
EastLink	VicRoads	\$50m	2006-2007
Deer Park Bypass	VicRoads	\$20m	2008-2009
VicRoads North West Metro Maintenance	VicRoads	\$16m	2007-2010
Calder Freeway Spray Seal	VicRoads	\$5m	2007-2009
Sturt Highway, Scott Road to Daveyston	DTEI	\$20m	2008-2009
Sturt Highway, Greenock to Seppeltsfield	DTEI	\$9m	2010
Eastern Region Reseals	DTEI	\$7m	2009-2011
New Perth Bunbury Hwy	MRWA	\$511m*	2006-2009
Great Eastern Highway, Perth	MRWA	\$300m*	2011-2013
Best Roads maintenance contract	MRWA	\$150m*	2001-2011
Reid Hwy	MRWA	\$300m*	2009-2010
Peninsula Link, Melbourne	VicRoads	\$760m*	2011-2013

\* Total Project

Our Asphalt business has been intrinsically involved in some of the biggest road infrastructure projects in Australia.



Calder Freeway Spray Seal

## Seaports & Container Terminals

The asphalt business has been deeply involved in the development of innovative deformation resistant mixes for ports and container terminal pavements over many years. Drawing on the latest in materials science and the research carried out at Boral's own high-tech laboratories, we have engineered products for use specifically in straddle carrier and container forklift environments.

As a result of this research, Boral has innovations such as Portmix asphalt. Portmix has been designed to resist the types of loadings experienced at ports that handle containers.

Special manufacturing and placement processes are implemented to ensure that these mixes meet or exceed the intended performance levels agreed.

The unique loading, geological and climatic conditions require great attention to detail. In addition, Boral manages its work programs, selects machinery and assigns specialised crews to accommodate logistics of the site. Works of this nature have been successfully undertaken at Port Botany, Port of Brisbane, and, East/West Swanson and Webb Docks in Melbourne.

Container Contracts	Client	Value	Period
Port Kembla multi-purpose berth	Port Kembla Port Corp.	\$3.8m	2008-2009
Port of Brisbane container terminal	Patricks	\$2m	2009-2010
Kewdale Freight Terminal	Kewdale Freight	\$1.2m	2010
Enfield Intermodal Logistics Centre	Sydney Ports Corporation	\$150m	2009-2013





## Surface & Pavement Rehabilitation Contract Work

The regular annual work at Boral is comprised partly of road surface rehabilitation contracts. These contracts are issued by state road authorities and municipalities and may involve removal and replacement of asphalt surfacing, application of asphalt overlays or spray seal and sometimes deep asphalt patching.

The same contracting and production diligence is applied to all our work and perennial contracts attract close attention to scheduling, customer needs, safety and sustainable practices.

We will often propose alternatives or assist our clients to create new solutions that can increase whole of life cost benefits for asset managers. Boral has developed innovative thin asphalt surfacings such as Novachip, Durapave and small nominal aggregate size stone mastic asphalt as suitable options in rehabilitation as well as new construction.

Although local road surfacing rehabilitation is often managed through municipal contracts, there are instances when special grant schemes operate where a local community would directly administer road surfacing works. In these cases, we have engaged with local residents and community groups to meet their needs.

We will often propose alternatives or assist our clients to create new solutions that can increase whole of life cost benefits for asset managers.

A key attribute is our ability to work within the flexible timeframe of staged works – standard practice in this environment – and still assist our clients to meet all quality and specification requirements.



## Term Network Maintenance Contracting

Boral was one of the first asphalt suppliers to become a principal provider of term network maintenance in the 1990s. In contracts of this nature a full range of services from fence line to fence line on road reserves was delivered.

These services include:

- Kerb and channel repair and maintenance
- Rework on bluestone, brick pavers, concrete or asphalt
- Pavement repairs and pothole patching
- Footpath repair and reconstruction
- Stream and watercourse maintenance
- Regrading of gravel roads and shoulders
- Drainage systems and pits cleaning and repair
- Service opening reinstatements and re-levelling of utility caps, valves or manhole covers
- Shoulder and road reserve maintenance and grass cutting
- Routine network inspections and reporting
- Asset condition surveys and operation of asset management systems
- Emergency Response services for distressed assets.

Term network contract structures are generally managed by a dedicated maintenance team with its own governance and can be embedded in client maintenance businesses.

We have successfully delivered multiple year term network maintenance contracts to state road authorities, municipalities and private contractors.

Some of our clients include: VicRoads, RMS-NSW, Transfield Services, MRWA (via Bestroads), City Of Melville (WA), Hobsons Bay Council (VIC), Greater Bendigo Council (VIC), Yarra Ranges Council (VIC) and Melton Council (VIC).

## Residential Subdivisions

Paving or spray sealing residential subdivisions is a significant part of Boral Asphalt's typical work load for the year. Our main clients for this work are civil contractors and sub-division developers in most major cities and regions in the country.

Boral works with its clients to schedule works around contingencies such as inclement weather and to accommodate the fluctuations in time taken by other construction activities that our clients need to manage.

The specific benefit we offer for this type of work is the large pool of resources we draw on which includes experienced crews, multiple sets of gear and immense technical innovation to deal with variations that our clients encounter on site.

## Commercial Subdivisions

A significant share of Boral Asphalt's workload is in commercial subdivisions and we have worked with many of the largest subdivision contractors in Australia.

A key attribute is our ability to work within the flexible timeframe of staged works that is standard practice in this environment and still assist our clients to meet all quality and specification requirements. We have specialist crews of different sizes able to cater for a vast range of tasks from small scale asphalt work on footpaths and trenches to full scale construction of sub-division road networks.

## Reserves, Sports Arenas & Carparks

Our crews are competent and experienced enough to adapt to scale of works and can deliver high quality asphalt or spray seals on minor jobs like reserve access roads, sports playing surfaces and carparks. We are familiar with the unique requirements for smooth and level finishes on surfaces that are also expected to withstand frequent turning movements without failing.

Boral has introduced speciality products that cater for the unique demands of this environment, including colour treatments for delineation.

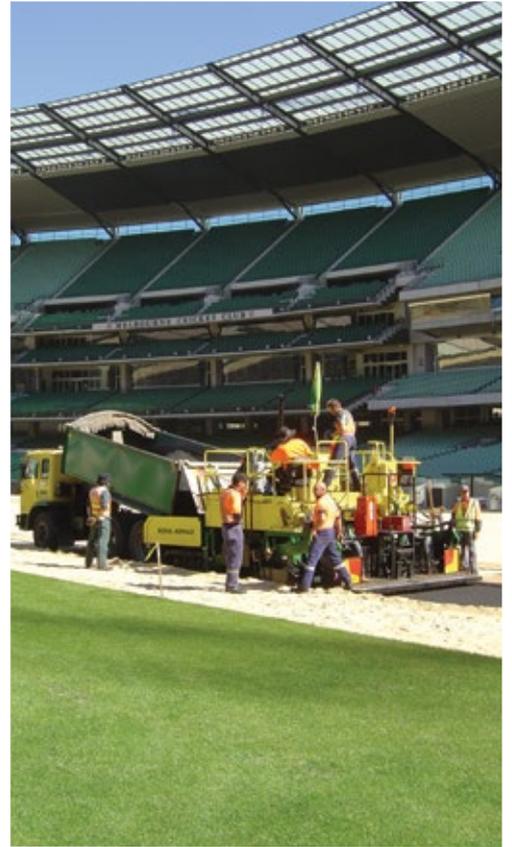
## Go-Cart & Car Racetrack Surfacing

Car racetracks and go-cart track surfacings need a unique blend of high technology asphalt, crew competency and procedural awareness which Boral can provide.

We have not only delivered asphalt to international specification on V8 Supercar, Formula One and drag racing tracks but also developed solutions to meet the high shear and tyre surface temperature needs associated with typical go-cart tracks.

Boral also recognises that race track works require detail attention to compaction, careful location of paver joints and minimising handwork, while construction on street circuits needs to account for heavily loaded vehicles when returned to normal service. Amongst the tracks on which Boral has recently worked are:

- V8 Supercar Track – Gold Coast (QLD)
- Townsville Go-Cart track (QLD)
- Calder Thunderdome Dragstrip (VIC)
- Newcastle 500 (NSW)



# Our Resources

Many of our specialists hold key positions on industry bodies and are well regarded for their leadership and contribution to knowledge in their disciplines.



## Resources

As a national asphalt company Boral has access to a vast pool of resources from fixed and mobile plant and equipment to people greatly skilled in the variety of disciplines in construction materials and road building.

Our resources include:

- Over 35 fixed and mobile asphalt plants and 80 crews
- Asphalt pavers, profilers, shuttle buggies, tippers, steel and pneumatic tyred rollers
- Mobile crumbed rubber bitumen blenders
- Importation of bitumen into Victoria and Western Australia
- A national fleet of over 40 bitumen sprayers and surface dressing equipment; and
- Binder tankers and storage trailers, tippers, chip spreaders, multi tyred rollers and brooms

We have flexibility through scale to meet seasonal or major project demands around Australia and the ability to multi-skill our people. These attributes give us readily available and experienced resources that can be rapidly deployed to service projects at short notice. Similarly, our large national inventory of plant and equipment becomes available for any escalation in demand that may occur.

There are many instances when spray sealing crews are bolstered in size to meet the demands of large, remote resealing contracts and other instances when asphalt crews and equipment from several states band together for a major project in a capital city.

Boral Asphalt values education and training of its employees and many of our specialists hold key positions on industry bodies and are well regarded for their leadership and contribution to knowledge in their disciplines. When challenges arise, clients can be assured that the best people are engaged from within Boral's extensive network to develop a solution or deliver an outcome.

Several major projects have relied on our ability to source plant and skilled people from around Australia to achieve completion on time and on budget without compromising on quality.



## Health, Safety, Environment & Quality Assurance

Boral has adopted a Zero Harm policy because harm to our people is unacceptable. The health and safety of our people throughout the business and that of the general public with which we interact is our main, non-negotiable priority. Health and safety is a key performance indicator for all positions of responsibility. Activities and processes are regularly reviewed to remove any threat to wellbeing.

Our aim is to eliminate the circumstances under which people can be injured so that our services are delivered with the utmost care and professionalism. We have managed to maintain a very high standard in health, safety and environment management under demanding schedules on some of the largest, high profile infrastructure projects in Australia over decades of service.

Boral's approach to health, safety, environment and quality assurance is built on a solid foundation of corporate policies, standards and procedures. A highly developed quality management system underpins our operations and complements health, safety and environment strategies and goals.

Our laboratories are NATA accredited, not only to ensure reliability and accuracy of our test results but also to meet or exceed the requirements for environmental and quality assurance accreditation in our industry.

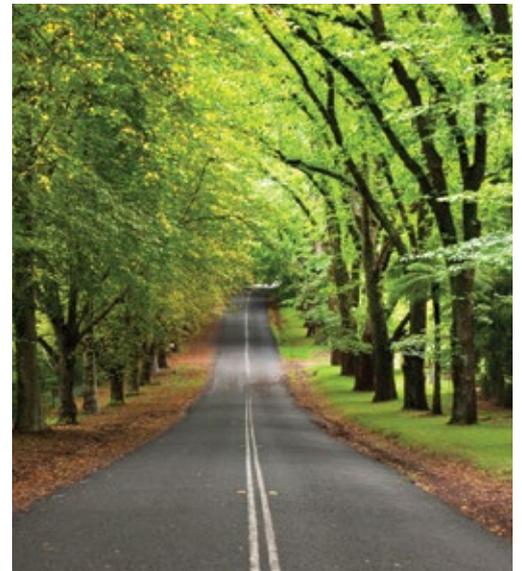
Boral Asphalt is firmly committed to innovations that reduce its environmental footprint, reduce risk and enhance the wellbeing of its employees and the community. Examples of innovations that meet these requirements include the development and implementation of:

- Warm mix asphalt
- The use of waste materials in asphalt mixes including RAP, rubber tyre buffings, steel slag and crushed glass
- Design of pavements that can minimise raw material usage
- Design of surfacings that can reduce noise, reduce water spray and increase skid resistance
- Onsite blending of crumbed rubber for modifying bitumen for use in spray seals.

We actively monitor environmental impact by assessing and reporting green house gas emissions from our operations and always adopt changes that support principles of sustainability.

Consequently, we aim to exercise the highest level of health, safety and environmental management and strive to ensure our work is quality assured and meets or exceeds best possible standards.

A highly developed quality management system underpins our operations and complements health, safety and environment strategies and goals.



# Our Asphalt Technology

With growing demand on surfacings to perform under increasing traffic, Boral Asphalt aims to continuously improve the performance of our products.

## Asphalt technology

Boral is a leader in innovative asphalt technology having developed an extensive range of high performance and unique bituminous road products. We recognise the need to continuously improve the performance properties of our products with growing demand being placed on our surfacings to perform under increasing traffic. Motorists are demanding to drive on more even surfaces with improved skid resistance and reduced water spray in wet weather. Communities living within close proximity of highways are also desiring quieter road surfaces.

To meet these demands we are committed to research and development so that we can introduce new ways to help meet the challenges faced by tomorrow's pavements. We also believe that, where possible, we should transfer proven technology from overseas by regularly scanning the market and adapting it to suit local conditions and materials.

As the demand for durable roads increases, part of our focus has been on the development of "perpetual pavements" that use advanced materials for superior strength and flexibility. These pavements and materials are more resilient to loadings and can reduce the amount of maintenance intervention required. This can minimise disruptions to road users, reduce downtime for operations and increase amenity for our communities.

Our latest innovations have been applied in the form of long life surfacings with reduced thickness on major roads in capital cities while other asphalt products with high deformation resistance have been placed in ports and industrial precincts. We have also applied innovative treatments in low traffic rural environments so that communities can save money while transitioning to better pavement structures and the improved amenity they bring.



# Our Commitment to Sustainability

## Our Commitment to Sustainability

Sustainable practices and recycling are entrenched tenets of the way we do business.

Every opportunity is taken to reduce energy usage and minimise waste while simultaneously developing new technologies that allow us to preserve natural resources for future generations.

At Boral Asphalt, we have developed warm mix asphalt technology and use recycled asphalt in the manufacture of new mixes wherever possible. Contemporary approaches to sustainability include combining these technologies to produce Boral proprietary products like WarmPave Asphalt. We hope products of this nature will assist clients to meet carbon emission targets.

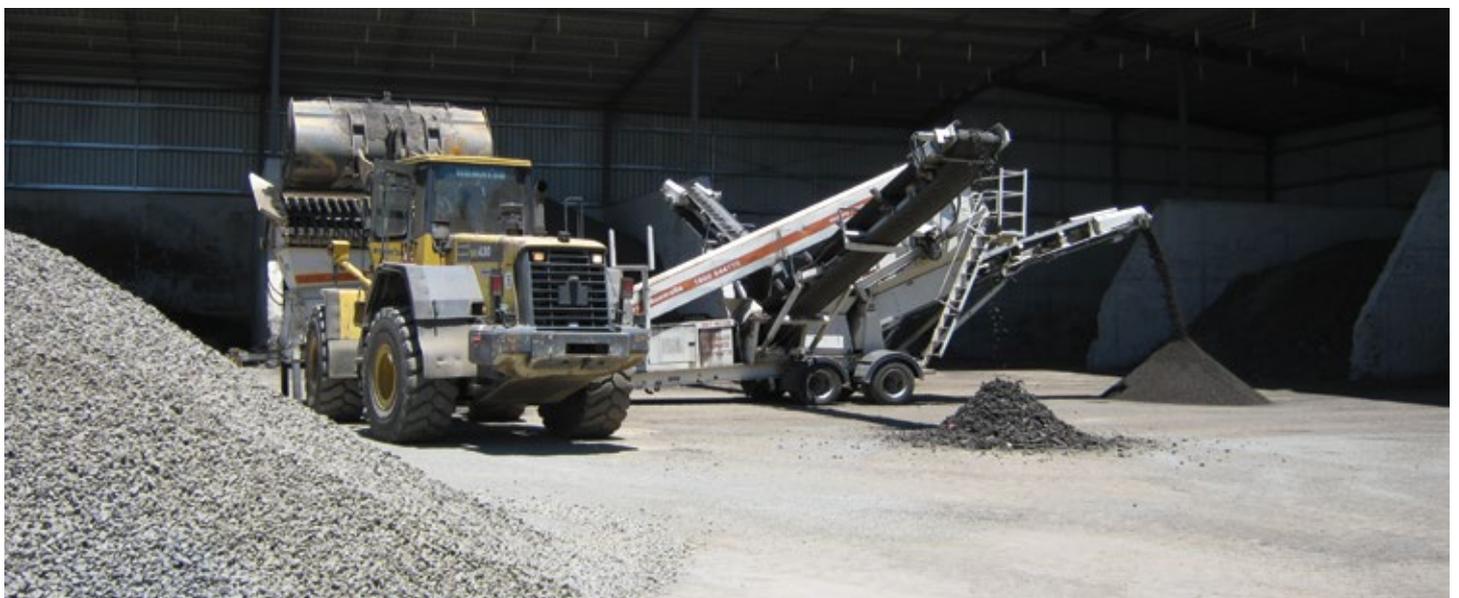
Asphalt research has indicated that it is possible to build a “perpetual pavement” with asphalt where only the surface layer needs to be replaced to ensure that the pavement will continually, in theory last forever. Boral technologists actively promote the development of “perpetual pavements” as a way of reducing the demand on natural resources. Investigations are regularly underway into ways to turn industry waste such as steel slag, used vehicle tyres, glass and lime from brick kilns into useable materials and to improve specifications so they provide more fit for purpose designs. These pro-active measures decrease the amount of waste that goes into landfill and reduce the energy expended in producing new materials.

Sustainability practices also include the use of innovative asphalt surfacing mixes that can be placed in very thin layers, therefore reducing the consumption of raw materials and the excavation of existing pavement materials that then need to be disposed of.

Another technological enhancement that supports sustainability is the use of polymer modified bitumen in asphalt and recycled rubber modified bitumen in spray seals which can increase durability and may reduce whole of life costs.

Each new technology that emerges through Boral as well as all existing ones are evaluated against sustainability measures so we can ensure our work supports the improvements in quality of life for current and future generations.

At Boral Asphalt, we have developed warm mix asphalt technology and use recycled asphalt in the manufacture of new mixes wherever possible.





### **Boral website:**

Visit the Boral website for the full range of Boral products: [www.boral.com.au](http://www.boral.com.au)

### **Asphalt information:**

For asphalt news and information visit: [www.boral.com.au/products/asphalt](http://www.boral.com.au/products/asphalt)

For the full range of Asphalt products see: [www.boral.com.au/products/list/66](http://www.boral.com.au/products/list/66)

For asphalt locations around Australia go to: [www.boral.com.au/locations](http://www.boral.com.au/locations)

### **Contact us:**

At Boral we are committed to excellence in service so for further information please contact:

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QLD (07) 3268 8011  
SA (08) 8425 0400  
WA (08) 9451 6466

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

**SDS:** A Safety Data Sheet is available on the Boral website or by contacting Boral Asphalt customer service.

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