

BRIDGESTONE

**LOW ROLLING RESISTANCE
ECOPIA TRUCK TYRES
& BANDAG RETREADS.**

HELPING YOU HELP THE
ENVIRONMENT.

ECOPIA



Bridgestone takes up the environmental challenges of today and tomorrow with Ecopia



Bridgestone aims to be your reliable and committed partner in reducing operating costs and in acting more responsibly towards the environment.

Ecopia is Bridgestone's flagship brand that helps to reduce CO₂ emissions through improving vehicle fuel efficiency.

BRIDGESTONE ***ECOPIA***

A wholehearted commitment to environmental protection

Bridgestone globally historically has a strong environmental conscience. In Australia over the last decade, we have spent millions of dollars investing in the protection of the environment, on such activities as:

- Development and manufacture of low rolling resistance tyres, resulting in reduced fuel consumption
- Noise reduction of factory plant and machinery
- Dust and emissions control measures
- Water recycling and monitoring of usage

Our ongoing commitment to ISO 14001: Environmental Management Systems accreditation is testament to our commitment to protecting our environment.

Environmental Mission Statement

To help ensure a healthy environment for current and future generations...

We, the Bridgestone group, are committed to continually working toward a sustainable society with integrity and in unity with our customers, partners, communities and the world around us.

Therefore, we are focused on three objectives.

- In harmony with nature**
To contribute to biodiversity through habitat enhancement, and through environmental education and research.
- Value natural resources**
To continually improve natural resource conservation through operational improvements and product design.
- Reduce CO₂ emissions**
To continually reduce emissions of Greenhouse Gases, including CO₂, from our products' complete life cycle.

The Bridgestone group's environmental mission covers all aspects of our business.

Products and Services
Operations
Environmental Communication
Community Activities
TEAMS

TEAMS: Total Environmental Advanced Management System
TEAMS unites the group under a progressive management system to help ensure a healthy environment.

One Team, One Planet.

BRIDGESTONE

Ecopia results in cost savings and in acting responsibly towards the environment

Cost savings

- Fuel savings
- Lower cost per kilometre

Acting responsibly towards the environment

- CO₂ emission reduction
- Recycling through retreading
- Economical use of raw materials

Reduce your CO₂ emissions

For every litre of diesel that is saved, 2.7kg* of CO₂ emissions are also saved, so you have the benefit of reduced carbon emissions as well as the fuel savings.

On average, a large fleet spending \$20 million on fuel uses 14.3 million litres of diesel per year. Change to Ecopia for:

Up to 6% total cost saving per year[^]

Up to 857,000 less litres of fuel used per year

Up to 2.3 million kg less CO₂ generated per year

If a fleet of 50 trucks changed to Ecopia, the reduction in fuel and carbon emissions would be the equivalent to taking 3 trucks off the road.

[^]Figures based on rolling resistance measurements of Bridgestone premium product and Bridgestone Ecopia then correlated to fuel savings using rolling resistance quotients calculated from Secrets of Better Fuel Economy, published by Cummins in 2006. Actual fuel consumption savings will depend on factors such as vehicle configuration, load, speed and driving style.

*1L of Diesel = 2.7kg of CO₂ emissions is listed on the Australian Government website www.environment.gov.au/settlements/transport/fuelguide/environment



Get a grip on all the factors which can reduce fuel and tyre costs



In other words, take charge of all controllable influencing factors:

Tyre selection

Maximise your impact on fuel consumption and CO₂ emissions through superior low rolling resistance tyres, developed using the newest technologies, and with little compromise on performance. The performance of new tyres is extended during the retread life, resulting in the lower total tyre life cost. Long service life also means the most economical use of raw materials. And do not forget that retreading is recycling.

Vehicle characteristics and maintenance

The advantages of good tyre selection and maintenance can easily be offset by vehicle characteristics and bad maintenance. The type of engine, air flow equipment and axle alignment are elements worth examining.

Tyre maintenance

Tyre pressure has a significant effect on fuel consumption and tyre life. A tyre which is 20% under-inflated will only last 75% of its service life. Bad tyre pressure management can wipe out fuel savings from low rolling resistance tyres. Regular checks are necessary to keep tyre pressure and mileage at the optimum level.

Driving behaviour

Education of efficient driving behaviour supported by the monitoring of on-board vehicle management systems is the recipe for fostering efficient driving styles. Drivers who drive efficiently consume on average 5 to 10% less fuel*, which is better for the environment and your costs.

*Source: www.truckbuyersguide.gov.au

Bridgestone tyre technologies are amongst the most advanced on the market

Ecopia compound

As drivers, we all have a responsibility to try to lessen the impact of our vehicles on the environment. As part of Bridgestone's commitment to this, we have created a tyre compound that reduces a vehicle's impact on the environment - without compromising on Bridgestone's legendary quality and safety.

The Ecopia compound is the result of global research and development of lower rolling resistance technology.

What is low rolling resistance?

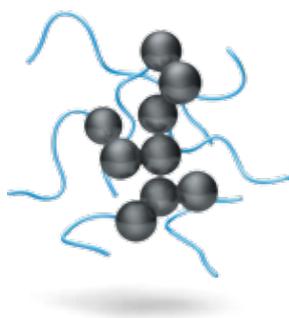
Rolling resistance is an important factor in determining fuel economy and CO₂ emissions. Put simply, it's the force required to roll a tyre. Lower rolling resistance means less fuel is required to power the vehicle, resulting in less CO₂ being emitted into the environment.

In a conventional tyre's compound, carbon molecules inside the tyre clump together, causing friction and generating heat. That leads to energy loss which increases rolling resistance.

The Ecopia compound features state-of-the-art reinforcement particle technology which keeps the carbon molecules dispersed, minimising energy loss and rolling resistance.

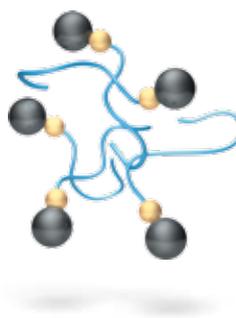
By choosing these tyres, you will reduce your fuel consumption and more importantly, reduce the amount of carbon dioxide being emitted into the atmosphere.

Keep your business efficient, stay safe, help the environment, choose Bridgestone.



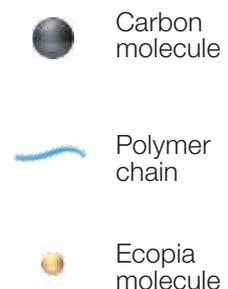
Standard carbon-reinforced compound

Carbon particles rub together during use, resulting in excess heat and loss of energy.



Ecopia compound

Featuring state-of-the-art reinforcement particle technology reducing heat build up and resultant rolling resistance without compromising on performance.

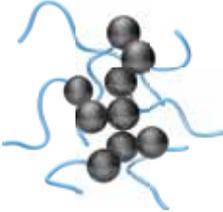
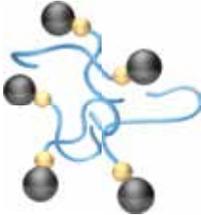


Bridgestone tyre technologies are amongst the most advanced on the market

State-of-the-art casing technology

The rolling resistance improvement predominantly comes from the technology in the casing, so:

- As the tyre wears, the rolling resistance advantage from the casing is still present.
- Casing advantage can be utilised for retreads.

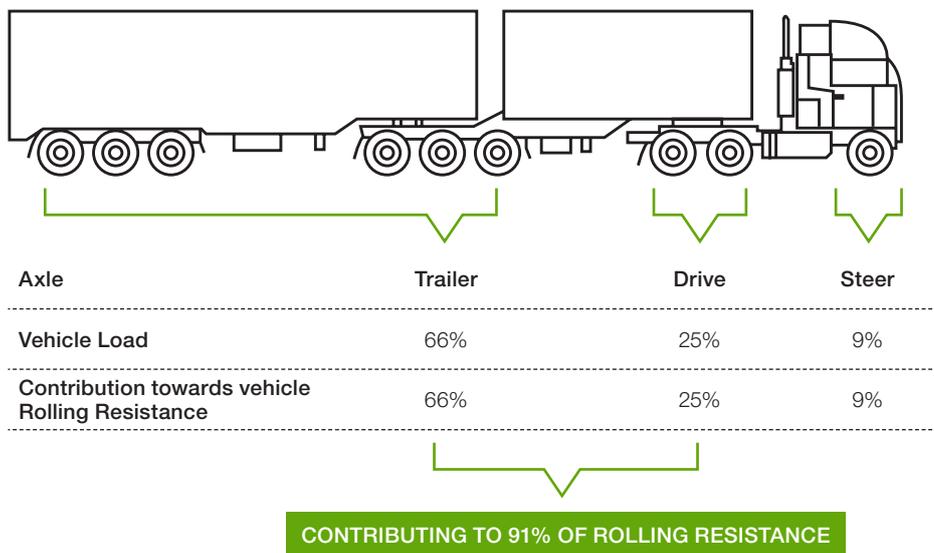
	Tyre shape	Sidewall compound	Tread compound
Conventional tyre		 <p>Conventional Compound</p>	Conventional Compound
Ecopia tyre		 <p>Ecopia Compound</p>	Conventional Compound

Ecopia new tyres: far beyond compromise

Fuel efficiency contribution of tyres by axle

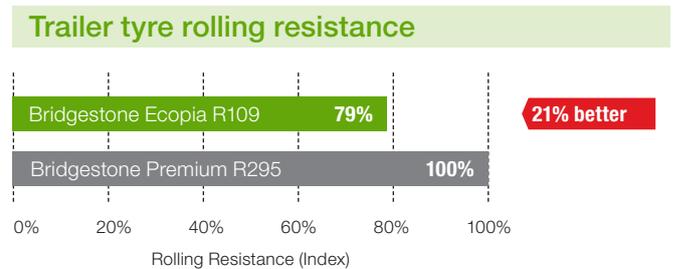
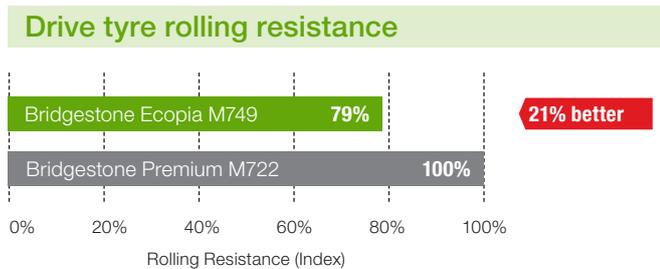
The tyres' contribution to overall fuel efficiency is proportional to the axle load.

- Trailer tyres account for most of the total tyre contribution for a B-Double
- Together with Drive tyres they account for 91% of vehicle's rolling resistance
- Therefore, it is the Trailer and Drive tyres which are most critical in terms of fuel efficiency



Ecopia for lower rolling resistance

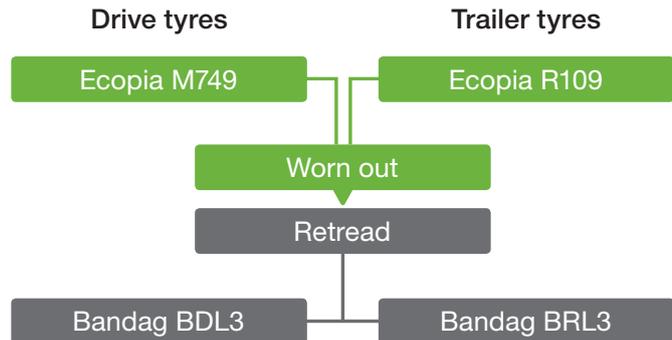
Bridgestone's new Ecopia tyres are designed to significantly reduce rolling resistance. Measured under controlled laboratory conditions, Ecopia M749 drive and R109 trailer tyres offered 21% less resistance than conventional tyres. The graphs below display results from the rolling resistance coefficient indoor drum test using Ecopia tyres.



Bandag Retreads: extend new tyre life

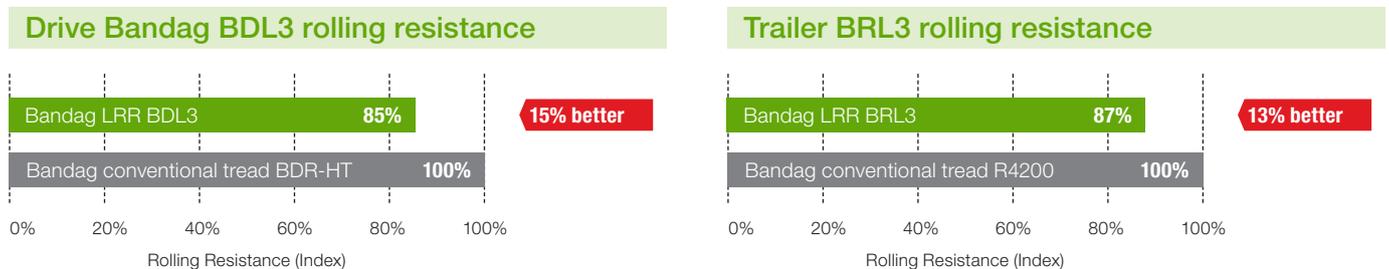
Bridgestone casing are built to last. Bandag retreads extend the new tyre life further into and second and sometimes a third life. A Bridgestone Ecopia casing is recommended to deliver optimal low rolling resistance performances.

The new Bridgestone Ecopia drive or trailer tyres can be retreaded with Bandag low rolling resistance BDL3 or BRL3 for continued fuel saving benefits.



Bandag low rolling resistance retreads

Bandag is the leader in tyre retreads. Even with laboratory testing against Bandag's own premium retreads, there was a consistent reduction in rolling resistance of at least 13%. The graphs below display results from the rolling resistance coefficient indoor drum test using Bandag tyres.



Retread production is better for the environment

It takes only 26 litres of oil to produce a retread, compared to 83 litres for a new tyre.



Bandag retreads & our environment

Retreading...our way to a better environment

When you choose Bandag retreads you choose to make a real contribution to the sustainability of our environment.

Why?

Retreading is a highly practical and efficient form of recycling. Retreading makes it possible to re-use worn tyres. Instead of dumping tyres with worn out tread and good sidewalls, they can be rebuilt and put back to work again, and again.

Commitment to the environment

Protecting our environment for future generations is also important to the employees of Bandag. Not only is the retreading process environmentally friendly but in November 2001 Bandag Manufacturing Pty Limited became accredited to ISO 14001 by a third party assessor.

Reduce pollution

With retreading, tyres stay on the road longer so fewer tyres pile up in landfill dumps. In 2012 Bandag saved 17,112 tonnes of waste going to landfill.

Conserve oil

To retread a worn truck tyre takes only one-third of the oil required to produce a new tyre. With approximately one million truck retreads produced annually in Australia, retreads are already helping to save around 60 million litres of oil every year.

Less energy

Bandag's unique, advanced Cold Process Retreading technique uses less energy to create a product with a wear performance similar to that of a new tyre. Whereas some retreads use a hot cap process with temperatures as high as 160 degrees Celsius to cure retreads, Bandag's specially developed process uses a low 99 degrees to bond the tread to the case.

Depending on its quality and condition, a well constructed truck or bus tyre, can be retreaded as many as 2 or 3 times, and only one worn tyre casing requires disposal instead of many.

Conserve resources

Bandag has invested significantly in rainwater harvesting equipment, which has the capacity to store up to 130,000 litres of water at any one time. In 2012 they saved 3,491,206 litres of water using this process.

When you choose Bandag retreads you choose to make a real contribution to the sustainability of our environment.



Product line up: new Ecopia tyres

Ecopia M749 drive

- Fuel efficient drive tyre
- Conventional tread compound
- No compromise on durability, irregular wear resistance and wet performance
- Excellent traction and wet weather handling
- Directional pattern
- Fuel saving casing for retreading



Size	LI/SS	OD	OW	Tread Depth (mm)	RPK	RW (inch)	Max Load (kg)*
11R22.5	148/145L	1056	283	18.3	313	7.50- 8.25	3075/2830

*Max Load @825kPa (single/dual)

Ecopia R109 trailer

- Fuel efficient trailer tyre
- Conventional tread compound
- No compromise on durability, irregular wear resistance and wet performance
- Can be used on steer axle of rigid trucks
- Fuel saving casing for retreading



Size	LI/SS	OD	OW	Tread Depth (mm)	RPK	RW (inch)	Max Load (kg)*
11R22.5	148/145L	1044	283	11.6	317	7.50- 8.25	3075/2830

*Max Load @825kPa (single/dual)



Product line up: Bandag retreads

Bandag BDL3 drive

- Fuel efficient drive tyre
- Low rolling resistance tread
- No compromise on durability, irregular wear resistance and wet performance
- Excellent traction and wet weather handling
- Fuel savings increased when applied to an Ecopia casing



Casing Size		Tread Width (mm)	Tread Depth (mm)
245/70R19.5	305/70R22.5	210	19.0
265/70R19.5	295/75R22.5	220	
305/70R19.5	275/80R22.5	230	
285/60R22.5	295/80R22.5	240	
295/60R22.5	315/80R22.5	250	
255/70R22.5	11R22.5		
275/70R22.5			

Bandag BRL3 trailer

- Fuel efficient trailer tyre
- Low rolling resistance tread
- No compromise on durability, irregular wear resistance and wet performance
- Can be used on drive axle of buses and small rigid trucks
- Fuel savings increased when applied to an Ecopia casing



Casing Size		Tread Width (mm)	Tread Depth (mm)
245/70R19.5	305/70R22.5	210	12.7
265/70R19.5	295/75R22.5	220	
305/70R19.5	275/80R22.5	230	
285/60R22.5	295/80R22.5	240	
295/60R22.5	315/80R22.5	250	
255/70R22.5	11R22.5		
275/70R22.5			



Environmentally Friendly.

We recycle for you and the planet.

Our Bridgestone Select stores, Service Centres and Tyre Centres use an accredited Australian Tyre Recycling Association member, like Tyrecycle, to collect and recycle old tyres. Their Code of Conduct compels them to store and dispose of waste tyres in a way that's ethical, environmentally friendly and authorised by the EPA.

The Boomerang Alliance verify our claims and undertake strict auditing of our tyre recyclers so we can ensure best environmental practise.

Recycling tyres also means less carbon emissions for a healthier climate.

This means peace of mind for you – and a new life for your tyres. They'll be turned into playground and road surfaces, soundproofing, tile adhesives and even rubber compound for new tyres.

By recycling 100% of our waste tyres we reduce our carbon footprint by over 60%.

For more information visit atra.org.au and boomerangalliance.org.au



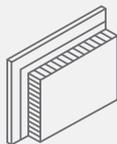
Some uses for old tyres.



Athletics tracks



Brake pads



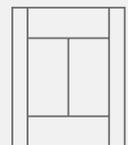
Building insulation



Marine non-slip surfaces



New tyre manufacture



Sporting surfaces



NATIONAL CUSTOMER SERVICE CENTRE
Corner Hanson & Cormack Roads Wingfield SA 5013
Toll free phone: 1800 188 034 Toll free fax: 1800 633 525
tyreorders@bridgestone.com.au

HEAD OFFICE
196 Greenhill Road, Eastwood SA 5063
Phone: 08 8206 0200 Fax: 08 8206 0299

NEW SOUTH WALES & AUSTRALIAN CAPITAL TERRITORY
148 Silverwater Road, Silverwater NSW 2128
Phone: 02 8756 4500 Fax: 02 8756 4550

VICTORIA & TASMANIA
365 Fitzgerald Road, Derrimut VIC 3030
Phone: 03 9369 2922 Fax: 03 9369 4455

QUEENSLAND
400 Nudgee Road, Hendra QLD 4011
Phone: 07 3868 0000 Fax: 07 3868 0089

SOUTH AUSTRALIA & NORTHERN TERRITORY
Corner Hanson & Cormack Roads, Wingfield SA 5013
Phone: 08 8348 9155 Fax: 08 8348 9111

WESTERN AUSTRALIA
516 Abernethy Road, Kewdale WA 6105
Phone: 08 9311 6666 Fax: 08 9311 6677