

Sustainable Products and Processes

Our commitment

Fulton Hogan is committed to continuing the transition of construction and maintenance in the road sector from a linear to a circular economy by reusing, recycling, creating and circulating.

This evolution is well advanced in with Reclaimed Asphalt Pavement (RAP), warm mix, crumb rubber, pavement recycling and glass sand being introduced and used by the sector over the last 30 years.

More recently, Fulton Hogan have been central to the development of methods for design and construction of pavements, which only need refurbishment (surface treatments), as principal investigators for the AAPA long life pavement design procedure.

The Circular Economy in Practice



We understand that our roads are not linear rubbish tips; they are highly complex engineering structures and a key to economic development.

Any sustainable product or process used in pavements must maintain the performance of the pavement, have a consistent quality and supply and must be cost competitive to current processes.

Most importantly, the product or process must not affect the sustainability of the world's most recycled product, asphalt.



Innovation and Collaboration



Fulton Hogan offers the experience and expertise of its pavement engineers supported by our dedicated Research and Development team. The intellectual property they have created over the years has consistently benefited for pavement owners.

As a technical leader in its field, Fulton Hogan takes pride in developing innovative solutions that provide environmental, financial and functional benefits to our customers. As our customers are seeking evermore sustainable cost effective and functional solutions, Fulton Hogan is continually looking at new products and processes to increase sustainability. Over the past 30 years, Fulton Hogan introduced the world's first 100% recycled pavement, lead the introduction of glass sand and wet blend crumb rubber asphalt, and has undertaken production and placement trials of asphalts produced with waste polymers, such as milk bottles, oil containers, plastic bags and drink bottles.

Our in-house design support benefits our clients by optimising both pavement, structural and material design ensuring material solutions meet both operational and sustainability goals.

Many consider Fulton Hogan's greatest strength to be our ability to work in a collaborative manner with our customers and communities. We focus on creating long-term trust based partnerships that develop innovative sustainable solutions that can work in with operational considerations that often exceed the environmental, quality and performance expectations.

Our Sustainable Products and Processes

Fulton Hogan offers a number of sustainable solutions for our customers, which can both improve performance and reduce cost, helping our customer's transition to the circular economy. At Fulton Hogan, we can work with our customers to optimise sustainable solutions based on available materials, economic and functional needs.

RAP

Fulton Hogan has been reusing asphalt mixes as Recycled Asphalt Pavement (RAP) for over 30 years and has reused over a million tonnes of RAP back into asphalt products – asphalt mixes or Bitumen Treated Bases (BTB's – effectively low bitumen content asphalts), reducing costs and the need for new resources.

While it is possible to produce asphalt with up to 99% RAP, due to the limitation on long-term sustainable rap supply the maximum sustainable RAP content in urban areas is typically no more than 30-40% and significantly lower in non-urban areas.

Glass Sand

Fulton Hogan has been using recycled glass in asphalt mixes before the year 2000 and over that period the equivalent of over 300 million glass bottles have been recycled in our asphalt. When processed correctly, glass sand is used as a direct replacement for both manufactured and natural sand. To ensure longevity, limits are placed on glass sand contents for both base and wearing course asphalts.



TyrePhalt

Over the past two years, Fulton Hogan have been working with LGAs, QTMR and MRWA on the development of our TyrePhalt wet blended crumb rubber modified asphalt product portfolio, (Open, Gap and Dense Graded). As part of this development, Fulton Hogan demonstrated how crumb rubber modified asphalt could be produced with warm mix technologies, lowering production temperatures, VOC emissions, fuming and lowering greenhouse gas emissions. In addition, mixes have been developed incorporating both RAP and recycled glass sand. This work continues Fulton Hogan's 30+ years of experience in producing crumb rubber modified binders for spray seals and dry blended crumb rubber asphalt mixes.

PlastiPhalt®

PlastiPhalt® is Fulton Hogan's polymer modified asphalt produced from polymers sourced from recycled waste plastics. Unlike other asphalts modified with recycled plastics, PlastiPhalt® uses specially selected single sourced polymers that incorporate fully into binder, improving performance to make a true PMB and is the only recycled binder compatible with the Austroads PMB framework.

Bitumen Treated Bases

Fulton Hogan use three methods for recycling of granular bases to produce bitumen stabilised materials, foam, emulsion and hot BTB's. These products are produced from recycled, unfractionated base or sub-base quality granular material.

Similar to cement stabilised bases BTB's produces a semi-bound material. However, compared to cement stabilisation, BTB's have significantly lower cracking risk. Additionally as BTB's do not rely primarily on cement hydration for strength gain, they are almost immediately trafficable.

Slag

Fulton Hogan has been using slag, the leftover by-product of metal processing (both steel and aluminium) in our asphalt mixes for over 20 years. Over this period Fulton Hogan has used in excess of 100,000 tonnes of slag. When processed and treated correctly, slag can be used as a direct replacement for mineral aggregate in the mix.

Warm Mix Technologies

Warm mix technologies are well established in Australia and have allowed the production of asphalt at much lower temperatures, with reductions of up to 50°C possible. Such drastic reductions have the obvious benefits of cutting fuel consumption and decreasing the production of greenhouse gases. In addition, engineering benefits include better compaction on the road, the ability to haul paving mix for longer distances, and extending the paving season by being able to pave at lower temperatures. Not to mention the safety benefits of lower temperatures for staff and road workers.

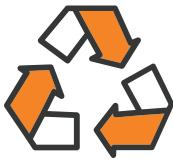
Due to slags high micro-texture, mixes produced with slag are also highly suitable for use as a high friction surface for high risk intersections where stopping distance is critical such as in areas of hoon behaviour where a high friction surface limits burn outs and tyre skidding.

Fulton Hogan's GripPhalt®, which includes slag, was developed specifically for this purpose. It provides 15%-20% improvement in skid resistance over standard asphalt mixes.

Sustainable products and processes



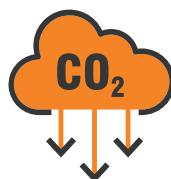
Locally Produced



Waste Recycling



Energy Efficient



Reduced Carbon Emissions



Chemical Substitution



Improved safety



Circular Resource



Improved Performance



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