Fulton Hogan

Environmental Product Declaration
In accordance with ISO 14025 and EN 15804:2012+A2:2019/AC:2021

AC14M R10

manufactured in Mile End

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EPD of a single product from a manufacturer (from one location).

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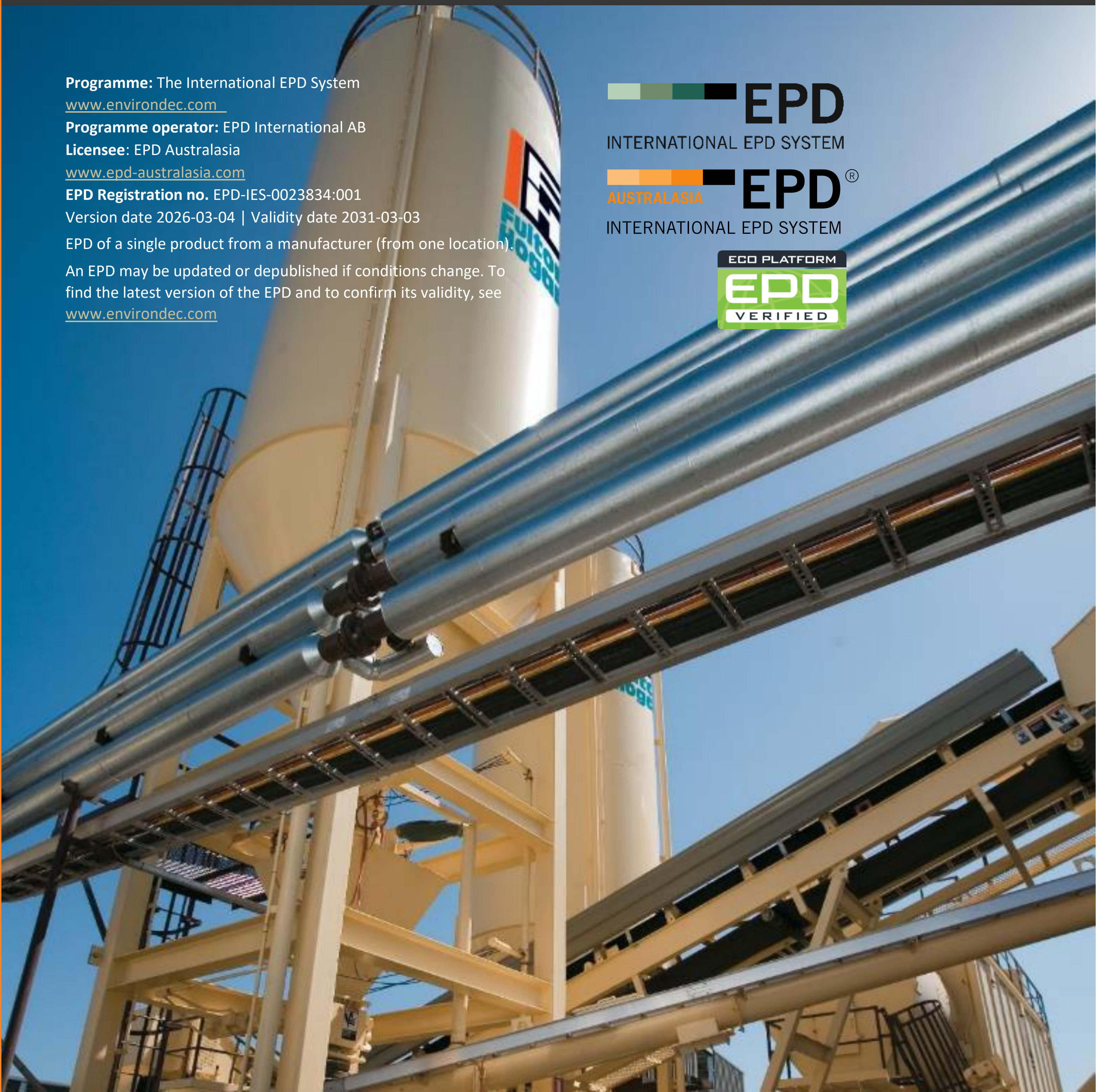

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EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

General information

An Environmental Product Declaration (EPD) is a standardised way of quantifying the potential environmental impacts of a product or system. EPDs are produced according to a consistent set of rules – Product Category Rules (PCR) – that define the requirements within a given product category. These rules are a key part of ISO 14025 as they enable transparency and comparability between EPDs.

This EPD provides environmental indicators for Fulton Hogan asphalt products manufactured in South Australia, Australia. This EPD is a "cradle-to-gate with modules C1-C4, D" declaration covering production of asphalt - including its supply chain - and end-of-life life cycle stages.

This EPD is verified to be compliant with EN 15804. EPDs of construction products may not be comparable if they do not comply with EN15804. EPDs within the same product category but from different programs or utilising different PCR documents may not be comparable, see the disclaimer on the previous page. Fulton Hogan Ltd, as the EPD owner, has the sole ownership, liability, and responsibility for the EPD.

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Product Category Rules (PCR)	**CEN standard EN 15804 served as the core Product Category Rules (PCR)**
PCR:	PCR 2019:14 Construction Products, Version 2.0.1, 2025-06-05 (valid until 2030-04-07) Technical guidance for developing EPDs according to EN 15804+A2:2019 for Asphalt mixtures – Australia, EPD Australasia, 27 April 2022
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Third-party verification:	Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ Individual EPD verification without a pre-verified LCA/EPD tool
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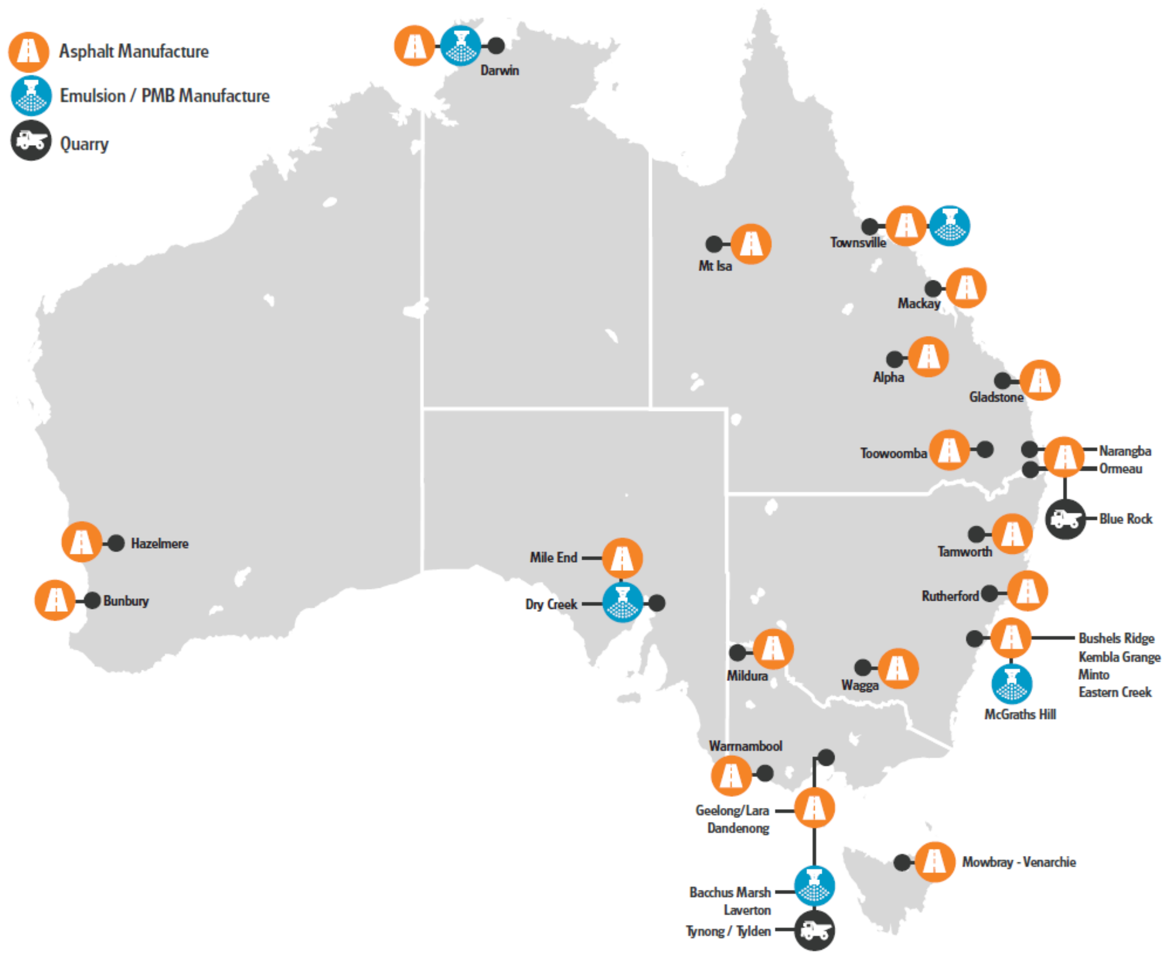
Information about the EPD Owner

Declaration Owner:	**Fulton Hogan Ltd** Address: Level 1, Bld 7, Botanicca Corporate Park, 572 Swan Street, Richmond, Vic 3121 Web: www.fultonhogan.com Phone: 03 9340 6200
LCA Accountability:	**start2see Pty Ltd** Address: Unit 8, 2-4 Kensington Rd, South Yarra, VIC 3141 Web: www.start2see.com.au Email: Rob.Rouwette@start2see.com.au Phone: +61 403 834 470

Fulton Hogan is a family-owned business, committed to ensuring the work we do today will make a real difference to the lives of our people and customers, the communities they call home, and the world we live in, tomorrow. In 1933, Jules Fulton and Bob Hogan teamed up to form Fulton Hogan. From there, we've grown to over 10,000 people. A family of real people dedicated to doing good work that connects and cares for communities across New Zealand, Australia and the South Pacific. From concrete, asphalt and aggregates through to signs and graphics, we've been supplying top quality construction products to the industry for over 50 years. Fulton Hogan started on roads. In the last 92 years we've gained vast experience across a range of sectors, including roads and transport infrastructure through to utilities and resources. We're all about keeping it REAL (Respect, Energy & Effort, Attitude and Leadership). These are the values at the core of everything we do. We see sustainability as the only way to do business. That's why we invest in the communities we work in, bridging gaps and creating economic value. It's our way of improving the world we'll live in tomorrow. We care for the communities we operate in. Fulton Hogan and our people donate time, money and services to strengthen our communities. Through our partnerships we support wellbeing, diversity, environment, education and innovation. Our decades of experience, combined with our wealth of plant and resources, give us the technical knowledge and skills to provide a wide range of construction services (including construction, surfacing, asset management, laboratories, transport and traffic management). Fulton Hogan are industry leaders in the research and development of high-performance asphaltic concrete, emulsions, spray seal, and polymer modified binders. Our technical staff are some of the best in the business, developing innovative road building materials, to ensure better long-term performance of our client's pavements. Senior members of our technical team work closely with clients in the civil construction and government sectors, to ensure that the products we develop, are not only relevant to their needs, but meet or exceed their stated technical, performance and environmental requirements. Our extensive experience in the structural design of pavements, has led to the development of a number of proprietary asphalt mix designs for motor racing circuits, airport runways, shipping container stacking yards, horse racing tracks, footpaths and residential roads.

Figure 1 - Fulton Hogan manufacturing and quarrying capabilities



Sustainability at Fulton Hogan

Sustainability in our industry means building and maintaining the critical infrastructure on which our nation depends. We believe resilient infrastructure will help tackle the challenges of a changing world, and we will continue to invest and innovate to play our part. In carrying out our work, it is essential that we act with integrity and respect for the environment and communities in which we operate.

Sustainability at Fulton Hogan means operating in a manner that ensures long-term resilience and viability by minimising environmental impact, upholding social responsibilities and maintaining business success.

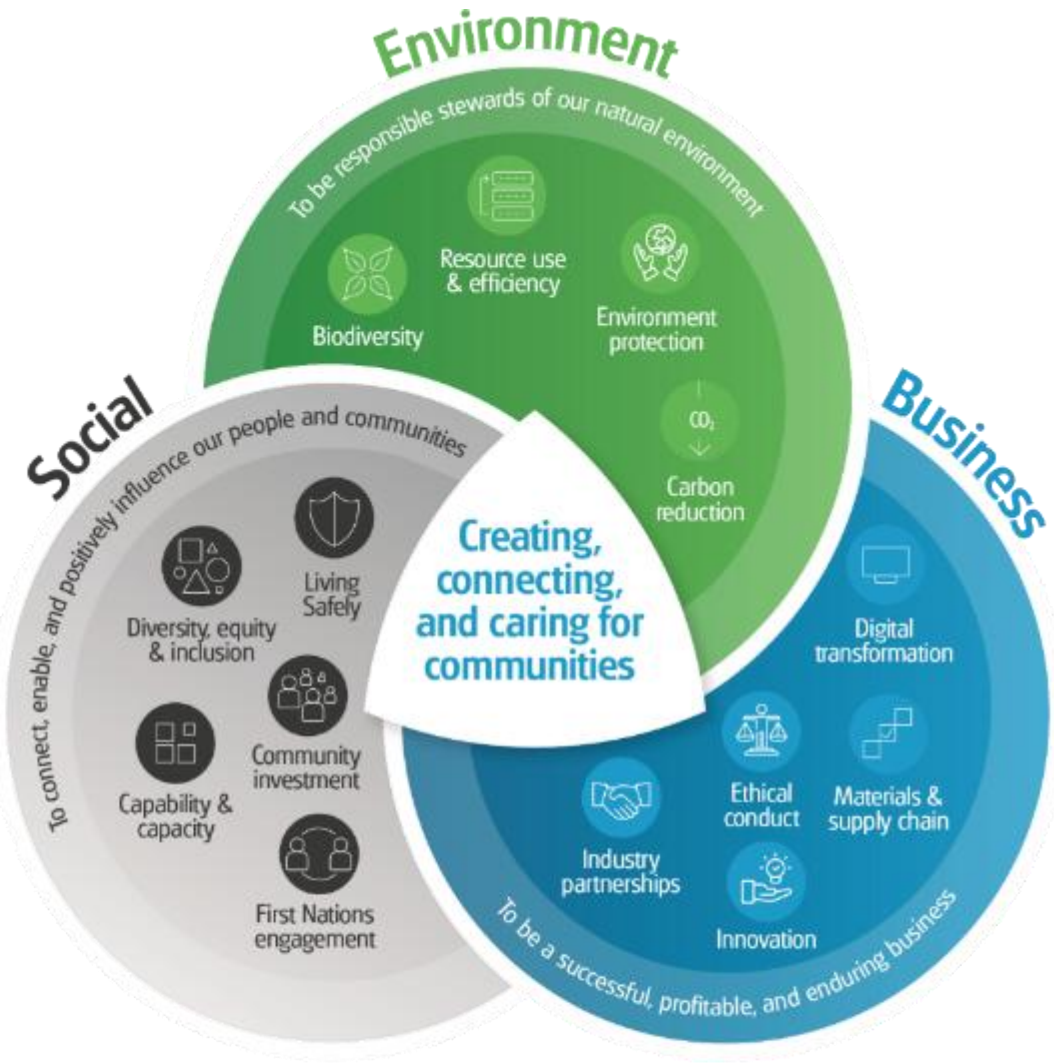
Our Group Sustainability Framework (Figure 2) depicts the interaction of focus areas within the pillars of social, environment and business to achieve our purpose of creating, connecting and caring for communities.

Our pavement solutions centre on the Environment and Business pillars through a commitment to developing and delivering quality, innovative products and services for our customers with a whole of life approach that embodies circular economy principles. This is front of mind when undertaking research and development which has led us to build an array of more sustainable products.

Under our Sustainability Framework we also commit to connect, enable and positively influence our people and communities through our Social pillar. We do this by investing in their future, fostering a supportive, fair and inclusive workplace, actively and respectfully engaging with First Nations people and putting safety and wellbeing at the heart of everything we do.

Fulton Hogan's Infrastructure Services team, along with our customers and partners, are committed to taking tangible steps towards sustainability and making positive contributions to the communities in which we work, live and play now, so that future generations can benefit.

Figure 2 - Fulton Hogan's Group Sustainability Framework



Sustainability at Fulton Hogan (cont.)

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

We understand our roads are highly complex engineering structures and a key to economic development. A sustainable product or process used in pavements must therefore maintain the performance of the pavement, have a consistent quality and supply and must be cost competitive to current processes.

Importantly, the product or process must not impact the future recyclability of asphalt which is currently a highly recyclable pavement solution.

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 pavement owners.

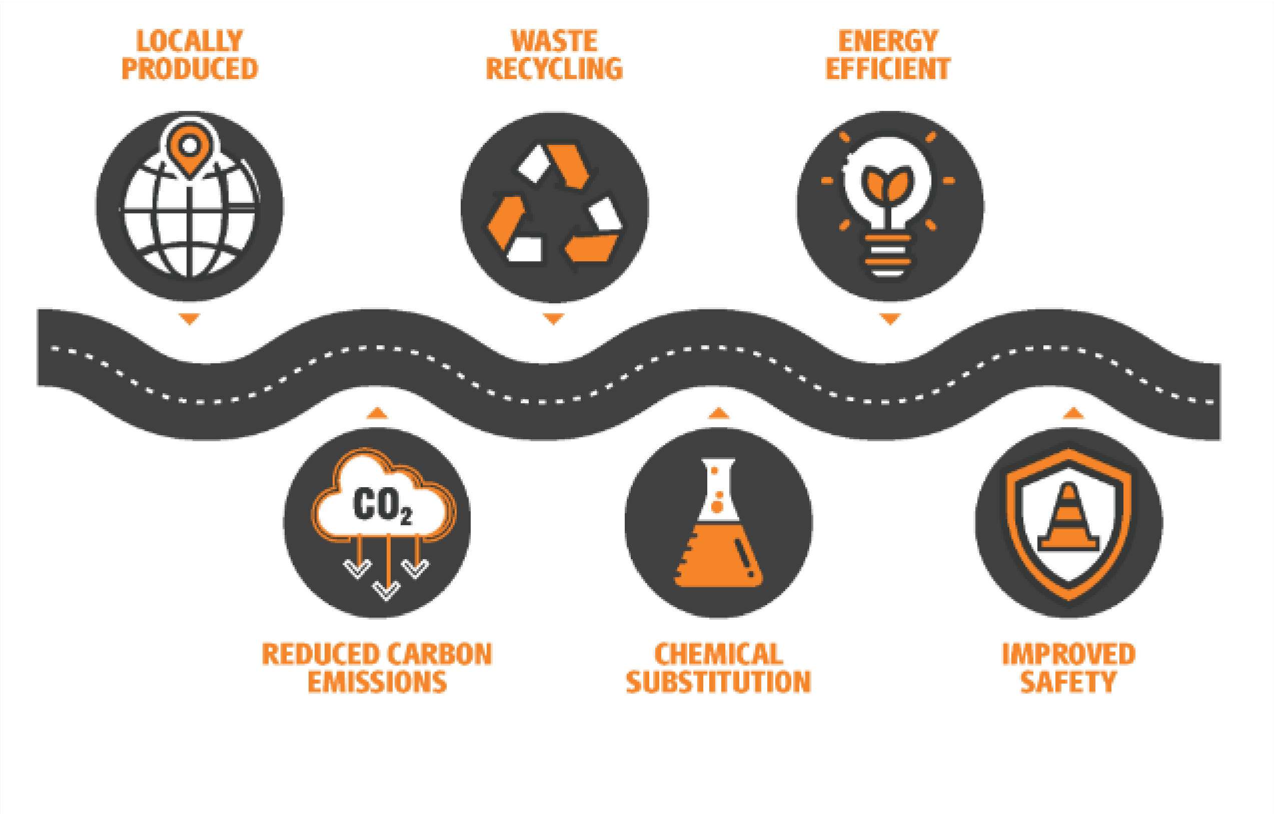
As a technical leader in its field, Fulton Hogan takes pride in developing innovative solutions that provide environmental, financial and functional benefits to our customers. As our customers are seeking evermore sustainable solutions, Fulton Hogan is continually looking at new products and processes to increase sustainability. Over the past 30 years, Fulton Hogan has used a high content of recycled pavements in their products, led the introduction of glass sand and wet blend crumb rubber asphalt, and has undertaken production and placement trials of asphalts produced with waste polymers.

Our in-house design support benefits our customers 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 environmental, quality and performance expectations.

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

Figure 3 - Fulton Hogan sustainable product development roadmap



Product information

Our approach to this EPD

Fulton Hogan put people at the heart of everything. Development of this EPD has been a careful and considered process with the customer and community in mind. The EPD covers one asphalt mix produced at a single location to provide our customers with the information they need without limiting choice. Taking this holistic approach has also provided Fulton Hogan with verified data on our products that will enable us to better understand our impacts on the environment and most importantly take effective action to reduce these impacts.

Fulton Hogan’s asphalt products

Asphalt is one of the most used, reused and recycled pavement materials. This versatile material is used to build roads, highways, airport runways, paths, carparks and other projects where a smooth flat surface is required. Asphalt is a mix mainly composed of aggregates (crushed rock and sand) and bitumen (the black viscous sticky material) but sometimes special additives are also included to meet specific requirements.

Hot-mix asphalt is manufactured in a purpose-built plant where controlled amounts of aggregates of various size, previously blended and graded to meet a required specification, are dried and heated before being mixed with a measured quantity of hot bitumen in either a drum (large-output/continuous mixing plant) or in a pugmill (smaller- output/batch plant). Heat is used to remove moisture from the aggregate and to obtain sufficient fluidity of the bitumen to enhance mixing and workability.

Once the mixing is complete, the asphalt mix is then transported to the construction site and spread in a partially compacted layer to an even and uniform surface with a paving machine. While still hot, the paving mixture is further compacted by heavy rolling machines to produce a smooth pavement surface.

As part of Fulton Hogan’s commitment towards a low carbon circular economy in the road construction sector, sustainable materials and practices are implemented during the asphalt manufacturing and laying process.

Fulton Hogan asphalt products incorporate a variety of more sustainable materials including Reclaimed Asphalt Pavement (RAP), recycled glass, crumb rubber, recycled plastics and slag aggregates among others. RAP is a material generated from old, damaged pavement materials containing aggregates and bitumen, RAP is incorporated in asphalt mixes as a replacement of these virgin materials. Similarly, recycled glass is used in asphalt mixes as replacement for natural sand, this product is recovered from the glass packaging recycling industry. Other recovered materials are also used in Fulton Hogan’s asphalt mixes in slightly different ways such as crumb rubber, a product from end-of life tyres and recycled plastics. Both materials can be used as a bitumen modifier, they are blended through a wet process achieving a high-quality binder which improves the performance of asphalt mixes. Slag aggregate is a co-product of the steel making process and its unique properties enhance the skid resistance performance of asphalt, it also reduces the need to use virgin quarry aggregates.

Sustainable practices such as the use of warm-mix asphalt and foam bitumen stabilisation are also implemented by Fulton Hogan. Warm-mix asphalt is produced at a reduced temperature allowing a significant reduction of carbon emissions and energy used for production while maintaining the asphalt performance.

Declared asphalt product

This EPD covers an asphalt product (AC14M R10) manufactured at our South Australian asphalt facility in Mile End.

Geographical scope

The processes in modules A1-A3 have been modelled to represent asphalt production in Mile End, near Adelaide, South Australia. The raw materials are sourced globally (e.g. bitumen) and from within Australia, and the end-of-life (module C) of the product has been modelled to represent Australia (based on the EPD Australasia 2022 default scenario for metropolitan roads).

Figure 4 - Location of Fulton Hogan's asphalt production facility included in this EPD

Technical compliance

Fulton Hogan asphalt mixes are designed in accordance with the following Australian standards and state road authority-based specifications:

- AS 2150 Asphalt - A guide to good practice
- Austroads: Guide to Pavement Technology Part 4B: Asphalt
- RD-BP-C3 - CONSTRUCTION OF ASPHALT PAVEMENT
- RD-BP-C4 - APPLICATION OF THIN ASPHALT SURFACINGS
- RD-BP-S1 - SUPPLY OF BITUMINOUS MATERIAL
- RD-BP-S2 - SUPPLY OF ASPHALT
- RD-BP-S4 - SUPPLY OF COLD MIX ASPHALT
- RD-PV-C5 - CONSTRUCTION OF MINOR PAVEMENTS
- RD-PV-C6 - REINSTATEMENT OF EXISTING PAVEMENTS
- RD-PV-D1- PAVEMENT DESIGN AUSTROADS SUPPLEMENT
- RD-PV-D2 - PAVEMENT REHABILITATION DESIGN
- RD-PV-S1 - SUPPLY OF PAVEMENT MATERIALS
- RD-PV-S2 - PLANT MIXED STABILISED PAVEMENT

Content declaration

The product composition is presented in Table 1. For reasons of confidentiality, a range is provided that covers all of our Mile End product EPDs.
Asphalt is delivered in bulk without packaging and may contain biogenic carbon.

Table 1: Product composition

Raw material	Asphalt mix composition (kg/tonne)	Post-consumer recycled material, mass (%)	Biogenic material, mass (%)	Biogenic material, kg C /declared unit
Bitumen, virgin	45 – 70	0%	0%	0
# Bitumen modifiers (SBS, FT wax)	n/a	0%	0%	0
# Crumb Rubber*	n/a	0%	0%	0
# Recycled plastics	0	0%	0%	0
Reclaimed Asphalt Pavement (RAP)@	300	28.5%	0%	0
Coarse aggregates (crushed rock)	175 – 825	0%	0%	0
Fine aggregates (natural sand)	0 – 325	0%	0%	0
Fine aggregates (manufactured sand)	75 – 450	0%	0%	0
Recovered Glass Sand	0 – 50	0%	0%	0
Mineral fillers (fly ash; cement kiln dust)	0 – 75	0%	0%	0
Anti-strip agents (hydrated lime)	0 – 10	0%	0%	0
Cellulose fibres	n/a	0%	0%	0
Warm mix additives	n/a	0%	0%	0
Total	**1 000 kg/t**	**28.5%**	**0%**	**0**

 # When present, these materials have been blended into the bitumen binder.
** Crumb rubber is assumed to consist of rubber from truck tyres (50%) and passenger tyres (50%), which contains 43.4% and 22.5% natural rubber respectively. The biogenic content is calculated as 0.29 kg C per kg crumb rubber.*
*** Cellulose fibre is estimated to contain 75% cellulose. At 46.8% carbon in cellulose, the biogenic content is calculated as 0.35 kg C per kg fibre.*
@ RAP: We estimate 95% of RAP is from external sources, while the remaining 5% is internally recycled material.

The products included in this EPD do not contain any substances of very high concern as defined by European REACH regulation in concentrations >0.1% (m/m).

Product identification

The product code for asphalt is UN CPC 3794 (Bituminous mixtures based on natural and artificial stone materials and bitumen, natural asphalt or related substances as a binder) and ANZSIC 3101 (Road and Bridge Construction) / BIC 31010 (Paving material - Hot-mix bitumen).

LCA information

Declared unit

1 metric tonne (1000 kg) of manufactured asphalt mixture (as ordered by client) with identifying characteristics.

Scope of the Environmental Product Declaration

The scope of the EPD is cradle-to-gate with modules C1-C4 and module D (life cycle stages A1-A3, C1-C4 and D). This EPD covers the processes that occur in as many of the product's life cycle stages as could be effectively modelled. Stages A4, A5 and B1-B7 have not been included as these are better defined at building or structure level.

Table 2: Scope of EPD

Stages	Product Stage			Construction Stage		Use Stage							End-of-life Stage				Benefits beyond system boundary
	Raw Materials	Transport	Production	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/Demolition	Transport	Waste Processing	Disposal	Reuse, recovery, recycling potential
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
				Scenario		Scenario							Scenario				Scenario
Modules Declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	AU, GLO	AU	AU										AU	AU	AU	AU	AU
Share of primary data	53%																
Variation products	0% (n/a)																
Variation sites	0% (n/a)																

X = module is included in this study
ND = module is not declared. When a module is not accounted for, the stage is marked with "ND" (Not Declared). ND is used when we cannot define a typical scenario.

Life Cycle Stages

Raw Material Stage A1

Typically, asphalt is manufactured by blending a selection of the materials shown in Table 1 in proportions determined during the design process.

Bitumen

Bitumen acts as the binder or glue that holds the other materials together. It is a product of the crude oil refining process, which typically takes place overseas before being imported to Australia. Bitumen needs to be stored at temperatures around 165°C in order to make it possible to use in asphalt. Bitumen is available in different classes or grades and typically needs to conform to AS2008 Bitumen for Pavements, ATS3110 Supply of Polymer Modified Binders or RD-BP-S1- Supply of Bituminous Material.

Bitumen Modifiers

Bitumen may be modified by blending it with a synthetic polymer creating what is commonly known as a Polymer Modified Binder or PMB. The polymer is typically either a Styrene-Butadiene-Styrene (SBS) which provides improved resilience and makes the binder less susceptible to temperature or an Ethylene-Vinyl Acetate (EVA) to provide increased stiffness. Synthetic polymers are typically manufactured overseas in countries such as Germany and South Korea prior to being imported to Australia. PMBs are blended at Fulton Hogan's facility in Dry Creek in Adelaide before being transported to the asphalt plant in Mile End.

Coarse and Fine Aggregates (including sand)

Coarse and fine aggregates generally make up the bulk of the asphalt mixture and provide the finished asphalt pavement with structure and strength. Aggregates are natural materials extracted from quarries before going through processes such as crushing, screening and washing for use in asphalt. The source for asphalt aggregates is typically as close to the asphalt plant as possible provided the finished aggregate product complies with AS2758.5 Aggregates and Rock for Engineering Purposes, Part 5 Coarse Asphalt Aggregates, RD-PV-S1 - Supply of Pavement Materials and RD-BP-S2 - Supply of Asphalt.

Recycled Materials

Fulton Hogan is embracing and accelerating the circularity of materials for incorporating into asphalt without compromising on quality.

Reclaimed Asphalt Pavement consists of existing asphalt pavements that have been removed by milling (profiling) before being processed according to strict internal management standards. Incorporating RAP in asphalt replaces a proportion of the aggregates as well as allowing for a reduction in bitumen content.

Recovered Glass Sand is generated by the crushing and washing of used glass containers to a consistency that is similar to that of natural sand.

The number of facilities that are able to produce glass sand that complies with RD-PV-S1 - Supply of Pavement Materials, RD-BP-S2 - Supply of Asphalt, and current EPA Resource Recovery Orders is increasing within South Australia and providing local access to this material. Recovered Glass Sand is used to replace a proportion of natural sand. It is currently being sourced from the Southern Region Waste Resource Authority (SRWRA).

Crumb Rubber is generated from shredding and grinding end-of life tyres at dedicated recycling facilities located across Australia. Asphalt produced under AS2150 may have crumb rubber added to improve fatigue performance.

Mineral fillers

Mineral fillers used in asphalt include hydrated lime, fly ash and agricultural lime. Fillers perform various roles in asphalt, from stiffening the bitumen to providing enhanced adhesion properties. The properties of fillers are required to meet, RD-BP-S2 - Supply of Asphalt.

Additives

Common additives used in asphalt include warm mix additives, adhesion agents, oxides and cellulose fibres. Additives enhance asphalt's structural and/or functional properties such as workability, stiffness, colour, binder retention and adhesion.

Transportation Stage A2

Delivery of raw materials to Fulton Hogan asphalt plants is via road transport in varying truck and trailer combinations including semi-trailers, and tankers in the case of hydrated lime and bitumen. Whilst all efforts are made to source raw materials close to the asphalt plant to minimise transportation impacts, not all materials are locally available. Materials such as bitumen, polymer modifiers, and other additives need to be imported and include additional shipping and road transportation prior to delivery to site. The impact of each mode of transportation is determined by taking into account the specific supply source for each plant and its location.

Manufacturing Stage A3

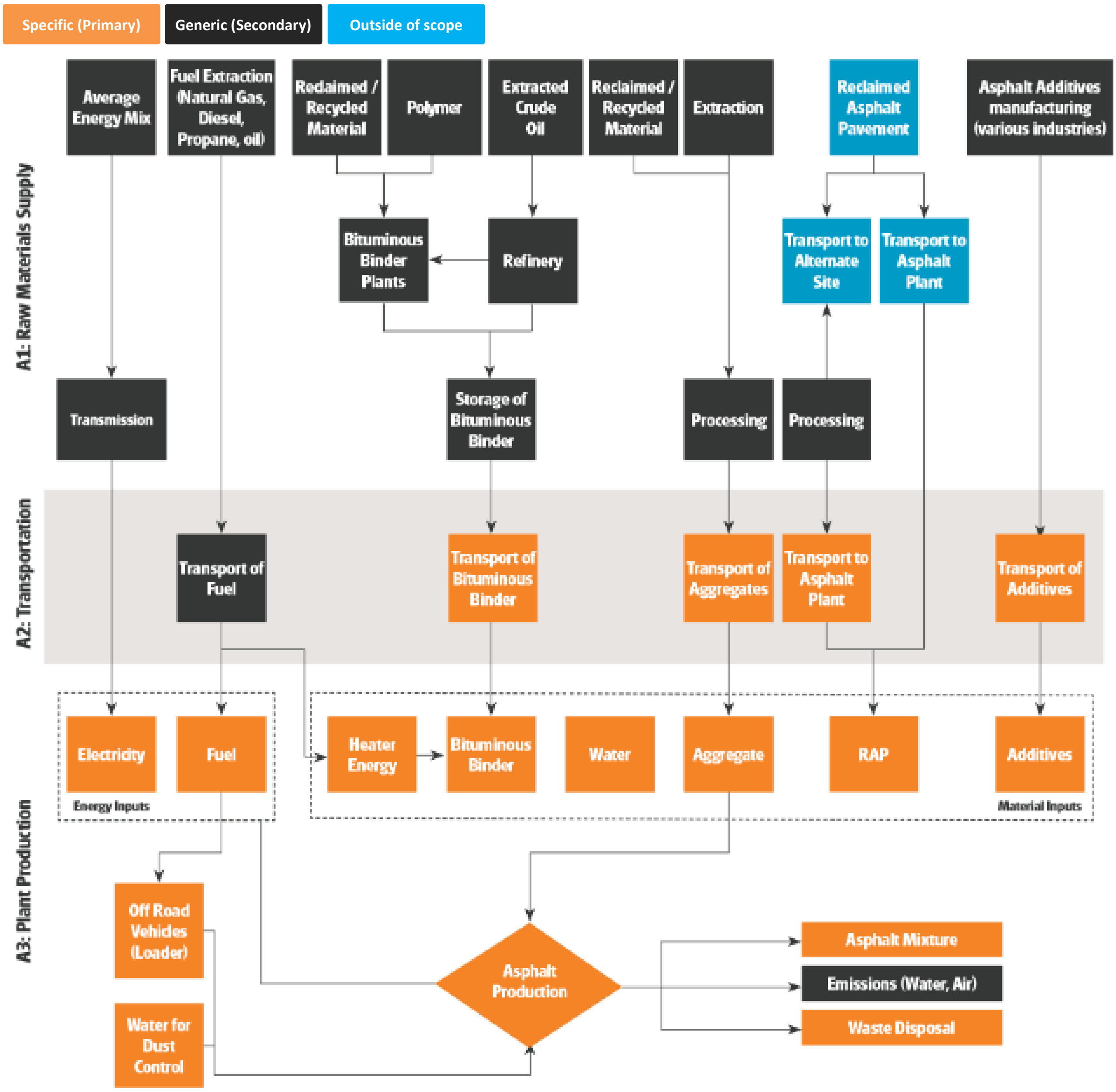
The asphalt manufacturing process as described in the section "Fulton Hogan Asphalt Products" (p. 9) requires energy inputs in the form of electricity and fuels.

Electricity provides mechanical, light and heat energy required to operate the asphalt plant and store raw materials.

Fuels are used to heat and dry the sand and aggregates and are typically diesel, natural gas, or Liquefied Petroleum Gas (LPG). Fuel is also required for mobile plant on site, such as front-end loaders, which are typically used to feed aggregates into the asphalt plant.

This manufacturing stage covers the blending of materials at the asphalt plant and does not capture delivery or placement of asphalt in a pavement.

Figure 5 - Cradle-to-gate life cycle of asphalt products (AEPDP 2022)



End-of-Life Stages C1-C4

Module C1 covers demolition of the asphalt at the end of its service life.

Module C2 comprises the transport from the demolition site to a recycling site (30km). Module C3 encompasses the recycling process (i.e. crushing of asphalt). As this occurs at the asphalt plant, no impacts are assigned to module C3 as per the Technical Guidance document (EPD Australasia 2022).

Module C4 represents disposal of asphalt in a landfill site. As all asphalt is recycled (including downcycling) at end-of-life, module C4 is not relevant.

Resource Recovery Stage D

Module D includes any benefits and loads from net flows leaving the product system (that have passed the end-of-waste state).

EOL scenarios

The end-of-life modules for asphalt are based on generic scenarios for asphalt used in metropolitan areas, in line with the Technical Guidance document (EPD Australasia 2022), see Figure 6.

The scenarios included are currently in use and are representative for one of the most probable alternatives.

For this EPD, we applied the end-of-life scenario for pavement in metro areas. This scenario assumes 90% of asphalt is recycled into new asphalt, while the remaining 10% is downcycled into a granular subbase material.

The recycling of asphalt at its end-of-life leads to a reduction in the demand for virgin materials. Recycled bitumen replaces new bitumen, while recovered aggregates (both coarse and fine) substitute virgin crushed rock and sand. When downcycled, recycled asphalt is used for road base applications, leading to the replacement of virgin materials typically used in such constructions, thereby extending the usefulness of the reclaimed materials. These substitutions are beneficial as they reduce the need for processes involved in extracting and refining new materials. The benefits are reflected in the negative result values (= credits) in module D.

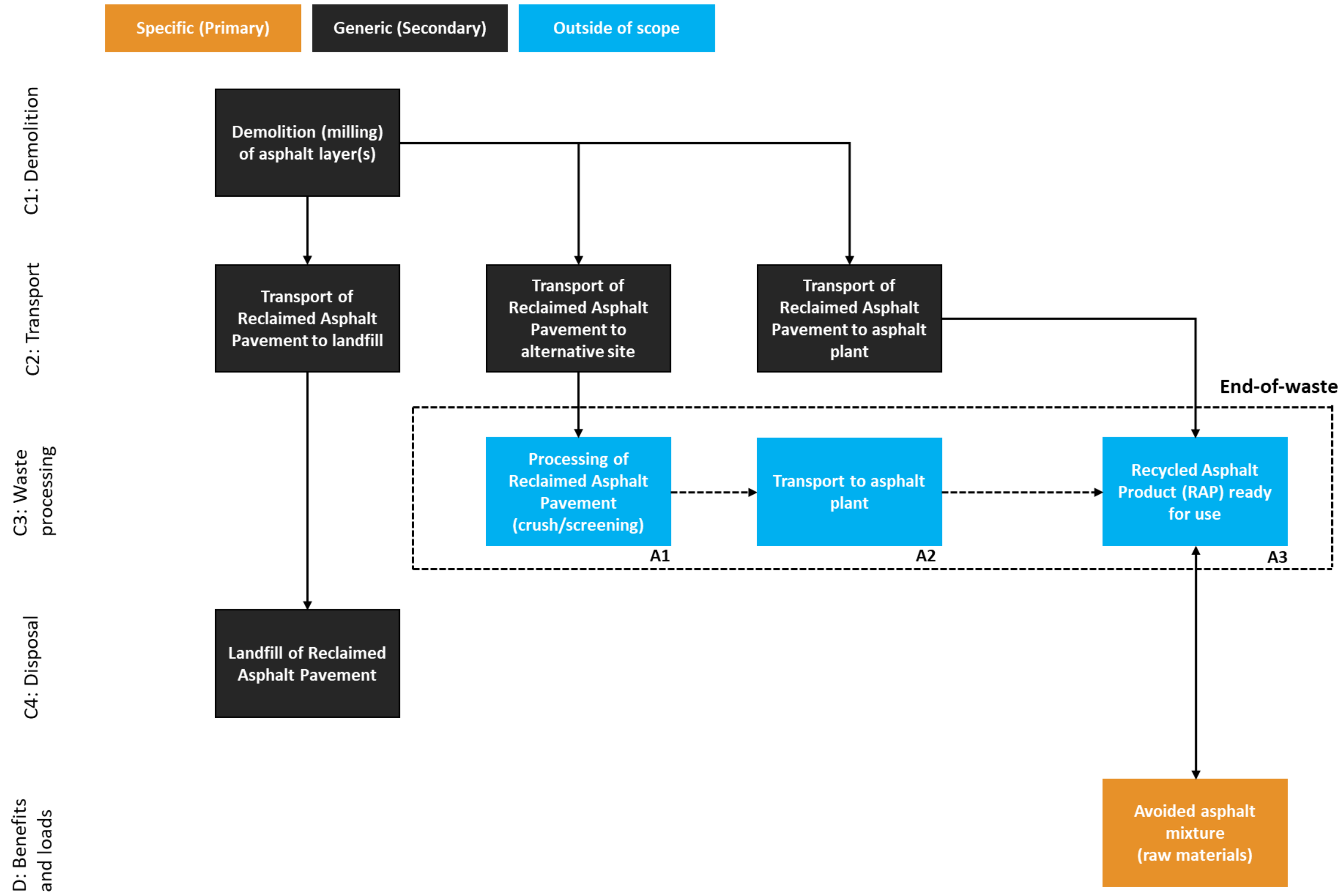
Any primary material collected for recycling and processed in module C3, is considered to go through to module D. In determining the net output flow, secondary materials (RAP) are excluded from going to module D (in a deviation from the Technical Guidelines). Other end-of-life modelling choices are in line with the Technical Guidelines, see Table 3.

Note that recycling processes that may be expected in module C3, are covered by module A1-A3 to avoid double counting. This is explained in section 2.3 of the Technical Guidance document (EPD Australasia 2022). We have listed the parameter Materials for Recycling (MFR) in module C3 to capture the amount of material collected for recycling at end-of-life.

Table 3: End-of-life scenario parameters

Processes	Quantity per t of asphalt	Unit
Collection process specified by type	1 000	kg collected separately
	0	kg collected with mixed construction waste
Transport from demolition site to recovery / disposal sites	30	km transport
Recovery system specified by type	0	kg for re-use
	1 000	kg for recycling (90% recycling; 10% downcycling)
	0	kg for energy recovery
Disposal to landfill	0	kg product or material for final deposition
Assumptions for scenario development		Module C1 (demolition) requires: 14.7 MJ diesel for milling; 5.0 MJ diesel for screening, and 5.4L of water

Figure 6 - System boundaries (modules C1-C4, D), processes and data types



Life Cycle Assessment (LCA) Methodology

Cut-off Criteria

The cut-off criteria applied are 1% of renewable and non-renewable primary energy usage and 1% of the total mass input of a process. Furthermore:

- The contribution of capital goods (production equipment and infrastructure) and personnel is excluded, as these processes are non-attributable and reasonable data for capital goods are not readily available. A sensitivity analysis employing multiple estimates upon estimates shows a contribution of capital goods to GWP-GHG of just over 10%.
- Crumb rubber (reusable bulk-bags) and additives used in minor quantities are supplied in packaged format. As the packaging used for these products is well below the materiality cut-off and is often recyclable or reusable, the packaging materials have been omitted from the analysis. The impact on the footprint of asphalt products is negligible.
- Greases, lubricants and other minor ancillary materials used during asphalt production have been excluded. The impact on the footprint of asphalt products is negligible.

Key Assumptions

The key assumptions in the LCA are:

- **Asphalt composition:** The asphalt composition of each product is taken from Fulton Hogan's systems. These data are considered to be of high accuracy.
- **Site energy data:** When calculating the environmental performance of individual asphalt products, the burner energy used for heating raw materials to the asphalt's production temperature is calculated for each individual product. The EN 15804+A2:2019 for Asphalt mixtures – Australia (EPD Australasia 2022) refers to this as Method A.
- **Other site-related impacts** (site electricity use, fuel use for equipment and water use) have been attributed to asphalt products based on their respective production volumes (in tonnes). This approach assumes that the impacts are similar per tonne of asphalt product. Mass allocation is considered the most reasonable approach to attributing generic site environmental impacts across different products.
- The **end-of-life scenario** (90% recycling into asphalt; 10% downcycling as granular subbase) is based on the default scenario in metro areas, as per the Technical Guidance document (EPD Australasia 2022).

Background Data

Fulton Hogan has collected and supplied primary data for the LCA. In South Australia, the data cover the operation of the Mile End asphalt production site. The asphalt production data have been collected for FY22 (1 July 2021 – 30 June 2022). Environmental profiles of our products are based on life cycle data that are less than five years old. Background data used are less than 10 years old or have been reviewed within this period. Methodological choices have been applied in line with PCR 2019:14 (Environdec 2025) and the Australian Technical Guidance document (AEPDP 2022), which also aligns with EN 15804+A2; deviations have been recorded.

Background data (e.g. for energy and transport processes, bitumen and other raw materials) have predominantly been sourced from AusLCI and the AusLCI shadow database v1.42 (AusLCI 2023), in line with the Technical Guidance for developing EPDs according to EN 15804+A2:2019 for Asphalt mixtures – Australia (EPD Australasia 2022)). The key exception is the data for hydrated lime, which have been sourced from the supplier's EPD. The prescribed Life Cycle Inventory (LCI) data for bitumen, hydrated lime and rubber crumb have a significant effect on the results of the LCA. When comparing asphalt EPDs, it is therefore important to understand which background LCI data are used.

Water inputs into key processes are adjusted to reflect regional (Gulf Coast) WDP factors (in line with EPD Australasia 2024). For core processes, electricity has been modelled using adjusted AusLCI data to represent the estimated residual electricity grid mix in South Australia, Australia. This is done by removing renewables from the Australian Energy Statistics 2025 data (Table O6). The GWP-GHG of the electricity is 0.83 kg CO_2e / kWh. The proxy residual grid mix is made up of natural gas (94.1%) and oil products (5.9%). The selection of the electricity grid mix has a minor impact on the results. For other processes, electricity has been modelled using a location-based approach, mostly based on Australian average electricity generation as per AusLCI.

Allocation

The key processes that require allocation are:

- **Asphalt production:** Fulton Hogan manufactures a range of asphalt products at its sites. Products can be produced at different temperatures (e.g. hot mix, warm mix or cold mix) and the composition of the asphalt mix also affects the amount of energy required to drive off moisture and heat up the raw materials to the required temperature. To determine the energy requirements for each mix design, start2see has applied Method A (EPD Australasia 2022; section 2.5): Determine the energy use for each mix design based on the composition, specific heat capacity of components, moisture content of raw materials and the plant's overall efficiency.
- **RAP:** Reclaimed Asphalt Pavement reaches the end-of-waste state when the reclaimed, milled material has been collected in a truck and transported to a storage pile, ready to be processed for further use. Fulton Hogan typically receives and processes RAP at its asphalt plants. RAP may also be collected through profiling of roads requiring upgrades that are carried out by Fulton Hogan. Any energy use for RAP processing is covered by the energy data for the asphalt plant. As a result, module C3 is recorded with zero impacts (other than MFR parameter). In line with ISO 14021, recycled content of products should only cover recycled materials from pre-consumer (post-industrial) and post-consumer scraps, but not recycled material made from internal scrap. Fulton Hogan has indicated that around 5% of RAP used in SA originates from production waste. Therefore, each 1.0 kg of RAP used in Fulton Hogan's asphalt amounts to 0.95 kg of Secondary Material (parameter: SM).
- **Aggregates:** Aggregates are produced through crushing of rock, which is graded in different sizes. The energy required for the crushing and screening does not differentiate between products. Therefore, aggregate production (including manufactured sand) has been allocated based on the mass of product.
- **Crushed glass sand:** Waste glass reaches the end-of-waste state at a waste sorting facility, before it is crushed into finer granulates. Energy for crushing is attributed to the glass sand.

Data quality assessment

Table 4: Data quality assessment

Process	Source type	Source	Reference year	Data category	Share of primary data (GWP-GHG; A1-A3)**
Manufacturing of asphalt	Collected data	EPD owner	2022	Primary data	24-41%
Generation of electricity used in manufacturing of asphalt	Collected data / Database	EPD owner / AusLCI v1.42	2023	Primary data	3-5%
Transport of raw materials to manufacturing site	Collected data / Database	EPD owner / AusLCI v1.42	2022	Primary data	5-7%
Production of bitumen	Database	AusLCI v1.42	2023	Secondary data	0%
Production of fine and coarse aggregates	Database	AusLCI v1.42	2023	Secondary data	0%
Production of SBS	Database	AusLCI v1.42	2023	Proxy data	n/a
Production of crumb rubber	Database	AusLCI v1.42	2023	Secondary data	n/a
Production of hydrated lime	EPD	Supplier EPD	2023	Primary data	n/a
Other	Database	AusLCI v1.42	2023	Proxy and secondary data	0%
Total share of primary data*, of GWP-GHG results for A1-A3					**53%**

** The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.*
*** If a particular raw material is not present in the asphalt mix, its share is indicated as n/a (not applicable).*

The EPD covers asphalt from one plant in Mile End (Adelaide), which provided energy and waste data for the asphalt plant for the period July 2021 - June 2022. The mix designs, raw materials, and supply chain details are current (2025). The ingredients are mixed, dried and heated in the continuous drum plant and sent to the customer as warm or hot mix asphalt. The EPD covers end-of-life in Australia, using the default factors from EPD Australasia 2022 to model module C (see Table 3). Background data was sourced from the AusLCI v1.42 database and a supplier EPD (hydrated lime). Data quality was assessed according to EN 15804:2012+A2:2019, Annex E (Table E.1 - UN Environment Global Guidance on LCA database development). The use of very poor and poor data is disclosed in Table 5, together with fair data with more than 30% of impact on any core indicator.

Table 5: Data quality information

Data set	Criteria	Data quality level	Reason for level	Reason for using	Relevance*
Production of bitumen	Geographical Technical	Fair Fair	Generic background data	Prescribed data (EPD Australasia 2022)	25-45% of GWP; 10-20% of ADP minerals & metals 20-30% of WDP; 30-100% of other core impact indicators
Production of SBS	Geographical Technical	Very poor Poor	Proxy data	Prescribed data (EPD Australasia 2022)	n/a
Production of FT wax	Geographical Technical	Very poor Very poor	Proxy data	Prescribed data (EPD Australasia 2022)	n/a
Production of warm mix additive	Geographical Technical	Very poor Poor	Proxy data	Prescribed data (EPD Australasia 2022)	n/a
Production of cellulose fibres	Geographical Technical	Very poor Poor	Proxy data	Prescribed data (EPD Australasia 2022)	n/a
Production of crumb rubber	Technical	Fair	Generic background data	Prescribed data (EPD Australasia 2022)	n/a
Production of re-generated mineral oil	Geographical Technical	Poor Poor	Proxy data	Prescribed data (EPD Australasia 2022)	n/a

** If a particular raw material is not present in the asphalt mix, its relevance is indicated as n/a (not applicable).*

Environmental Indicators

An LCA serves as the foundation for this EPD. An LCA analyses the production systems of a product. It provides comprehensive evaluations of all upstream and downstream energy inputs and outputs. The results are provided in a form which covers a range of environmental impact categories.

Table 6: Environmental indicators legend (EN 15804+A2)

Core indicators	Acronym	Unit
Climate change – total	GWP-total	kg CO_2 equivalent
Climate change – fossil	GWP-fossil	kg CO_2 equivalent
Climate change – biogenic	GWP-biogenic	kg CO_2 equivalent
Climate change – land use and land use change	GWP-luluc	kg CO_2 equivalent
Ozone layer depletion	ODP	kg CFC-11 equivalent
Acidification	AP	mol H^+ equivalent
Eutrophication aquatic freshwater	EP-freshwater	kg P equivalent
Eutrophication aquatic marine	EP-marine	kg N equivalent
Eutrophication terrestrial	EP-terrestrial	mol N equivalent
Photochemical ozone formation	POCP	kg NMVOC equivalent
Abiotic depletion potential – elements[1]	ADP minerals & metals	kg Sb equivalent
Abiotic depletion potential – fossil fuels[1]	ADP fossil	MJ, net calorific value
Water use[1]	WDP	m^3 world equivalent deprived
Additional indicators	**Acronym**	**Unit**
Global Warming Potential – Greenhouse gases	GWP-GHG	kg CO_2 equivalent
Particulate matter emissions	PM	disease incidence
Ionising radiation, human health[2]	IRP	kBq U235 equivalent
Ecotoxicity (freshwater)[1]	ETP-fw	CTUe
Human toxicity, cancer effects[1]	HTP-c	CTUh
Human toxicity, non-cancer effects[1]	HTP-nc	CTUh
Land use related impacts / soil quality[1]	SQP	- (dimensionless)
Additional GHG indicator	**Acronym**	**Unit**
Carbon footprint in line with IPCC AR5[3]	**GWP-GHG (IPCC AR5)**	**kg CO_2 eq**

[1] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

[2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

[3] **Note regarding various GWP indicators:** GWP-total is calculated using the European Union's Joint Research Centre's characterisation factors (CFs) based on the "EF 3.1 package" for CFs to be used in the EU's Product Environmental Footprint (PEF) framework. CFs listed by JRC are based on the IPCC AR6 method (IPCC 2021) and include indirect radiative forcing, which results in higher numerical Global Warming Potential (GWP) values than the CFs in the internationally accepted (IPCC 2013). The GWP-GHG indicator is identical to GWP-total except that the CFs for biogenic CO2 are set to zero. The GWP-GHG indicator in PCR 2019:14 v2.0.1 differs from the GWP-GHG in earlier (pre v1.3) PCR 2019:14 versions. The "**GWP-GHG (IPCC AR5)**" indicator is determined using the IPCC AR5 GWPs with a 100-year time horizon (IPCC 2013). This indicator is aligned with Australia's greenhouse gas reporting frameworks.

Table 7: Legend for parameters describing resource use, waste and output flows

Parameter	Acronym	Unit
Parameters describing resource use		
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ_{NCV}
Use of renewable primary energy resources used as raw materials	PERM	MJ_{NCV}
Total use of renewable primary energy resources	PERT	MJ_{NCV}
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ_{NCV}
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ_{NCV}
Total use of non-renewable primary energy resources	PENRT	MJ_{NCV}
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ_{NCV}
Use of non-renewable secondary fuels	NRSF	MJ_{NCV}
Use of net fresh water	FW	m^3
Waste categories		
Hazardous waste disposed	HWD	kg
Non-Hazardous waste disposed	NHWD	kg
Radioactive waste disposed	RWD	kg
Output flows		
Components for re-use	CRU	kg
Materials for recycling	MFR	kg
Materials for energy recovery	MER	kg
Exported energy	EE	MJ

Table 8: Legend for EN 15804+A1 indicators

Indicator	Acronym	Unit
Global warming potential	GWP	kg CO_2 equivalent
Ozone layer depletion potential	ODP	kg CFC-11 equivalent
Acidification potential	AP	kg SO_2 equivalent
Eutrophication potential	EP	kg PO_4^{3-} equivalent
Photochemical oxidation (Photochemical ozone creation) potential	POCP	kg ethylene equivalent
Abiotic depletion potential - elements	ADPE	kg Sb equivalent
Abiotic depletion potential – fossil fuels	ADPF	MJ_{NCV}

Environmental performance

The following section presents the results for each Life Cycle Assessment module. The results have been calculated with SimaPro software v9.6.0.1, using characterisation factors based on the “EF 3.1 package” for characterisation factors to be used in the EU’s Product Environmental Footprint (PEF) framework.
To separate the use of primary energy into energy used as raw material and energy used as energy carrier, Option B from Annex 3 of PCR 2019:14 has been applied.

Please consider the following mandatory statements when interpreting the results:
”The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.”

“*The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).*"

Table 9: Environmental indicators EN 15804+A2, AC14M R10 asphalt, Mile End, per tonne

Environmental Indicator	Unit	Module A1-A3	Module C1	Module C2	Module C3	Module C4	Module D
Core Indicators							
GWP-total	kg CO_2-eq.	6.15E+01	1.71E+00	3.84E+00	0.00E+00	0.00E+00	-2.46E+01
GWP-fossil	kg CO_2-eq.	6.05E+01	1.70E+00	3.84E+00	0.00E+00	0.00E+00	-2.46E+01
GWP-biogenic	kg CO_2-eq.	9.95E-01	3.20E-04	2.37E-04	0.00E+00	0.00E+00	-2.28E-02
GWP-luluc	kg CO_2-eq.	5.12E-04	8.69E-07	1.81E-06	0.00E+00	0.00E+00	-7.34E-05
ODP	kg CFC11-eq.	2.72E-05	2.72E-07	6.06E-07	0.00E+00	0.00E+00	-2.42E-05
AP	mol H+ eq.	4.29E-01	1.87E-02	3.37E-02	0.00E+00	0.00E+00	-3.20E-01
EP-freshwater	kg P eq.	1.86E-05	2.28E-07	2.31E-07	0.00E+00	0.00E+00	-1.34E-05
EP-marine	kg N eq.	6.33E-02	8.15E-03	1.06E-02	0.00E+00	0.00E+00	-2.56E-02
EP-terrestrial	mol N eq.	6.93E-01	8.94E-02	1.16E-01	0.00E+00	0.00E+00	-2.82E-01
POCP	kg NMVOC eq.	2.17E-01	2.39E-02	2.84E-02	0.00E+00	0.00E+00	-8.93E-02
ADP minerals & metals[1]	kg Sb eq.	1.16E-06	2.04E-09	4.46E-09	0.00E+00	0.00E+00	-1.17E-06
ADP fossil[1]	MJ (NCV)	2.84E+03	2.38E+01	5.28E+01	0.00E+00	0.00E+00	-2.18E+03
WDP[1]	m^3 world eq. deprived	6.35E+01	2.55E-01	3.33E-01	0.00E+00	0.00E+00	-6.19E+01
Additional Indicators							
GWP-GHG	kg CO_2-eq.	6.13E+01	1.71E+00	3.84E+00	0.00E+00	0.00E+00	-2.46E+01
PM	Disease incidence	3.34E-06	4.96E-07	1.90E-07	0.00E+00	0.00E+00	-8.68E-07
IRP[2]	kBq U235 eq.	4.59E-03	3.53E-05	7.70E-05	0.00E+00	0.00E+00	-3.44E-03
ETP-fw[1]	CTUe	5.75E+02	5.27E+00	1.16E+01	0.00E+00	0.00E+00	-4.64E+02
HTP-c[1]	CTUh	1.53E-08	6.59E-11	1.65E-11	0.00E+00	0.00E+00	-7.19E-10
HTP-nc[1]	CTUh	6.76E-08	3.51E-10	3.14E-10	0.00E+00	0.00E+00	-1.38E-08
SQP[1]	-	1.97E+02	1.18E-01	2.37E-01	0.00E+00	0.00E+00	-1.56E+02
Carbon footprint							
GWP-GHG (IPCC AR5)	kg CO_2 eq	61.4	1.71	3.84	0.00	0.00	-24.7

Footnotes:

[1] The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

[2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Table 10: EN 15804+A2 parameters, AC14M R10 asphalt, Mile End, per tonne

Parameter	Unit	Module A1-A3	Module C1	Module C2	Module C3	Module C4	Module D
PERE	MJ_{NCV}	8.86E+00	3.78E-02	7.57E-02	0.00E+00	0.00E+00	-8.62E+00
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	8.86E+00	3.78E-02	7.57E-02	0.00E+00	0.00E+00	-8.62E+00
PENRE	MJ_{NCV}	5.70E+02	2.38E+01	5.28E+01	0.00E+00	0.00E+00	-9.58E+01
PENRM	MJ_{NCV}	2.48E+03	0.00E+00	0.00E+00	-2.48E+03	0.00E+00	-2.09E+03
PENRT	MJ_{NCV}	3.05E+03	2.38E+01	5.28E+01	-2.48E+03	0.00E+00	-2.18E+03
SM	kg	1.45E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.52E+00	8.85E-03	7.64E-03	0.00E+00	0.00E+00	-1.45E+00
HWD	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHWD	kg	2.60E-02	1.11E-04	2.24E-04	0.00E+00	0.00E+00	-2.54E-02
RWD	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.60E+01	0.00E+00	0.00E+00	1.00E+03	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 11: EN 15804+A1 indicators*, AC14M R10 asphalt, Mile End, per tonne

Environmental Indicator	Unit	Module A1-A3	Module C1	Module C2	Module C3	Module C4	Module D
GWP	kg CO_2 eq	6.07E+01	1.70E+00	3.83E+00	0	0	-2.43E+01
ODP	kg CFC11 eq	2.15E-05	2.15E-07	4.78E-07	0	0	-1.91E-05
AP	kg SO_2 eq	3.41E-01	1.33E-02	1.87E-02	0	0	-2.61E-01
EP	kg PO_4^{3-} eq	2.19E-02	2.74E-03	3.58E-03	0	0	-8.92E-03
POCP	kg C_2H_4 eq	3.55E-02	1.31E-03	1.21E-03	0	0	-1.42E-02
ADPE	kg Sb eq	1.17E-06	2.07E-09	4.51E-09	0	0	-1.18E-06
ADPF	MJ_{NCV}	2.84E+03	2.38E+01	5.28E+01	0	0	-2.18E+03

** Note: the indicators and characterisation methods are from EN 15804:2012+A1:2013, but other LCA rules (system boundaries, allocation, etc.) are according to EN 15804:2012+A2:2019; i.e., the results of the "A1 indicators" shall not be claimed to be compliant with EN 15804:2012+A1:2013*

Additional scenarios

Table 12: Environmental indicators EN 15804+A2, AC14M R10 asphalt, Mile End, per tonne

Environmental Indicator	Unit	Module C3	Module C4	Module D	Module C3	Module C4	Module D
Core Indicators		100% RECYCLING			100% DOWNCYCLING		
GWP-total	kg CO_2-eq.	0	0	-2.60E+01	0	0	-1.21E+01
GWP-fossil	kg CO_2-eq.	0	0	-2.60E+01	0	0	-1.21E+01
GWP-biogenic	kg CO_2-eq.	0	0	-2.32E-02	0	0	-1.92E-02
GWP-luluc	kg CO_2-eq.	0	0	-7.96E-05	0	0	-1.77E-05
ODP	kg CFC11-eq.	0	0	-2.62E-05	0	0	-5.71E-06
AP	mol H+ eq.	0	0	-3.45E-01	0	0	-9.23E-02
EP-freshwater	kg P eq.	0	0	-1.40E-05	0	0	-8.11E-06
EP-marine	kg N eq.	0	0	-2.77E-02	0	0	-6.99E-03
EP-terrestrial	mol N eq.	0	0	-3.05E-01	0	0	-7.64E-02
POCP	kg NMVOC eq.	0	0	-9.66E-02	0	0	-2.34E-02
ADP minerals & metals[1]	kg Sb eq.	0	0	-1.16E-06	0	0	-1.31E-06
ADP fossil[1]	MJ (NCV)	0	0	-2.36E+03	0	0	-5.96E+02
WDP[1]	m^3 world eq. deprived	0	0	-6.19E+01	0	0	-6.12E+01
Additional Indicators		100% RECYCLING			100% DOWNCYCLING		
GWP-GHG	kg CO_2-eq.	0	0	-2.60E+01	0	0	-1.21E+01
PM	Disease incidence	0	0	-9.40E-07	0	0	-2.19E-07
IRP[2]	kBq U235 eq.	0	0	-3.66E-03	0	0	-1.43E-03
ETP-fw[1]	CTUe	0	0	-5.04E+02	0	0	-1.10E+02
HTP-c[1]	CTUh	0	0	-7.49E-10	0	0	-4.48E-10
HTP-nc[1]	CTUh	0	0	-1.48E-08	0	0	-4.99E-09
SQP[1]	-	0	0	-1.53E+02	0	0	-1.81E+02
Carbon footprint		100% RECYCLING			100% DOWNCYCLING		
GWP-GHG (IPCC AR5)	kg CO_2 eq	0	0	-26.1	0	0	-12.1

Footnotes:

1 The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

2 This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and some construction materials, is also not measured by this indicator.

Table 13: EN 15804+A2 parameters, AC14M R10 asphalt, Mile End, per tonne

Parameter	Unit	Module C3	Module C4	Module D	Module C3	Module C4	Module D
		100% RECYCLING			100% DOWNCYCLING		
PERE	MJ_{NCV}	0	0	-8.72E+00	0	0	-7.77E+00
PERM	MJ_{NCV}	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00
PERT	MJ_{NCV}	0.00E+00	0	-8.72E+00	0.00E+00	0	-7.77E+00
PENRE	MJ_{NCV}	0	0	-9.37E+01	0	0	-1.14E+02
PENRM	MJ_{NCV}	-2.48E+03	0	-2.27E+03	-2.48E+03	0	-4.82E+02
PENRT	MJ_{NCV}	-2.48E+03	0	-2.36E+03	-2.48E+03	0	-5.96E+02
SM	kg	0	0	0.00E+00	0	0	0.00E+00
RSF	MJ_{NCV}	0	0	0.00E+00	0	0	0.00E+00
NRSF	MJ_{NCV}	0	0	0.00E+00	0	0	0.00E+00
FW	m^3	0	0	-1.45E+00	0	0	-1.44E+00
HWD	kg	0	0	0.00E+00	0	0	0.00E+00
NHWD	kg	0	0	-2.57E-02	0	0	-2.29E-02
RWD	kg	0	0	0.00E+00	0	0	0.00E+00
CRU	kg	0	0	0.00E+00	0	0	0.00E+00
MFR	kg	1 000	0	0.00E+00	1 000	0	0.00E+00
MER	kg	0	0	0.00E+00	0	0	0.00E+00
EE	MJ	0	0	0.00E+00	0	0	0.00E+00

Abbreviations

Abbreviation	Definition
ANZSIC	Australian and New Zealand Standard Industrial Classification
AusLCI	Australian Life Cycle Inventory (database)
BIC	Business Industry Code
CEN	European Committee for Standardization
CPC	Central Product Classification
EF	Environmental Footprint
EFCA	European Federation of Concrete Admixtures Associations
EN	European Norm (Standard)
EPD	Environmental Product Declaration
FT	Fischer-Tropsch
GPI	General Programme Instructions
ISO	International Organization for Standardization
kWh	kilo Watt hour
NATA	National Association of Testing Authorities, Australia
ND	Not Declared
NWR	National Waste Report
PCR / c-PCR	Product Category Rules / complimentary Product Category Rules
PEF	Product Environmental Footprint
RAP	Recycled Asphalt Pavement
SBS	Styrene-Butadiene-Styrene
SVHC	Substances of Very High Concern
UN	United Nations

Version history

Version	Notes
1	Original version of the EPD, published 2026-03-04

References

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Fulton Hogan South Australia

Suite 4/1 London Rd Mile End SA 5031

Phone: (08) 8219 5810

www.fultonhogan.com

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