



Bitumen

Going further
— for better performing roads

INTRODUCING CARBONBIND®



Puma Bitumen's award-winning CarbonBind® technology is a leading biogenic bitumen component, developed through rigorous R&D.

When added to bitumen, CarbonBind® introduces a negative carbon component to conventional binder grades, while maintaining quality and technical performance.

The concept

Plants capture atmospheric CO₂. Through photosynthesis, plants release oxygen and store carbon.

Puma Bitumen harnesses plant material that's high in carbon, processing it into biogenic bitumen. From here, the biogenic material can be blended with conventional petroleum-derived bitumen to create a binder that has a reduced carbon footprint.

By using a CarbonBind® binder to manufacture asphalt, carbon captured from the atmosphere is able to be stored permanently within our roads.



Plants capture atmospheric CO₂



Extract biogenic bitumen component



Integrated with our global supply network



Roads become perpetual CO₂ vaults

Carbon footprint reduction

CarbonBind® technology can be applied to any grade of bitumen and the benefits can be scaled up to, and even beyond, net-zero. The standard offer of CarbonBind® however represents the most cost effective solution for that grade.

Examples of standard formulations are shown in the table. A detailed EPD is available for each standard grade.

Grade	50/70	160/220	PG64-22	C170	C320	AISE (PMB)
Carbon footprint reduction	38%	108%	40%	49%	42%	20%

Sustainably sourced

Puma Bitumen sources biogenic materials in a process certified as sustainable under the International Sustainability & Carbon Certification (ISCC) system. The feedstock for CarbonBind® is an agricultural waste that would otherwise have been burned for energy. It does not compete with food production.

Putting CarbonBind® to the test

Technical datasheets with the typical engineering properties of CarbonBind® products are available.

Application on major projects revealed that CarbonBind® not only matches the performance of conventional materials, it also integrates seamlessly with existing specifications, mix designs, asphalt production and paving operations.

Independently verified

Life cycle assessments have been performed for Puma Bitumen's supply chain of conventional bitumen, polymer modified binders, other specialities and the biogenic component of CarbonBind®. An independently-verified environmental product declaration (EPD) for the CarbonBind® biogenic component was verified and published through the Norwegian EPD program operator EPD-Norge.

Fits existing specifications

CarbonBind® products are formulated to comply with normal Australian, European and US paving grade bitumen and polymer modified binder specifications.

THE JOURNEY SO FAR

