Going further
— for better performing roads

PUMA Bitumen

10/20 Pen

EME2 Binder

Puma 10/20 Pen is a hard Penetration Grade bitumen suitable for the production of High Modulus Asphalt (EME2). Thanks to superior stiffness, rutting and fatigue resistance, EME2 can be relied on to cost effectively create thinner, long life pavements.

Puma Bitumen puts great emphasis on ensuring that its 10/20 Penetration grade has the consistentency required to produce EME2 of reliable performance.

10/20 Pen - EME2 Binder

Key Benefits

Performance Benefits

- EME2 has superior stiffness, rutting and fatigue resistance compared to conventional asphalt with unmodified binder
- EME2 results in cost effective, sustainable and thinner pavements
- Great care is taken to ensure that Puma 10/20 Penetration Grade bitumen maintains consistent composition and performance

Application Benefits

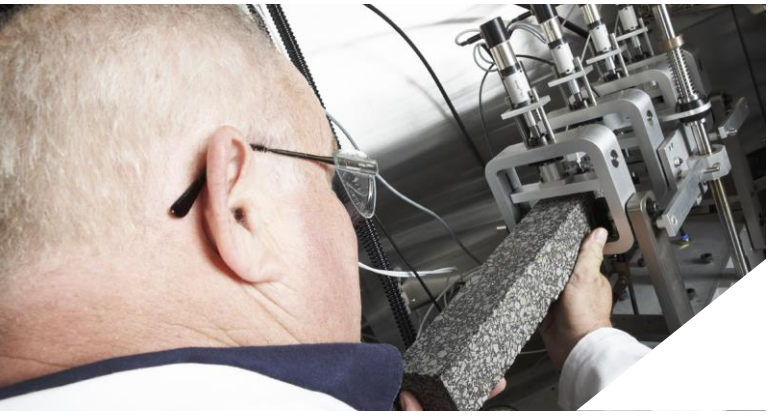
- Puma 10/20 Penetration Grade is the hardest available EME2 binder, providing versatility in mix design
- EME2 is designed to be workable, and as a result easier to compact a targetted air voids in the field
- Puma Bitumen offer customers comprehensive technical support for mix design and EME2 performance testing

Typical characteristics

Property	Typical Value	Specification Limits	Test Method
Penetration at 25 °C (pu)	**14**	**10 – 20**	**AS 2341.12**
Softening point (°C)	**71**	**59 – 79**	**AS 2341.18**
Viscosity at 60°C (Pa.s)	**>> 1050**	**min. 1050**	**AS 2341.2**

Specification

Puma Bitumen 10/20 Penetration Grade Binder is manufactured to comply with the requirements in the Australian Asphalt Pavement Association EME2 Model Specification



Storage & Handling

The storage of bituminous binders for prolonged periods at elevated temperatures should be avoided as quality may be adversely affected. Bituminous binders should be stored at the lowest temperature that enables practical use.

Temperature Recommendations	
Storage for up to 5 days	**175 °C – 185 °C**
Storage for up to 14 days	**140 °C**
Asphalt mixing	**175 °C – 185 °C**
Asphalt compaction	**140 °C – 165 °C**

Refer to AAPA Advisory Note 7 for further information.

Health & Safety

For a full description of hazards associated with the use of bituminous binders, please refer to the appropriate safety data sheet (SDS) available on the Puma Bitumen website.

Quality assurance

Puma Bitumen is known in the industry for consistently delivering high quality products. Our products can be relied upon to perform under the most diverse and demanding road conditions in Australia. This is possible thanks to our innovative product technology, comprehensive quality assurance programmes, efficient operations and a sophisticated production process unique to Puma – all supported by our highly skilled and experienced staff.

The Puma Energy Global Bitumen Technology Centre based in Altona, Victoria, is where we conduct industry-leading research and development. It is also from here that we provide technical expertise and support to our customers throughout Australia and across the world. Our team of technical specialists is dedicated to ensuring our products are thoroughly tested at every stage – from the selection of crude oil at the start of the production process, right through to customer supply.

Our product stewardship and rigorous quality management practices reflect our commitment to delivering the highest quality products that perform on the road. Our dedication to quality is recognised by our accreditation to Australian Standard AS/NZS 9001.

The information in this guide is of a general nature and should only be used as a guide. Please contact Puma Bitumen staff to ensure you have access to the most current information and for advice relating to any particular circumstances. Puma Energy (Australia) Bitumen Pty Ltd makes no warranty as to the completeness or accuracy of the information provided and, to the fullest extent permitted by applicable law, Puma Energy and its subsidiaries are not liable for any costs, loss or damage incurred in connection with use of the information provided in this guide. The material contained in this guide is protected by copyright. Puma Energy, OLEXOBIT and OLEXOCRUMB are registered trademarks of Puma Energy.

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