



# Paving Grade Bitumen

C170, C240, C320, C450, C600, M500 & M1000 Road Construction & Maintenance Application Bitumen is the binder of choice for the construction and maintenance of roads because it is durable and has exceptional waterproofing and adhesive properties. Puma Bitumen's Paving Grade Bitumen is refined and blended to meet strict road engineering requirements and industry specifications.

Being 100% reusable, bitumen has clear sustainability benefits. Asphalt is the most reused construction material.

In Australia, paving grade bitumen is categorised into viscosity (resistance to flow) gradings. The higher the grade, the stiffer the bitumen.



# **Bitumen Classifications**

#### Puma Bitumen Class 170

Class 170 bitumen is widely used in sprayed sealing and lower volume asphalt applications to provide durability and fatigue resistance. It is also used to manufacture cutback bitumen, bitumen emulsions and modified bitumen.

#### Puma Bitumen Class 240

Class 240 bitumen is for use in sprayed sealing applications where the local road agency has a preference for a slightly more viscous bitumen than Class 170.

#### Puma Bitumen Class 320

Class 320 bitumen is most commonly used to manufacture asphalt mixes. Owing to its higher viscosity, asphalt mixes can be produced with improved resistance deformation at higher temperature and traffic loads.

#### Puma Bitumen Class 450

Class 450 bitumen is for use in the manufacture of asphalt mixes where the local road agency has a preference for a slightly more viscous bitumen than Class 320.

#### Puma Bitumen Class 600

Class 600 bitumen is primarily used to manufacture heavyduty asphalt base layers that need to endure substantial traffic loadings.

#### Puma Bitumen Multigrade M500 & M1000

To produce Multigrade bitumen a processing technique is employed to alter the shape of the viscosity-temperature curve. Providing increased stiffness at high temperatures. M500 is a sprayed seal grade, whereas M1000 is used for asphalt.

## **Key characteristics**

Grade	Viscosity at 60°C [Pa.s]			
	Original	Post RTFO aging		
C170	140 – 200			
C240	190 – 280			
C320	260 - 380			
C450		750 - 1150		
C600	500 - 700			
M500	400 - 600			
M1000		3500 - 6500		

## Specification

Puma Bitumen Paving Grade Bitumen is manufactured to comply with Australian Standard AS2008 – Bitumen for Pavements

# **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 (°C)**

	C170, C240, C320	M500	C450, C600	M1000	
Spraying Temperature	175 – 185	175 – 185			
Asphalt mixing	140 - 180				
Asphalt compaction	135 – 165				
Storage up to 7 days	140 - 180				
Storage up to 14 days	130 - 150	120 - 140	130 - 150	120 - 140	

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.

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