PASARGAD OIL CO.

Introduction to Pasargad Oil Company









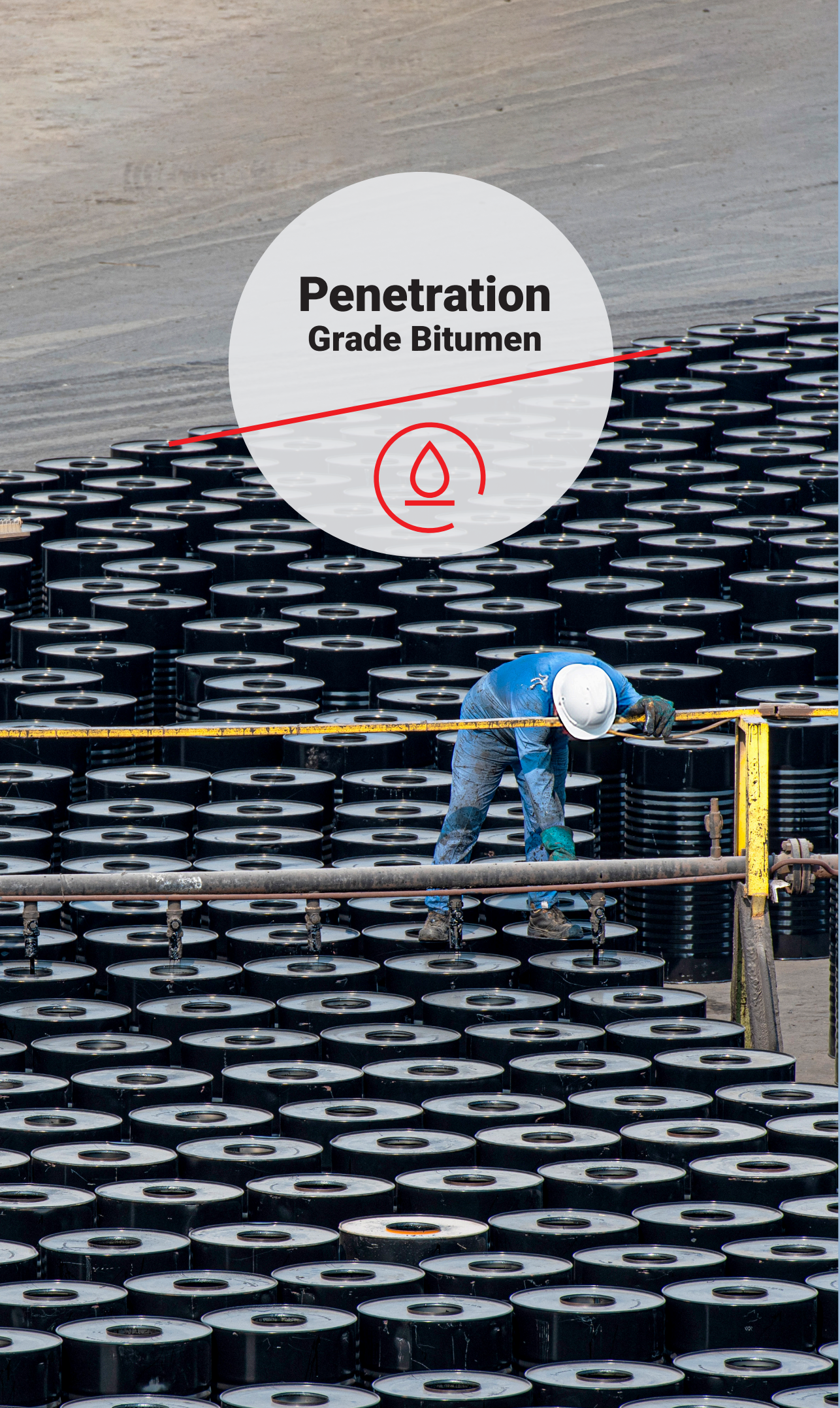
Pasargad Oil Company was established in 2003 to manage and operate six bitumen production complexes located at the Tehran, Arak, Abadan, Tabriz, Shiraz, and Bandar Abbas refineries. The combined annual production capacity of these facilities exceeds 4 million tonnes per year.

Pasargad Oil Company produces a diverse portfolio of bitumen products, including various grades of Penetration Grade Bitumen, Viscosity Grade Bitumen, Performance Grade (PG) Bitumen, Emulsified Bitumen, Cutback Bitumen, and Modified Bitumen.

Benefiting from its technical and economic advantages, the company currently holds more than half of Iran's domestic bitumen market. It also maintains a significant presence in Iran's bitumen export market through its two export terminals at Shahid Rajaee Port in Bandar Abbas and Imam Khomeini Port in Mahshahr, providing access to international trade routes. With a total storage capacity of more than 150,000 tonnes, the company has substantial infrastructure to support both domestic supply and export operations.

The strategic geographical distribution of the company's six production complexes enables efficient distribution of its products throughout Iran while also facilitating exports through multiple border crossings and international trade routes.

Penetration
Grade Bitumen



Product Introduction

Penetration Grade Bitumens are among the most widely used bituminous binders in road construction. They are classified according to the depth of penetration of a standard needle into the bitumen at 25°C. The appropriate grade is selected based on climatic conditions, pavement type, and service conditions.

Key Features

- Classification based on penetration grade
- Available in a wide range of consistency
- Suitable for a broad range of road construction applications

Advantages

- Ability to select the appropriate grade according to project conditions
- Well-established performance with a long history of successful use
- Ease of production and handling in asphalt mixing plants
- Compatible with a wide range of asphalt mix designs

Applications

- Production of Hot Mix Asphalt (HMA)
- Road and highway paving
- Pavement maintenance and rehabilitation projects



Grade
30 /45

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	30 to 45	ASTM D5
	Softening Point - (°C)	52 to 60	ASTM D36
	Flash Point - (°C)	Min 240	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 0.7	ASTM D5 & D36
	Fraass Breaking Point – (°C)	Max -5	EN 12593
	RTFOT (ASTM D2872)		
	Retained Penetration – (%)	Min 53	ASTM D5
	Increase in softening point, Severity 1 – (°C) or Increase in softening point, Severity 2 – (°C)	Max 8 Or Max 11	ASTM D36
	Change of Mass – (%)	Max 0.5	-

Grade
40 /50

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	40 to 50	ASTM D5
	Softening Point - (°C)	Min 49	ASTM D36
	Flash Point - (°C)	Min 230	ASTM D92
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Retained Penetration – (%)	Min 55	ASTM D5
	Change of Mass – (%)	Max 0.8	-



Grade
60 /70

Test	Range	Test method
Penetration @25 °C, 100 gr, 5 sec - (dmm)	60 to 70	ASTM D5
Softening Point - (°C)	Min 46	ASTM D36
Flash Point - (°C)	Min 230	ASTM D92
Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
Solubility – (%)	Min 99	ASTM D2024
Spot – (Negative or Positive)	Negative	AASHTO T102
TFOT (ASTM D1754)		
Retained Penetration – (%)	Min 52	ASTM D5
Ductility @25 °C, 5 cm/min – (cm)	Min 50	ASTM D113
Change of Mass – (%)	Max 0.8	-



Grade
50 /70

Test	Range	Test method
Penetration @25 °C, 100 gr, 5 sec - (dmm)	50 to 70	ASTM D5
Softening Point - (°C)	46 to 54	ASTM D36
Flash Point - (°C)	Min 230	ASTM D92
Solubility – (%)	Min 99	ASTM D2024
Penetration Index	-1.5 to 0.7	ASTM D5 & D36
Fraass Breaking Point – (°C)	Max -8	EN 12593
RTFOT (ASTM D2872)		
Retained Penetration – (%)	Min 50	ASTM D5
Increase in softening point, Severity 1 – (°C) or Increase in softening point, Severity 2 – (°C)	Max 9 Or Max 11	ASTM D36
Change of Mass – (%)	Max 0.5	-

Grade
70 /100

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	70 to 100	ASTM D5
	Softening Point - (°C)	43 to 51	ASTM D36
	Flash Point - (°C)	Min 230	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 0.7	ASTM D5 & D36
	Fraass Breaking Point – (°C)	Max -10	EN 12593
	RTFOT (ASTM D2872)		
	Retained Penetration – (%)	Min 46	ASTM D5
	Increase in softening point, Severity 1 – (°C) or Increase in softening point, Severity 2 – (°C)	Max 9 Or Max 11	ASTM D36
	Change of Mass – (%)	Max 0.8	-


Largest
Bitumen Producer
in the Middle East

Grade
85/100

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	85 to 100	ASTM D5
	Softening Point - (°C)	Min 42	ASTM D36
	Flash Point - (°C)	Min 230	ASTM D92
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Retained Penetration – (%)	Min 47	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 75	ASTM D113
	Change of Mass – (%)	Max 1	-

Grade
100/150

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	100 to 150	ASTM D5
	Softening Point - (°C)	39 to 47	ASTM D36
	Flash Point - (°C)	Min 230	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 0.7	ASTM D5 & D36
	Fraass Breaking Point – (°C)	Max -12	EN 12593
RTFOT (ASTM D2872)			
	Retained Penetration – (%)	Min 43	ASTM D5
	Increase in softening point, Severity 1 – (°C) or Increase in softening point, Severity 2 – (°C)	Max 10 Or Max 12	ASTM D36
	Change of Mass – (%)	Max 0.8	-

Grade
120/150

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	120 to 150	ASTM D5
	Softening Point - (°C)	Min 38	ASTM D36
	Flash Point - (°C)	Min 220	ASTM D92
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Retained Penetration – (%)	Min 42	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Change of Mass – (%)	Max 1.3	-

Grade
200/300

	Test	Range	Test method
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	200 to 300	ASTM D5
	Softening Point - (°C)	Min 32	ASTM D36
	Flash Point - (°C)	Min 175	ASTM D92
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Retained Penetration – (%)	Min 37	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Change of Mass – (%)	Max 1.5	-


Viscosity
Grade Bitumen
(VG)

Product Introduction

Viscosity Grade Bitumens are classified based on the flow behavior and viscosity of bitumen at specified temperatures. This grading system provides a more direct evaluation of bitumen flow characteristics under defined temperature conditions.

Key Features

- Classification based on viscosity
- Viscosity control at 60°C and 135°C
- Ability to select the appropriate grade according to production and service conditions

Advantages

- Better control of bitumen flow behavior compared with Penetration Grade Bitumen
- Helps determine appropriate mixing and processing temperatures
- Availability of different grades for various climatic and traffic conditions

Applications

- Production of Hot Mix Asphalt (HMA)
- Road and highway paving
- Road construction projects under various climatic conditions



Grade
AC-2.5

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	25 ± 5	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 80	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 200	ASTM D5
	Flash Point - (°C)	Min 165	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 125	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113

Grade
AC-5

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	50 ± 10	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 110	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 120	ASTM D5
	Flash Point - (°C)	Min 175	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 250	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113

Grade
AC-10

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	100 ± 20	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 150	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 70	ASTM D5
	Flash Point - (°C)	Min 220	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 500	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 50	ASTM D113

Grade
AC-20

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	200 ± 40	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 210	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 40	ASTM D5
	Flash Point - (°C)	Min 230	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 1000	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 20	ASTM D113

AC-30

Grade

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	300 ± 60	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 250	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 30	ASTM D5
	Flash Point - (°C)	Min 230	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 1500	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 15	ASTM D113

Grade

AC-40

	Test	Range	Test method
	Viscosity, @60 °C - (Pa.s)	400 ± 80	ASTM D2171
	Kinematic Viscosity, @135 °C - (mm2/s)	Min 300	ASTM D2170
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	Min 20	ASTM D5
	Flash Point - (°C)	Min 230	ASTM D92
	Solubility – (%)	Min 99	ASTM D2024
	Penetration Index	-1.5 to 1	ASTM D5 & D36
	Spot – (Negative or Positive)	Negative	AASHTO T102
	TFOT (ASTM D1754)		
	Viscosity, @60 °C - (Pa.s)	Max 2000	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 10	ASTM D113



Performance
Grade Bitumen (PG)

Product Introduction

Performance Grade (PG) Bitumens are classified based on actual pavement temperature conditions and expected in-service performance. Unlike traditional grading systems, which mainly rely on a single physical property such as penetration or viscosity, the Performance Grade system evaluates the rheological behavior of bitumen at different temperatures and under different aging conditions.

Key Features

- Grading based on pavement service temperatures
- Evaluation of bitumen behavior at high and low temperatures
- Assessment of resistance to short-term and long-term aging
- Use of rheological testing methods

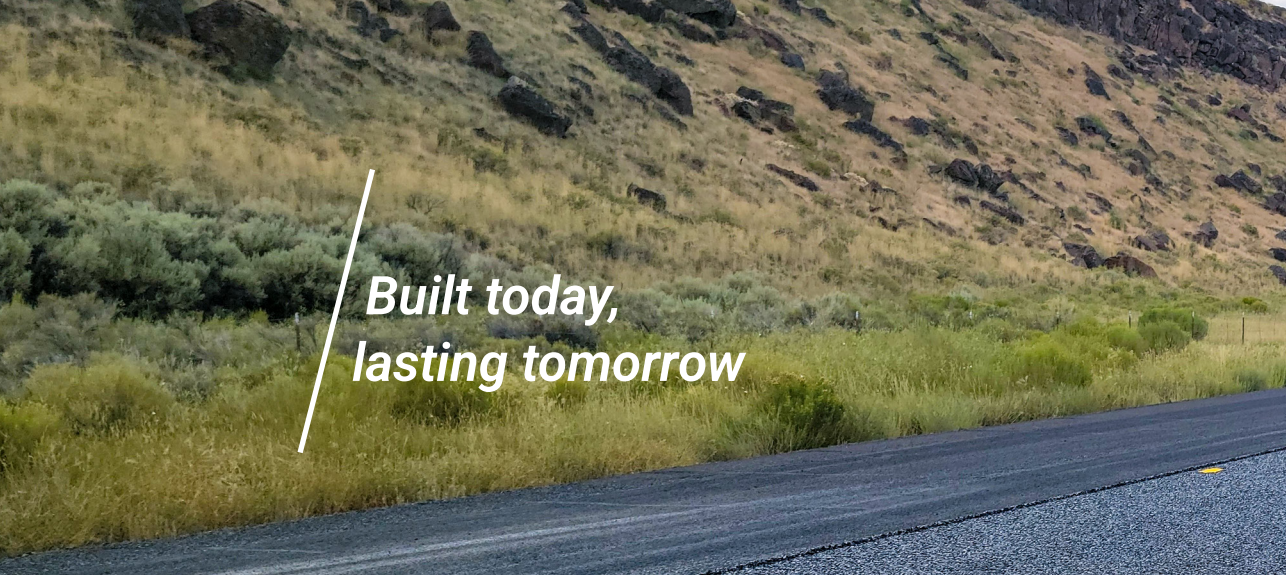
Advantages

- More engineering-based selection of bitumen according to project climatic conditions
- Better assessment of performance against rutting and cracking
- Better correlation of binder specifications with actual service conditions

Applications

- Freeways and highways
- High-performance pavements
- Regions with specific or severe temperature conditions
- Projects with performance-based requirements
- Airport runways





Grade
PG52-28

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @52 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @52 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @16 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-18 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-18 °C, @60 s	Min 0.3	ASTM D6648



Grade
PG58-16

Test	Range	Test method
Flash Point - (°C)	Min 230	ASTM D92
Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)		
Change of Mass – (%)	Max 1	-
Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
PAV (ASTM D6521)		
Dynamic Shear, G*xsinδ, @25 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
Creep Stiffness, @-6 °C, @60 s – (MPa)	Max 300	ASTM D6648
m-Value, @-6 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG58-22

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @22 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-12 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-12 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG58-28

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @58 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @25 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-6 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-6 °C, @60 s	Min 0.3	ASTM D6648

Grade

PG64-10

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @31 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @0 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @0 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG64-16

Test	Range	Test method
Flash Point - (°C)	Min 230	ASTM D92
Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)		
Change of Mass – (%)	Max 1	-
Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
PAV (ASTM D6521)		
Dynamic Shear, G*×sinδ, @28 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
Creep Stiffness, @-6 °C, @60 s – (MPa)	Max 300	ASTM D6648
m-Value, @-6 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG64-22

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @64 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @25 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-12 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-12 °C, @60 s	Min 0.3	ASTM D6648


A grade
for
every project

Grade
PG70-10

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @34 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @0 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @0 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG70-16

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @31 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-6 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-6 °C, @60 s	Min 0.3	ASTM D6648


Loading up to
10,000 MT
per day

Grade
PG70-22

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @70 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @28 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-12 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-12 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG76-10

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)			
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
PAV (ASTM D6521)			
	Dynamic Shear, G*×sinδ, @37 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @0 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @0 °C, @60 s	Min 0.3	ASTM D6648

Grade

PG76-16

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
	RTFOT (ASTM D2872)		
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	PAV (ASTM D6521)		
	Dynamic Shear, G*×sinδ, @34 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-6 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-6 °C, @60 s	Min 0.3	ASTM D6648

Grade
PG76-22

Test	Range	Test method
Flash Point - (°C)	Min 230	ASTM D92
Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)		
Change of Mass – (%)	Max 1	-
Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
PAV (ASTM D6521)		
Dynamic Shear, G*×sinδ, @31 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
Creep Stiffness, @-12 °C, @60 s – (MPa)	Max 300	ASTM D6648
m-Value, @-12 °C, @60 s	Min 0.3	ASTM D6648



Grade
PG82-10

Test	Range	Test method
Flash Point - (°C)	Min 230	ASTM D92
Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
Dynamic Shear, G*/sinδ, @82 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)		
Change of Mass – (%)	Max 1	-
Dynamic Shear, G*/sinδ, @82 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
PAV (ASTM D6521)		
Dynamic Shear, G*×sinδ, @40 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
Creep Stiffness, @0 °C, @60 s – (MPa)	Max 300	ASTM D6648
m-Value, @0 °C, @60 s	Min 0.3	ASTM D6648





CutBack
Bitumen
(CB)

Product Introduction

Cutback Bitumens are produced by blending bitumen with suitable petroleum solvents. The temporary reduction in viscosity caused by the solvent allows the binder to be applied in certain construction operations and at lower temperatures. After application, the solvent gradually evaporates, leaving the residual bitumen to perform as the binder.

Key Features

- Lower viscosity compared with the base bitumen
- Suitable for application at lower temperatures
- Controlled solvent evaporation rate depending on the cutback grade

Advantages

- Easy application, spreading, and penetration
- Suitable for certain road maintenance and repair operations
- Applicable where intensive heating is undesirable
- Compatible with a range of road construction and surface treatment applications

Applications

- Prime Coat
- Surface Treatment
- Road Maintenance Operations
- Certain surface coating applications



Grade
MC-30

	Test	Range	Test method
	Kinematic Viscosity, @60 °C - (mm2/s)	30 to 60	ASTM D2170
	Flash Point - (°C)	Min 38	ASTM D3143
	Water - (%)	Max 0.2	ASTM D95
	Spot – (Negative or Positive)	Negative	AASHTO T102
Distillate, volume percent of total distillate to 360 °C			
	to 225 °C	Max 35	ASTM D402
	to 260 °C	30 to 75	ASTM D402
	to 316 °C	75 to 95	ASTM D402
	Residue from distillation to 360 °C percent volume by difference	Min 50	ASTM D402
Tests on residue from distillation			
	Viscosity, @60 °C - (Pa.s)	30 to 120	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024


Quality,
from Lab
to Road

Grade

MC-250

	Test	Range	Test method
	Kinematic Viscosity, @60 °C - (mm2/s)	250 to 500	ASTM D2170
	Flash Point - (°C)	Min 66	ASTM D3143
	Water - (%)	Max 0.2	ASTM D95
	Spot – (Negative or Positive)	Negative	AASHTO T102
	Distillate, volume percent of total distillate to 360 °C		
225°	to 225 °C	Max 20	ASTM D402
260°	to 260 °C	5 to 55	ASTM D402
316°	to 316 °C	60 to 90	ASTM D402
	Residue from distillation to 360 °C percent volume by difference	Min 67	ASTM D402
	Tests on residue from distillation		
	Viscosity, @60 °C - (Pa.s)	30 to 120	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024

Grade
MC-800

	Test	Range	Test method
	Kinematic Viscosity, @60 °C - (mm2/s)	800 to 1600	ASTM D2170
	Flash Point - (°C)	Min 66	ASTM D3143
	Water - (%)	Max 0.2	ASTM D95
	Spot – (Negative or Positive)	Negative	AASHTO T102
Distillate, volume percent of total distillate to 360 °C			
	to 225 °C	-	ASTM D402
	to 260 °C	Max 40	ASTM D402
	to 316 °C	45 to 85	ASTM D402
	Residue from distillation to 360 °C percent volume by difference	Min 75	ASTM D402
Tests on residue from distillation			
	Viscosity, @60 °C - (Pa.s)	30 to 120	ASTM D2171
	Ductility @25 °C, 5 cm/min – (cm)	Min 100	ASTM D113
	Solubility – (%)	Min 99	ASTM D2024


Emulsion
Bitumen
(EM)

Product Introduction

Emulsified Bitumens are systems consisting of fine bitumen droplets dispersed in an aqueous phase and stabilized using a suitable emulsifier. These products enable bitumen to be applied at lower temperatures and are produced in various grades depending on their setting rate, electrical charge, and intended application.

Key Features

- Water-based system
- Available in rapid-setting, medium-setting, and slow-setting grades
- Adjustable setting rate according to the intended application
- Suitable for a wide range of cold road construction and maintenance operations

Advantages

- Reduced need for high-temperature heating of bitumen
- Enables many applications to be carried out at ambient temperature
- Easy application, spreading, and surface coating
- Suitable for pavement maintenance and preservation treatments

Applications

- Prime Coat
- Surface Treatment
- Slurry Seal
- Microsurfacing
- Cold Mix Asphalt
- Pavement Maintenance and Repair Operations



Grade
CSS-1

	Test	Range	Test method
	Viscosity, Saybolt Furol, @25 °C - (SFS)	20 to 100	ASTM D7496
	Viscosity, Saybolt Furol, @50 °C - (SFS)	-	ASTM D7496
	Storage Stability, @24 hrs – (%)	Max 1	ASTM D6930
	Demulsibility of Emulsified Asphalt – (%)	-	ASTM D6936
	Particle Charge	Positive	ASTM D7402
	Sieve Test – (%)	Max 1	ASTM D6933
	Cement Mixing – (%)	Max 2	ASTM D6935
	Distillation		
	Oil Distillate – (% by volume)	-	ASTM D6997
	Residue by Distillation – (% by mass)	Min 57	ASTM D6997
	Tests on residue from distillation		
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	100 to 250	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 40	ASTM D113
	Solubility – (%)	Min 97.5	ASTM D2024

Grade
CRS-1

	Test	Range	Test method
	Viscosity, Saybolt Furol, @25 °C - (SFS)	-	ASTM D7496
	Viscosity, Saybolt Furol, @50 °C - (SFS)	20 to 100	ASTM D7496
	Storage Stability, @24 hrs – (%)	Max 1	ASTM D6930
	Demulsibility of Emulsified Asphalt – (%)	Min 40	ASTM D6936
	Particle Charge	Positive	ASTM D7402
	Sieve Test – (%)	Max 1	ASTM D6933
	Cement Mixing – (%)	-	ASTM D6935
Distillation			
	Oil Distillate – (% by volume)	Max 3	ASTM D6997
	Residue by Distillation – (% by mass)	Min 60	ASTM D6997
Tests on residue from distillation			
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	100 to 250	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 40	ASTM D113
	Solubility – (%)	Min 97.5	ASTM D2024

Grade
CRS-2

	Test	Range	Test method
	Viscosity, Saybolt Furol, @25 °C - (SFS)	-	ASTM D7496
	Viscosity, Saybolt Furol, @50 °C - (SFS)	100 to 400	ASTM D7496
	Storage Stability, @24 hrs – (%)	Max 1	ASTM D6930
	Demulsibility of Emulsified Asphalt – (%)	Min 40	ASTM D6936
	Particle Charge	Positive	ASTM D7402
	Sieve Test – (%)	Max 1	ASTM D6933
	Cement Mixing – (%)	-	ASTM D6935
	Distillation		
	Oil Distillate – (% by volume)	Max 3	ASTM D6997
	Residue by Distillation – (% by mass)	Min 65	ASTM D6997
	Tests on residue from distillation		
	Penetration @25 °C, 100 gr, 5 sec - (dmm)	100 to 250	ASTM D5
	Ductility @25 °C, 5 cm/min – (cm)	Min 40	ASTM D113
	Solubility – (%)	Min 97.5	ASTM D2024


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Polymer
Modified Bitumen (PMB)



Product Introduction

Modified Bitumens are produced to enhance binder performance under specific traffic and climatic conditions. The use of suitable modifiers can improve the rheological behavior, resistance to permanent deformation, and other performance-related properties of bitumen.

Key Features

- Enhanced rheological properties
- Designed to meet project-specific performance requirements
- Capability to produce special grades for heavy traffic loadingoperations

Advantages

- Increased resistance to rutting
- Improved elastic recovery in appropriately formulated polymer-modified binders
- Improved ability to withstand severe service conditions
- Potential to extend pavement service life when properly designed and constructed

Applications

- High-traffic highways and freeways
- Intersections and areas subject to frequent stopping and acceleration
- Special airport and industrial paving projects



Grade
PG76S-22

	Test	Range	Test method
	Flash Point - (°C)	Min 230	ASTM D92
	Viscosity @ 135 °C - (Pa.s)	Max 3	ASTM D4402
	Dynamic Shear, G*/sinδ, @76 °C, @10 rad/s - (KPa)	Min 1	ASTM D7175
RTFOT (ASTM D2872)			
	Change of Mass – (%)	Max 1	-
	Dynamic Shear, G*/sinδ, @52 °C, @10 rad/s - (KPa)	Min 2.2	ASTM D7175
	MSCR, Jnr 3.2, @76 °C - (Kpa-1) and MSCR, Jnr diff, @76 °C - (%)	Max 4.5 and Max 75	ASTM D7175
PAV (ASTM D6521)			
	Dynamic Shear, G*×sinδ, @31 °C, @10 rad/s - (KPa)	Max 5000	ASTM D7175
	Creep Stiffness, @-12 °C, @60 s – (MPa)	Max 300	ASTM D6648
	m-Value, @-12 °C, @60 s	Min 0.3	ASTM D6648

Advanced
bitumen,

advanced
performance



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