PETRO GOLD

Technical Data Sheet (TDS)

Bitumen PG 70-16

Product Identification

Product Name: Bitumen PG 70-16
Grade: PG 70-16
Product Type: Performance Graded Asphalt Binder
Standard: AASHTO M 320 / Superpave Performance Grading System
Application: Asphalt pavements, highways, expressways, urban roads, airport pavements, and heavy-traffic infrastructure projects.

Product Description

Bitumen PG 70-16 is a high-performance asphalt binder engineered to meet the requirements of the Superpave Performance Grading (PG) system. The binder is designed to provide excellent rutting resistance at high pavement temperatures up to 70°C while maintaining adequate flexibility and resistance to thermal cracking at temperatures down to -16°C.

PG 70-16 is widely used in regions with hot climates and heavy traffic conditions where pavement durability and long-term performance are critical. The product offers enhanced resistance to permanent deformation, improved structural stability, and reliable performance in demanding road construction applications.

Typical Applications

- Highways and motorways
- Expressways
- Urban and municipal roads
- Industrial roads
- Freight corridors
- Airport runways and taxiways
- Container terminals
- Heavy-duty pavements
- Infrastructure and transportation projects

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Performance Grade Classification

Property	Grade
High Pavement Design Temperature	70°C
Low Pavement Design Temperature	-16°C
Performance Grade	PG 70-16

Typical Technical Specifications

Original Binder Properties

Test Property	Test Method	Requirement
Flash Point, °C	AASHTO T48	≥ 230
Rotational Viscosity at 135°C, Pa·s	AASHTO T316	≤ 3.0
Dynamic Shear Rheometer (G*/sinδ) at 70°C, kPa	AASHTO T315	≥ 1.00
Solubility in Trichloroethylene, %	AASHTO T44	≥ 99.0

RTFO-Aged Binder Properties

(Rolling Thin Film Oven Residue)

Test Property	Test Method	Requirement
Mass Loss, %	AASHTO T240	≤ 1.0
Dynamic Shear Rheometer (G*/sinδ) at 70°C, kPa	AASHTO T315	≥ 2.20

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PAV-Aged Binder Properties

(Pressure Aging Vessel Residue)

Test Property	Test Method	Requirement
Dynamic Shear Rheometer (G*sinδ), kPa	AASHTO T315	≤ 5,000

Low Temperature Performance

Test Property	Test Method	Requirement
BBR Stiffness (S) at -16°C, MPa	AASHTO T313	≤ 300
BBR m-value at -16°C	AASHTO T313	≥ 0.300

Physical Properties

Property	Typical Value
Appearance	Black homogeneous material
State at Ambient Temperature	Semi-solid
Odor	Characteristic bituminous odor
Specific Gravity at 25°C	1.00–1.05
Water Content	Negligible
Solubility	≥ 99%

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Performance Characteristics

High-Temperature Stability

Maintains stiffness and structural integrity at pavement temperatures up to 70°C.

Rutting Resistance

Provides excellent resistance to permanent deformation caused by repeated traffic loading.

Pavement Durability

Improves pavement service life and reduces maintenance requirements.

Aging Resistance

Exhibits good resistance to oxidative aging during production and service.

Compatibility

Compatible with conventional asphalt mixtures and Superpave-designed mixes.

Recommended Storage Conditions

- Store in insulated bitumen storage tanks.
- Maintain storage temperature between 150°C and 175°C.
- Avoid prolonged heating above 190°C.
- Protect from contamination by water, dust, and foreign materials.
- Use proper circulation systems to maintain uniform temperature.

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Handling Precautions

- Use appropriate personal protective equipment (PPE).
- Avoid direct contact with hot material.
- Ensure adequate ventilation during heating and handling.
- Follow local safety regulations for hot bitumen products.
- Prevent water contact with hot bitumen to avoid splashing.

Transportation

Bitumen PG 70-16 may be transported in:

- Heated road tankers
- Insulated bitumen tankers
- Rail tank cars
- Bulk storage containers

The product should be maintained at recommended handling temperatures throughout transportation.

Quality Control

Each production batch should be tested according to applicable Superpave standards, including:

- Rotational Viscosity
- Dynamic Shear Rheometer (DSR)
- Rolling Thin Film Oven (RTFO)
- Pressure Aging Vessel (PAV)
- Bending Beam Rheometer (BBR)
- Flash Point
- Solubility

Compliance Standards

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- AASHTO M 320
- AASHTO T315
- AASHTO T313
- AASHTO T240
- AASHTO T316
- ASTM D6373 (where applicable)
- Superpave Performance Grading Specifications

Packaging Options

- Bulk tanker loading
- ISO tank containers
- Bitumen storage terminal supply
- Customized industrial packaging upon request