



# Technical Data Sheet (TDS)

**Product Type:** Penetration Grade Bitumen  
**Standard Reference:** ASTM D946 / EN 12591  
**Grade:** 40/50  
**Supplier:** ATDM

## 1. Product Description

Bitumen 40/50 is a hard penetration grade asphalt binder produced from vacuum distillation of crude oil and controlled air blowing when required. This grade is classified under penetration grade bitumen and is commonly used in road construction projects located in warm climates and high-traffic areas.

The penetration value of this grade ranges between 40 to 50 (0.1 mm) at 25°C, indicating a relatively hard binder compared to softer grades such as 60/70 or 80/100.

## 2. Technical Specification Table

Property	Test Method	Unit	Specification
Penetration @ 25°C	ASTM D5	0.1 mm	40 – 50
Softening Point (Ring & Ball)	ASTM D36	°C	52 – 60
Ductility @ 25°C	ASTM D113	cm	≥ 100
Flash Point (Cleveland Open Cup)	ASTM D92	°C	≥ 250
Specific Gravity @ 25°C	ASTM D70	—	1.01 – 1.06
Solubility in Trichloroethylene	ASTM D2042	%	≥ 99.0
Loss on Heating (TFOT)	ASTM D6	% wt	≤ 0.5
Retained Penetration after TFOT	ASTM D5	%	≥ 60
Ductility after TFOT	ASTM D113	cm	≥ 25
Spot Test	AASHTO T102	—	Negative
Water Content	ASTM D95	%	≤ 0.2

**UAE OFFICE:**

**ADD: 3509 OF THE BURLINGTON TOWER, BUSINESS BAY, DUBAI-UAE**

**CELL: [0097142369830](tel:0097142369830)**

### 3. Typical Physical Characteristics

- Appearance: Black solid or semi-solid
- Odor: Slight petroleum odor
- Form: Solid at ambient temperature
- Solubility: Completely soluble in carbon disulfide
- Thermal Sensitivity: Moderate

### 4. Performance Characteristics

Bitumen 40/50 provides:

- High resistance to rutting in hot climates
- Strong aggregate adhesion
- Improved structural stability under heavy traffic
- Good resistance to deformation
- Suitable stiffness for asphalt concrete production

This grade is commonly selected for highways, airport runways, industrial yards, and heavy-load pavements.

### 5. Applications

- Hot mix asphalt production
- Road base and surface layers
- Airport pavement construction
- Heavy-duty asphalt concrete
- Bridge deck waterproofing
- Industrial flooring

### 6. Packaging Options

Bitumen 40/50 can be supplied in:

- New steel drums (150–180 kg net)
- Jumbo bags (1 MT)
- Poly bags
- Bulk vessel
- Bitutainer containers
- Flexi tank (subject to agreement)

---

**UAE OFFICE:**

**ADD: 3509 OF THE BURLINGTON TOWER, BUSINESS BAY, DUBAI-UAE**

**CELL: [0097142369830](tel:0097142369830)**

## 7. Storage and Handling

- Store in a dry, covered area.
- Avoid prolonged exposure to direct sunlight.
- Recommended heating temperature: 150–170°C.
- Do not overheat above 200°C to prevent oxidation.
- Use protective gloves and face shield when handling hot bitumen.

## 8. Safety Information

- Flash point above 250°C under standard testing conditions
- Avoid skin contact with hot material
- In case of burn, cool immediately with cold water
- Refer to MSDS for detailed safety guidelines

## 9. Compliance and Standards

Bitumen 40/50 complies with:

- ASTM D946
- EN 12591
- AASHTO M20
- ISIRI 2909 (where applicable)

## 10. Chemical Composition (General)

Bitumen 40/50 consists primarily of:

- Asphaltenes
- Resins
- Aromatics
- Saturates

It contains no added modifiers unless specifically requested.

---

**UAE OFFICE:**

**ADD: 3509 OF THE BURLINGTON TOWER, BUSINESS BAY, DUBAI-UAE**

**CELL: [0097142369830](tel:0097142369830)**