

## Technical Specifications of Bitumen 40/50

Here's a detailed table along with an explanation of the technical specifications of **Bitumen 40/50** in English:

Specification	Typical Value	Unit	Description
<b>Penetration</b>	40 - 50	0.1 mm	Indicates the hardness of bitumen; lower values mean harder bitumen.
<b>Softening Point</b>	50 - 60	°C	Temperature at which bitumen softens. Higher softening points are better for warmer climates.
<b>Flash Point</b>	Min 250	°C	The temperature at which bitumen vapors can ignite. A higher value indicates better safety during heating.
<b>Solubility in Toluene</b>	99.5% minimum	%	Shows how soluble the bitumen is in organic solvents like toluene, ensuring high purity.
<b>Density</b>	1.01 - 1.06	g/cm <sup>3</sup>	The density of bitumen at 25°C. Shows its weight compared to water.
<b>Ductility</b>	Min 100	cm	Measures the bitumen's ability to stretch without breaking, ensuring flexibility at various temperatures.
<b>Fraass Breaking Point</b>	Max -10	°C	Indicates the temperature at which bitumen becomes brittle, ensuring good performance at low temperatures.
<b>Viscosity</b>	Viscous	-	High viscosity makes bitumen suitable for warm climates, preventing it from becoming too fluid.

### Explanation:

- Penetration (40-50):** This value measures the hardness of bitumen. The lower the value, the harder the bitumen is. Bitumen with a penetration of 40/50 is ideal for road construction in warm climates because it can resist deformation under heavy traffic.
- Softening Point (50-60°C):** Indicates the temperature at which the bitumen starts to soften. Bitumen with a higher softening point is more suitable for warm climates as it can resist melting or becoming too soft.
- Flash Point (≥250°C):** This high flash point indicates that the bitumen is safe to handle at high temperatures, reducing the risk of accidental ignition.
- Solubility in Toluene:** A solubility of at least 99.5% means the bitumen is of high purity, which is crucial for consistent performance in construction.

5. **Density (1.01-1.06 g/cm<sup>3</sup>):** This shows how dense the bitumen is. It is essential for calculating the volume and amount required for construction projects.
6. **Ductility (≥100 cm):** This property ensures that bitumen can stretch without breaking, which is important for maintaining flexibility in road surfaces that undergo thermal expansion and contraction.
7. **Fraass Breaking Point (≤ -10°C):** Ensures that the bitumen doesn't become brittle at low temperatures, which could otherwise lead to cracking in colder climates.
8. **Viscosity:** The high viscosity of this bitumen makes it resistant to flow at higher temperatures, preventing it from becoming too liquid in hot climates.

Bitumen 40/50 is ideal for use in warm climates for high-traffic roads, offering durability, flexibility, and safety in extreme conditions.

