

## Analysis and Specification of Bitumen MC30

Bitumen MC30 is a medium-curing cutback bitumen widely used in road construction, priming, and surface dressing applications. It is produced by blending penetration-grade bitumen with a solvent to reduce its viscosity, making it easier to apply at ambient temperatures. Once applied, the solvent evaporates, leaving behind a solid, durable bitumen layer. MC30 is particularly effective for priming granular surfaces before asphalt application.

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### Chemical Composition:

Bitumen MC30 consists of:

- **Bitumen:** 55–65%
- **Solvent (kerosene or naphtha):** 35–45%
- **Additives (if required):** 0–2%

The solvent content ensures proper penetration into the base surface and aids in better bonding with subsequent asphalt layers.

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### Key Properties and Specifications (ASTM D2027 & AASHTO M82 Standards):

Property	Specification	Test Method
<b>Kinematic Viscosity @ 60°C</b>	30 – 60 cSt	ASTM D2170
<b>Flash Point (Tag Open Cup)</b>	Min 38°C	ASTM D3143
<b>Distillation Test</b>		
- Distillate to 225°C	Max 30%	ASTM D402
- Distillate to 260°C	60 – 87%	ASTM D402
- Distillate to 316°C	Min 90%	ASTM D402
<b>Residue by Distillation</b>	Min 50%	ASTM D402
<b>Penetration @ 25°C (100g, 5s)</b>	80 – 120 dmm	ASTM D5
<b>Ductility @ 25°C (5 cm/min)</b>	Min 100 cm	ASTM D113

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Property	Specification	Test Method
Solubility in Trichloroethylene	Min 99%	ASTM D2042
Water Content	Max 0.2%	ASTM D95

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#### Applications:

1. **Prime Coat:** For granular bases before hot mix asphalt (HMA) application.
  2. **Tack Coat:** Provides adhesion between asphalt layers.
  3. **Dust Control:** On unpaved surfaces to minimize dust and enhance compaction.
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#### Advantages:

- High penetration and bonding capability.
  - Easy to apply at ambient temperatures.
  - Quick curing after application due to solvent evaporation.
  - Strong adhesion to both granular and asphalt surfaces.
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#### Safety and Handling:

- Avoid direct contact with skin; use protective gloves and goggles.
  - Store in well-ventilated areas away from heat sources.
  - Ensure proper ventilation when applying to prevent inhalation of vapors.
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#### Conclusion:

Bitumen MC30 is an essential material in road construction, providing superior adhesion and durability. Its well-defined specifications make it a reliable choice for various applications in pavement engineering.

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