

Bitumen penetration grade 40/50

**Application:** This grade is provided during the process of oxidation of vacuum bottom in bitumen production unit. It's used in tropical regions.

**Specifications:**

BITUMEN GRADE 40-50		
Specification		Test method
Specific gravity @25/25 C	1.01-1.06	D-70
Penetration @25 C	40-50	D-5
Softening point C	52-60	D-36
Ductility @25 C	100 min	D-113
Loss on heating (wt)%	0.2 max	D-6
Drop in penetration after heating %	20 max	D-6 & D-5
Flash point C	250min	D-92
Solubility in CS <sub>2</sub> (wt)%	99.5 min	D-4
Spot test	negative	*A.A.S.H.O.T.102
* American association of state highway officials		

## Bitumen penetration grade 60/70

**Application:** This grade is provided during the process of oxidation of vacuum bottom in bitumen production unit. It's used in mild regions due to its medium air blowing.

### Specifications:

BITUMEN GRADE 60/70		
Specification		Test method
Specific gravity @25/25 C	1.01-1.06	D-70
Penetration @25 C	60/70	D-5
Softening point C	49/56	D-36
Ductility @25 C	100 min	D-113
Loss on heating (wt)%	0.2 max	D-6
Drop in penetration after heating %	20 max	D-6 & D-5
Flash point C	250min	D-92
Solubility in CS <sub>2</sub> (wt)%	99.5 min	D-4
Spot test	negative	*A.A.S.H.O.T.102
* American association of state highway officials		

### Bitumen penetration grade 80/100

**Application:** This grade is provided during the process of oxidation of vacuum bottom in bitumen production unit. It's used in cold regions due to its relatively low air blowing.

### Specifications:

bitumen grade 80/100		
	SPECIFICATION	TEST METHOD
SPECIFIC GRAVITY @25/25 C	1.00-1.05	D-70
PENETRATION @25 C	80/100	D-5
SOFTENING POINT C	45/52	D-36
DUCTILITY @25 C	100 MIN	D-113
LOSS ON HEATING (WT)%	0.5 MAX	D-6
DROP IN PENETRATION AFTER HEATING %	20 MAX	D-6 & D-5
FLASH POINT C	225MIN	D-92
SOLUBILITY IN CS <sub>2</sub> (WT)%	99.5 MIN	D-4
SPOT TEST	NEGATIVE	*A.A.S.H.O.T.102
* AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS		

## Bitumen Viscosity Grade

### Application:

**VG-10** is widely used in spraying applications such as surface-dressing and paving in very cold climate in lieu of old 80/100 Penetration grade. It is also used to manufacture Bitumen Emulsion and Modified Bitumen products.

**VG-20** is used for paving in cold climate & high altitude regions.

**VG-30** is primarily used to construct extra heavy duty Bitumen pavements that need to endure substantial traffic loads. It can be used in lieu of 60/70 Penetration grade.

**VG-40** is used in highly stressed areas such as intersections, near toll booths and truck parking lots in lieu of old 30/40 Penetration grade. Due to its higher viscosity, stiffer Bitumen mixes can be produced to improve resistance to shoving and other problems associated with higher temperature and heavy traffic loads.

### Specifications:

Characteristic	VG-10	VG-20	VG-30	VG-40	Test Method
Penetration @25C,100 g	80	60	45	35	IS 1203
Absolute Viscosity@ 60 <sup>0</sup> C, Poises, Min	800	1600	2400	3200	IS 1206
Kinematic Viscosity@ 135 <sup>0</sup> C, c St, Min	250	300	350	400	IS1206
Softening Point(R&B), <sup>0</sup> C, Min	40	45	47	50	IS 1205
Test on Residue from Rolling thin film oven test					
A-Viscosity Ratio @60 <sup>0</sup> c	4.0	4.0	4.0	4.0	IS 1206
B-Ductility@25 <sup>0</sup> c, Cm, Min	75	50	40	25	IS 1208
Flash Point <sup>0</sup> C, Min	220	220	220	220	IS 1448
Solubility in TCE , Min	99.0 Min	99.0 Min	99.0Min	99.0 Min	IS 1216