

Viscosity Grade Bitumen

SPECIFICATION	TEST METHOD	VG-10	VG-20	VG-30	VG-40
Absolute viscosity 60 C° , Poises (min)	ASTM D-2171	800	1600	2400	3200
Kinematic viscosity @ 135 C° cSt (min)	ASTM D-2170	250	300	350	400
Flash point (cleveland Open-Cup) , °C (min)	ASTM D-92	220	220	220	46-52
Solubility in trichloroethylene , % (min)	ASTM D-2040	99	99	99	200
Softening Point , Ring & Ball , °C	ASTM D-36	40	45	47	99
Penetration @ 25 °C , 0.1mm , 100gr , 5sec	ASTM D-5	80-100	60-80	50-70	50
Specific Gravity @ 27/27 °C (min)	ASTM D-5	0.99	0.99	0.99	40-60
Test residue from TFOT :					
I) Viscosity ratio @ 60 °C (mx)	ASTM D-2171	4	4	4	4
I) Ductility @ 25°C , after TFOT (min)	ASTM D-113	75	50	40	25

In this model, bitumen is classified based on its viscosity at 60 or 135 degrees Celsius, such as VG-10, VG-30, and VG-40. This classification provides a better understanding of the behavior of bitumen in real road construction conditions and is very common in asphalt paving in hot, high-traffic areas.

VG-10 :

VG10 grade is widely used in place of 85/100 bitumen in spraying applications such as surface coating and road construction in very cold climates. It is also used to make emulsion bitumen and modified bitumen products.

VG-20 :

VG20 grade is usually used for road construction in cold climates and high altitude areas

VG-30 :

Vg30 is primarily used in place of 50/70 bitumen for road construction in severe conditions requiring significant traffic loads .

VG-40 :

VG40 is used in place of 50/35 bitumen in high traffic areas such as intersections, near toll booths and heavy vehicle parking lots. Due to its higher viscosity, harder bitumen mixtures can be produced to improve resistance to drift and other problems associated with higher temperatures and heavy traffic loads.