



TECHNICAL DATA SHEET PAVING GRADE (Viscosity) AC Grading

DESCRIPTION:

Viscosity Grade Bitumen (Asphalt) is a standard grade Bitumen usually used as a Paving Grade Bitumen suitable for road construction and to produce asphalt pavements with superior properties. This grade of Bitumen is mainly used in the manufacture of hot mix asphalt for bases and wearing courses and possesses characteristics and qualities unique and quite different from other agents. They achieve very flexible and tenacious connections with other materials due mainly to viscoelastic response of bitumen, which behaviour depends on how fast charges are applied. Viscosity Grade Bitumen supplied by Wataniya Bitumen and Oil Refinery is petroleum grade bitumen, manufactured from Biturox design. Viscosity Grade bitumen's are specified by the methods described in ASTM Standard D3381-09 and AASHTO M226-80 (2008). Viscosity Graded specifications cover bitumen (asphalt) graded by Viscosity at 60 °C (140 °F). Viscosity grading can be done on original (as-supplied) asphalt binder samples (called AC grading) or aged residue samples (called AR grading). The AC grading is based on absolute viscosity at 60 °C in units of 100 poises. Six asphalt cement viscosity grades were established as AC-2.5 (softest), AC-5, AC-10, AC-20, AC-30, AC-40 (hardest). AC-2.5 means asphalt cement with a target viscosity of 250 poises at 60°C (250 has been abbreviated to 2.5). Similarly, AC-5, AC-10, AC-20, AC-30, and AC-40 mean asphalt cement with target viscosity of 500, 1000, 2000, 3000, and 4000 poises, respectively. Low viscosity grades AC-2.5 and AC-5 are used in cold climate while high viscosity grades AC-10 to AC-40 are generally suitable for the hot climate.

PACKAGING:

Paving Bitumen is commonly packed in new steel drums, 150, 180 & 220 Kg barrels and Jumbo Bags or Flexi tank. Likewise, the rest of grades are ready to load Ex-work bulk Wataniya Bitumen by truck.

CHARACTERISTICS AND SPECIFICATIONS:

Wataniya Bitumen guarantees that the Viscosity Grade bitumen is produced in compliance and conformity to International Standards such as ASTM Standard D 3381-09 and AASHTO M226-80 (2008). Also, it meets the following specification requirements:



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SPECIFICATION (ASTM D 3381 – 09)	UNITS	TEST METHOD	AC-2.5	AC-5	AC-10	AC-20	AC-30	AC-40
Viscosity, 140°F (60°C)	P	ASTM D 2171	250± 50	500± 100	1000± 200	2000± 400	3000± 600	4000± 800
Viscosity, 275°F (135°C), Min	cSt	ASTM D 2171	80	110	150	210	250	300
Penetration, 77°F (25°C), 100g, 5sec, Min	0.1 mm	ASTM D 5	200	120	70	40	30	20
Flash Point, Cleveland Open Cup, Min	°C	ASTM D 92	163	177	219	232	232	232
Solubility in Trichloroethylene, Min	%Wt.	ASTM D 2042	99	99	99	99	99	99
TESTS ON RESIDUE FROM THIN-FILM OVEN TEST								
Viscosity, 140°F (60°C), Max	P	ASTM D 2171	1250	2500	5000	10000	15000	20000
Ductility, 77°F (25°C), 5cm/min, Min	CM	ASTM D 113	(1)100	100	50	20	15	10

TESTS ON RESIDUE FROM ROLLING THIN-FILM OVEN (ASTM D3391 - 8)	UNITS	AR-1000	AR-2000	AR-4000	AR-8000	AR-16000
Viscosity, 140°F (60°C)	P	1000 ± 250	2000 ± 500	4000 ± 1000	8000 ± 2000	16000 ± 4000
Viscosity, 275°F (135°C), Min	cSt	140	200	275	400	550
Penetration, 77°F (25°C), 100g, 5sec, Min	0.1 mm	65	40	25	20	20
Ductility @ 25°C Min	cm	100	100	75	75	75
TESTS ON ORIGINAL ASPHALT						
Flash point, Min	°C	205	219	227	232	238
Solubility in Trichloroethylene, Min	% Wt.	99	99	99	20	99

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