Building
Viksit Bharat

DRG Bitumen
Strengthening Bharat, One Road at a Time

POLYMER MODIFIED BITUMEN

AVAILABLE GRADES

- PMB-70
- PMB-40
- PMB 64-10
- PMB 70-10
- PMB 76-10
- PMB 82-10
- PMB 76-22

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BENEFITS

01

Improved Elasticity:

PMB can recover its original shape after deformation, which reduces rutting and fatigue cracking.

02

Higher Softening Point:

It withstands higher temperatures without softening, making it suitable for hot climates.

03

Low Temperature Flexibility:

It remains flexible in cold climates, reducing the risk of thermal cracking.

04

Enhanced Adhesion:

PMB bonds better with aggregates, improving pavement durability.

05

Resistance to Aging and Water Damage:

PMB resists oxidation, UV degradation, and water penetration better than conventional bitumen.

06

Greater Fatigue and Rutting Resistance:

It can handle repeated heavy traffic loads and stress without significant damage.

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TECHNICAL SPECIFICATIONS OF DRG BITUMEN OXIDIZED BITUMEN

Sl.No.	Characteristics	Grades and Requirements							Method of Test
		PMB 70	PMB 40	PMB 64-10	PMB 70-10	PMB 76-10	PMB 82-10	PMB 76-22	IS Code
A) Tests carried out on original binder									
i)	Softening point (R and B), °C, Min	55	60	60	65	70	80	75	IS 1205
ii)	Elastic recovery of half thread in ductilometer at 15°C, percent, Min	60	60	70	70	70	85	80	-
iii)	Flash point, COC, °C, Min	220	220	230	230	230	230	230	IS 1209
iv)	Viscosity at 150°C, Pa.s, Max	3	2	1.2	1.2	1.2	1.6	1.5	ASTM D 4402
v)	Complex modulus (G*) divided by Sin delta (G*/sin δ) as Min 1.0 kPa, 25 mm Plate, 1 mm Gap, at 10 rad/s, at a temperature, °C	-	-	64	70	76	82	76	-
vi)	Phase Angle (δ), degree, Max	-	-	75	75	75	75	75	-
vii)	Separation, difference in softening point (R&B), °C, Max	3	3	3	3	3	3	3	-
viii)	FRAASS breaking 1) point, °C, Max	-	-	-10	-10	-10	-10	-22	IS 9381

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		PMB 70	PMB 40	PMB 64-10	PMB 70-10	PMB 76-10	PMB 82-10	PMB 76-22	IS Code
B) Tests carried out on rolling thin film oven (RTFO) residue[2]									
i)	Loss in mass, percent, Max	-	-	1.0	1.0	1.0	1.0		IS 9382
ii)	Complex modulus (G*) divided by Sin delta (G*/sin δ) as Min 2.2 kPa, 25 mm Plate,1 mm Gap, at 10 rad/s at a temperature, °C	-	-	64	70	76	82	76	-
iii)	MSCR TEST								-
a)	Standard Traffic (S) $J_{nr3.2}$, Max 4.5 kPa-1 J_{nrdiff}, Max 75 percent Test Temperature, °C	-	-	64	70	76	82	76	
b)	Heavy Traffic (H) $J_{nr3.2}$, Max 2 kPa^{-1} J_{nrdiff}, Max 75 percent	-	-	64	70	76	82	76	
c)	Very Heavy Traffic (V) $J_{nr3.2,}$ Max 1 kPa^{-1} $J_{nrdiff,}$ Max 75 percent Test Temperature, °C	-	-	64	70	76	82	76	
d)	Extremely Heavy Traffic (E) $J_{nr3.2}$, Max 0.5 kPa^{-1} J_{nrdiff}, Max 75 percent Test Temperature, °C	-	-	64	70	76	82	76	
Tests to be Carried out on Pressure Aging Vessel (PAV) Residue[3)]									
i)	Complex modulus (G*) multiplied by Sin delta (G*sin δ) as Max 6 000 kPa, 8 mm Plate, 2 mm Gap, at 10 rad/s at a temperature, °C	-	-	31	34	37	40	31	-

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