

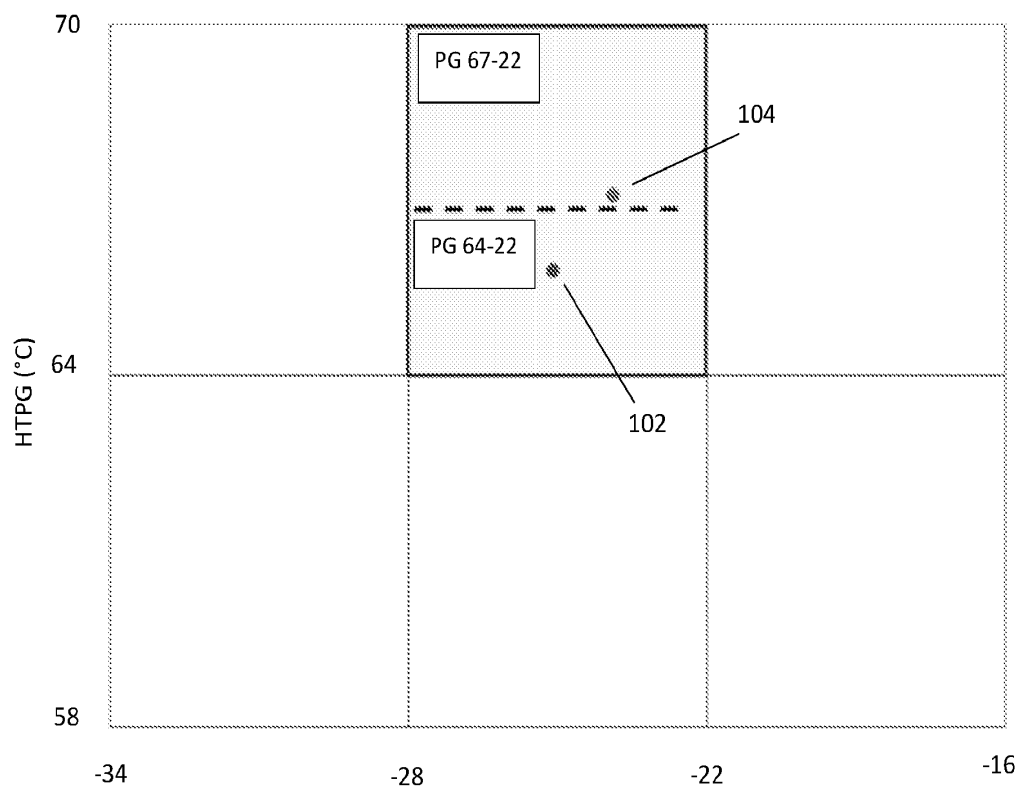


FIG. 1

Tests	Method	PG64 Blend	PG67 Blend
Blend %: Rock		91.0%	91.6%
Blend %: Bio Oil		9.0%	8.4%
Conventional			
Flash Point (COC), °C	AASHTO T48	329	--
Rolling Thin Film Oven Test			
Change in Mass, %	AASHTO T240	-0.551	-0.517
Superpave			
<i>Original Asphalt</i>			
Viscosity at 135°C, Pa.s	AASHTO T44		
Temp °C 1	AASHTO T315	64.0	64.0
G*/sin δ, kPa, at Temp 1	AASHTO T315	1.23	1.48
Temp °C 2	AASHTO T315	70.0	70.0
G*/sin δ, kPa, at Temp 2	AASHTO T315	0.61	0.70
Limiting Temp (where = 1.00 kPa)	Calculation	65.8	67.1
<i>Rolling Thin Film Oven Residue</i>			
Temp °C 1	AASHTO T315	64.0	64.0
G*/sin δ, kPa, at Temp 1	AASHTO T315	3.75	4.45
Temp °C 2	AASHTO T315	70.0	70.0
G*/sin δ, kPa, at Temp 2	AASHTO T315	1.73	2.02
Limiting Temp (where = 2.20 kPa)	Calculation	68.1	69.4
<i>Pressure Aging Vessel Residue</i>			
	AASHTO R28		
Temp °C 1	AASHTO T315	28.0	28.0
G*/sin δ, kPa, at Temp 1	AASHTO T315	3762	4459
Temp °C 2	AASHTO T315	25.0	25.0
G*/sin δ, kPa, at Temp 2	AASHTO T315	5377	6344
Limiting Temp (where = 5000 kPa)	Calculation	25.6	27.0
Temp °C 1	AASHTO T313	-12	-12
Stiffness, MPa at Temp 1	AASHTO T313	198	223
m-value at Temp 1	AASHTO T313	0.337	0.323
Temp °C 2	AASHTO T313	-18	-18
Stiffness, MPa at Temp 2	AASHTO T313	369	440
m-value at Temp 2	AASHTO T313	0.268	0.255
Limiting Temp @ S = 300 MPa	Calculation	-16	-14.6
Limiting Temp (where m = 0.300)	Calculation	-15.1	-13.9
Performance Grade, T _{max}	AASHTO R29	65.8	67.1
Performance Grade, T _{min}	AASHTO R29	-25.1	-23.9
PG Grade	Calculation	PG64-16	PG67-16

FIG. 2

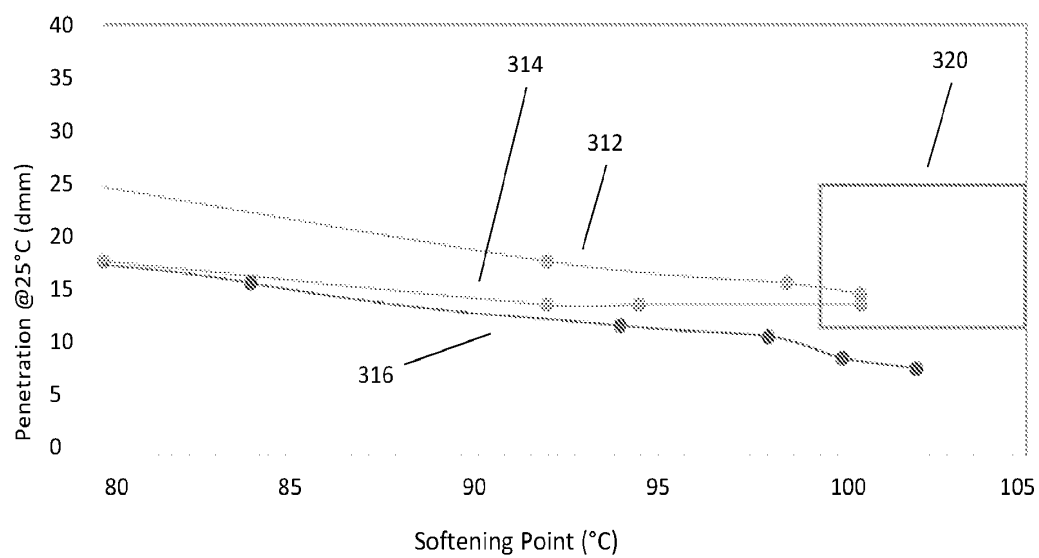


FIG. 3

Property	Unit	Rock #1	Rock #2	Rock #3
Density @ 15°C, D70	kg/m ³	1.1330	1.1390	1.131
C, D5291	wt%	85.8	85	83.9
H, D5291	wt%	7.88	7.78	7.64
N, D5291	wt%	0.68	0.71	0.74
CCR by MCRT, D4530	wt%	53.1	52.1	49.2
n-Heptane Insolubles, D3279	wt%	40.30	53.00	51
GC Simulated Distillation				
0.5%	°C	549	544	554
1%	°C	572	570	580
3%	°C	614	616	626
5%	°C	639	642	653
10%	°C	681	688	700
Viscosity Curve, Brookfield				
@ 230°C	cP	1310	2287	3348
@ 260°C	cP	248	399	761
@ 290°C	cP	84	121	184
Sulfur, wt.%, D1552	wt%	5.72	5.69	7.19
Gross Calorific Value, D5865	Btu/lb	16804	16792	16588

FIG. 4

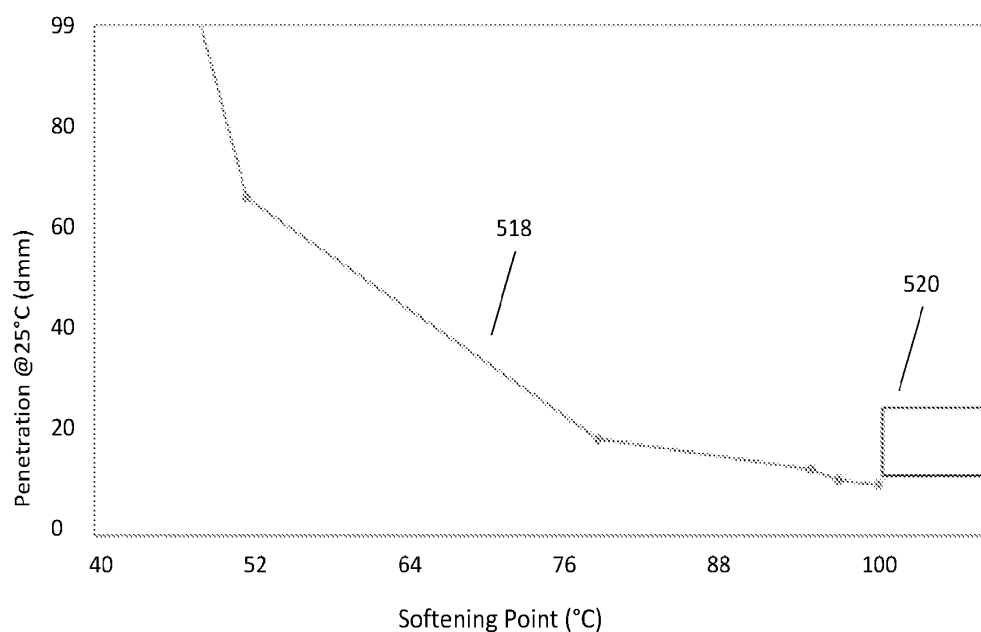


FIG. 5