

<b>State:</b> Maryland	<b>Materials:</b> Re: Section 904 - Performance Graded Asphalt Binders and Asphalt Mixes
<b>Date Last Reviewed:</b> 5/15/24	<b>Web Address:</b> <a href="https://www.roads.maryland.gov">https://www.roads.maryland.gov</a>
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Asphalt Binder		
Section 904	Highlights	MDSHA fully implemented AASHTO M332 (MSCR) for all grades in 2014. MSCR recovery is specified using the curve in AASHTO R92.
	PMA Notes	Neat asphalt with elastomeric polymer modifier when needed.
	Exclusions and Limits	Air blown binder.

Maryland		Table 1: Requirements for Performance-Graded Asphalt Binders			
Property	Test Method: AASHTO	Requirements by Performance Grade			
		58S-28	64S-22	64H-22 (Note 1)	64E-22
<b>ORIGINAL</b>					
Flash Point, °C	T 48	230 min.			
Specific Gravity	15.6°C T 228	Report			
Rotational Viscosity, Pa·s	135°C T 316	3.0 max.			
Dynamic Shear, kPa ( $G^*/\sin \delta$ , 10 rad./sec)	At Grade Temp. T 315	1.00 min.			
<b>RTFO RESIDUE</b>					
Mass Change, %	T 240	1.00 max.			
MSCR Test temp., °C		58	64		
MSCR' Jnr <sub>3.2</sub> , max., kPa <sup>-1</sup>	T 350	4.5		2.0	0.5
MSCR, Jnr <sub>diff</sub> , max., %		75 max. (Note 2)			
MSCR, % recovery @ 3.2kPa, min.					(Note 3)
<b>PAV RESIDUE</b>					
DSR Test Temperature, °C	T 315	19	25		
Dynamic Shear, kPa ( $G^* \cdot \sin \delta$ , 10 rad./sec.)		6000 max. $\delta$ min. 42° (Note 4)		6000 max.	
BBR Test Temperature, °C	T 313	-18	-12		
Creep Stiffness, MPa		300 max.			
M-Value		0.300 min.			
<b>NOTES</b>		<ol style="list-style-type: none"> <li>MDSHA will occasionally specify PG 70-22 on special projects in lieu of PG 64H-22 but will accept either binder.</li> <li>Not applicable for binders with <math>Jnr_{3.2} &lt; 0.5</math> kPa<sup>-1</sup>.</li> <li><math>&gt;29.371 \cdot (Jnr_{3.2})^{0.263}</math> - binder grade E must meet the requirements of AASHTO R 92.</li> <li>If <math>G^* \sin \delta</math> is below 5000 the phase angle minimum limit is not required.</li> </ol>			

To ensure the most accurate and current information, the specific agency should be contacted.