

<b>State:</b> South Carolina	<b>Materials:</b> Re: Section 401.02 - Asphalt Binder & Additives
<b>Date Last Reviewed:</b> 8/13/25	<b>Web Address:</b> www.scdot.org
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Asphalt Binder		
Section 401.02	Highlights	SCDOT has been evaluating the use of MSCR since January 2011 through participation in a regional effort in the SEAUPG. SEAUPG established regional test temperatures and SC will be 64°C. For PG 76-22 binders, SCDOT has decided to adopt MSCR Recovery in May 2014 and eliminate phase angle requirements. Very Heavy Traffic "V" Grade requirement in AASHTO M332 will be specified. The MSCR Recovery criteria will be based on the curve in AASHTO R92.
	PMA Notes	Polymer Modified Asphalt Binder shall consist of neat asphalt binder modified with elastomer polymer or modifier including SB, SBS, SBR or GTR to produce a binder that meets requirements of a PG 76-22 as specified in AASHTO M 320 with addition of MSCR % Recovery shown in AASHTO T 350. Testing is performed 64°C to meet requirements for the "V" grade designation in M 332. Ensure acceptable elastomeric polymer that meets the Jnr versus MSCR % Rec criteria in Figure 1 of AASHTO R 92. Varying blends of SB, SBS, SBR, GTR (7% min.), and PPA (0.5% max.) may be used, at the discretion of the AME, provided the end product meets all specified requirements for PG 76-22.
	Exclusions and Limits	No Air Blown. Max 0.5% PPA permitted in 76-22. Minimum 7% GTR is permitted as a modifier in PG 76-22. REOB is allowed with no limit on % but source must be listed in the Quality Control Plan. Amine-based liquid antistrip agent (LASA) and warm-mix additive dosage is 0.5% bwa. Organosilane-based LASA is 0.05%. All additives are terminally blended.

South Carolina		Table 1: Requirements for Performance-Graded Asphalt Binders (Note 2)		
Property		Test Method: AASHTO (T), ASTM (D) or other	Requirements by Performance Grade	
			64-22	76-22
<b>ORIGINAL</b>				
Flash Point, ° C		T48	230 min.	
Rotational Viscosity, Pa·s	135° C	T316	3.0 max.	
Dynamic Shear, kPa (G*/sin δ, 10 rad./sec)	At Grade Temperature	T315	1.00 min.	
Specific Gravity	15.6° C	D70	Report	
<b>RTFO RESIDUE</b>				
Mass Change, %		T240	1.00 max.	
Dynamic Shear, kPa (G*/sin δ, 10 rad./sec.)	At Grade Temperature	T315	2.20 min.	
MSCR, J <sub>nr3.2</sub> , kPa <sup>-1</sup>	64° C	M332	-	1.0 max
MSCR, % Recovery <sub>3.2</sub>			-	(Note 1)
<b>PAV RESIDUE</b>				
		R28	100° C, 20 hrs, 300 psi	
Dynamic Shear, kPa (G* · sin δ, 10 rad./sec.)	At Test Temperature	T315	25° C	31° C
			5000 max.	
Creep Stiffness, MPa	At Test Temperature	T313	-12° C	-12° C
			300 max.	
M-Value			0.300 min.	
<b>NOTES</b>		1. Based on the curve in AASHTO R92: % Recovery <sub>3.2</sub> ≥ 29.371(J <sub>nr3.2</sub> ) <sup>-0.2633</sup> 2. Requirements in addition to M320 are shown in red.		

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