

<b>State:</b> Tennessee	<b>Materials:</b> Re: Subsection 904.01; see also 900SS.
<b>Date Last Reviewed:</b> 4/25/2024	<b>Web Address:</b> <a href="https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-division-resources/transportation-construction-2015-standard-specifications.html">https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-division-resources/transportation-construction-2015-standard-specifications.html</a>
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Asphalt Binder		
Section 904.01	Highlights	Asphalt binder shall conform to AASHTO M 320 for all grades. In addition, all grades shall also meet some requirements of M 332. As shown below under "RTFO Residue", all grades shall meet Jnr 3.2 and Jnr diff criteria except Jnr diff is waived anytime Jnr 3.2 is less than 0.5. Jnr diff criteria is also waived for PG 76-22 and PG 82-22. Polymer modified grades must meet the MSCR Recovery criteria based on the curve in AASHTO R92 (except PG70-22, which only is required to have %R>29%).
	PMA Notes	Modification of the asphalt shall be accomplished by properly blending styrene-butadiene (SB), styrene-butadiene-styrene (SBS), styrene-butadiene-rubber (SBR), ground tire rubber (GTR), or a combination thereof to either a PG 64-22 or PG 67-22 base asphalt. GTR shall be Class 30-1.
	Exclusions and Limits	PPA may be used up to max 0.5% by weight of asphalt binder and may only be used when SBS is the primary modifier. Use of Re-refined Engine Oil Bottoms (REOB) or Vacuum Tower Asphalt Extender (VTAE) is prohibited
PG Asphalt Cement Certified Supplier Requirements	SOP 3-1	Effective January 2, 2021, Report (info only) Delta Tc (20 hour PAV aged) as defined in Asphalt Institute Publication IS-240

Tennessee		Table 1: Requirements for Performance-Graded Asphalt Binders (Note 3)				
Property		Test Method: AASHTO (T), ASTM (D) or other	Requirements by Performance Grade			
			64-22	70-22	76-22	82-22
<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>		T240				
Mass Change, %		T240	1.00 max.			
Dynamic Shear, kPa (G*/sin δ, 10 rad./sec.)	At Grade Temperature	T315	2.20 min.			
MSCR, Jnr <sub>3.2</sub> kPa, kPa <sup>-1</sup> (2)	64° C	T350	4.5 max.	1.0 max.	0.5 max.	0.5 max.
MSCR, % Recovery <sub>3.2</sub> Kpa			-	29 min.	(1)	
MSCR, Jnr diff., % (2)			75 max.		-	
<b>PAV RESIDUE</b>		R28	100° C, 20 hrs, 300 psi			

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



Dynamic Shear, kPa ( $G^* \cdot \sin \delta$ , 10 rad./sec.)	At Test Temperature	T315	25° C	28° C	31° C	34° C
			5000 max.			
<b>Table 1 Continued on Page 2</b>						
<b>PAV RESIDUE</b>		R28	100° C, 20 hrs, 300 psi			
Creep Stiffness, MPa	At Test Temperature	T313	-12° C	-12° C	-12° C	-12° C
M-Value			300 max.			
			0.300 min.			
<b>NOTES</b>		1. % Recovery must meet requirement of R92 curve. 2. Jnr difference is waived when $Jnr_{3.2} < 0.5 \text{ kPa}^{-1}$ . 3. Requirements in addition to M320 and M332 are shown in red.				

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