

State: Iowa	Materials: Re: Section 4137 Asphalt Binder
Date Last Reviewed: 2/25/25	Web Address: www.iowadot.gov
Pavement Management Engineer: John Hart	Contact Info: john.hart@iowadot.us

Asphalt Binder		
Section 4137.01	Highlights	IADOT – is a member of the Combined States Binder Group (CSBG) and early adopter of MSCR. IADOT elected to retain the original grade labeling system and determines performance grade according to AASHTO R 29. Except for Standard Traffic grades, meet CSBG requirements for Minimum Percent Recovery when tested per AASHTO T 350 at the high temperature identified by the PG grade. Waive stress sensitivity limits (Jnr Diff) for AASHTO M 332 when Jnr at 3.2 kPa is below 0.5 kPa-1.
	PMA Notes	For asphalt binder grades with a temperature spread of 92° or greater, use binders that meet the PG+ requirements established by the Combined State Binder Group (see requirements below). When PG 58-34E+ is specified, the binder shall comply with requirements of PG 58-34E except that a minimum percent recovery of 90% when tested at 58°C per AASHTO T 350 at 3.2 kPa is required. When PG 64-34E+ is specified, the binder shall comply with requirements of PG 64-34E except that a minimum percent recovery of 90% when tested at 64°C per AASHTO T 350 at 3.2 kPa is required.
Section 4137.02	Exclusions and Limits	Do not add acids to modify asphalt binders. Polyphosphoric Acid may be used as a co-modifier up to 0.5% by weight of binder.

Iowa		Table 1: Requirements for Performance-Graded Asphalt Binders							
Property	Test Method:	Requirements by Performance Grade							
		52-34S	52-34H	52-34V	52-34E	58-28S	58-28H	58-28V	58-28E
ORIGINAL									
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 Temp. T315	1.00 min.							
RTFO RESIDUE									
Mass Change, %	T240	1.00 max.							
MSCR, J _{nr} @3.2kPa, max.	At Grade Temp. T350	4.5	2.0	1.0	0.5	4.5	2.0	1.0	0.5
MSCR, % Recovery @ 3.2kPa, min.		N/A	30	55	75	N/A	30	55	75
PAV RESIDUE									
Dynamic Shear, kPa (G* · sin δ, 10 rad./sec.)	At Test Temp. T315	13° C				19° C			
		5000 max.	6000 max.		5000 max.	6000 max.			
Creep Stiffness, MPa	At Test Temp. T313	-24° C				-18° C			
		300 max.							
M-Value		0.300 min.							
NOTES		None.							

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



<i>Iowa</i>		Table 1 continued: Requirements for Performance-Graded Asphalt Binders											
Property		Test Method:	Requirements by Performance Grade										
			58-34S	58-34H	58-34V	58-34E	58-34E+	64-22S	64-22H	64-22V	64-22E	64-34E	64-34E+
ORIGINAL													
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 Temp.	T315	1.00 min.										
RTFO RESIDUE		T240											
Mass Change, %		T240	1.00 max.										
MSCR, J _{nr} @3.2kPa, max.	At Grade Temp.	T350	4.5	2.0	1.0	0.5	0.5	4.5	2.0	1.0	0.5	0.5	0.5
MSCR, % Recovery @ 3.2kPa, min.			N/A	30	55	75	90	N/A	30	55	75	75	90
PAV RESIDUE		R28	100° C										
Dynamic Shear, kPa (G* · sin δ, 10 rad./sec.)	At Test Temp.	T315	16° C					25° C					19° C
			5000 max.	6000 max.				5000 max.	6000 max.				
Creep Stiffness, MPa	At Test Temp.	T313	-24° C					-12° C					-24° C
			300 max.										
M-Value			0.300 min.										
NOTES		None.											

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