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## NDDOT Contract Price Adjustments for Performance-Graded (PG) Asphalt Cement

If the supplied asphalt binder does not meet the required PG grade, the binder price shall be reduced according to the following formulas. All price adjustments will be cumulative.

- High Service Temperature Requirements on Original Binder:

If the Dynamic Shear of the original binder is less than 0.93 KPa, the temperature at which  $G^*/\sin \delta \geq 0.93$  KPa will be determined. A 3% deduct will be applied for each 1 degree Celsius the material temperature must be lowered to achieve the required property. The price adjustment will be calculated as follows:

$$PA (\%) = (3) (T_{req} - T_{act})$$

Where:	PA (%)	=	Percent price adjustment
	$T_{req}$	=	Required test temperature in C°
	$T_{act}$	=	Actual test temperature in C° where $G^*/\sin \delta \geq 0.93$ KPa

- High Service Temperature Requirements on Rolling Thin Film Oven (RTFO) Residue:

If the Dynamic Shear of the RTFO residue is less than 1.98 KPa, the temperature at which  $G^*/\sin \delta \geq 1.98$  KPa will be determined. A 3% deduct will be applied for each degree Celsius the material temperature must be lowered to achieve the required property. The price adjustment will be calculated as follows:

$$PA (\%) = (3) (T_{req} - T_{act})$$

Where:	PA (%)	=	Percent price adjustment
	$T_{req}$	=	Required test temperature in C°
	$T_{act}$	=	Actual test temperature in C° where $G^*/\sin \delta \geq 1.98$ KPa

- Intermediate Service Temperature Requirements on Pressure Aging Vessel (PAV) Residue:

If the Dynamic Shear of the PAV residue is greater than 5600 KPa, the temperature at which  $G^* \sin \delta \leq 5600$  KPa will be determined. A 3% deduct will

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be applied for each degree Celsius the material temperature must be raised to achieve the required property. The price adjustment will be calculated as follows:

$$PA (\%) = (3) (T_{act} - T_{req})$$

Where: PA (%) = Percent price adjustment  
T<sub>req</sub> = Required test temperature in C°  
T<sub>act</sub> = Actual test temperature in C° where  
G\* sin δ ≤ 5600 KPa

- Low Service Temperature Requirements on Pressure Aging Vessel (PAV) Residue:

If the m-value for the Bending Beam Rheometer (BBR) test of the PAV residue is less than 0.285, the temperature at which the m-value is ≥ 0.285 will be determined. A 3% deduct will be applied for each degree Celsius the material temperature must be raised to achieve the required property. The price adjustment will be calculated as follows:

$$PA (\%) = (3) (T_{act} - T_{req})$$

Where: PA (%) = Percent price adjustment  
T<sub>req</sub> = Required test temperature in C°  
T<sub>act</sub> = Actual test temperature in C° where  
the m-value is ≥ 0.285