

# Design Standards Letter

**Letter Number: G-2004-09**

**Letter Date: 12/01/2004**

**Effective Date: 12/01/2004**

**Section/Plan No.: Asphalt Binder Selection**

**Subject: Asphalt Binder Selection**

**Body**

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MoDOT has reevaluated the asphalt binder criteria for use throughout Missouri. The following changes are being made in order to realize a cost savings while continuing to use asphalt mixes suitable for Missouri's climate. These changes are effectively immediately for all projects that have not been let. Operations will determine whether change orders should be used on projects under construction.

Asphalt binders are designated by their high and low temperature limits. For example, a PG 76-28 will resist rutting up to 76° C (169° F) and cold weather cracking as low as -28° C (-18° F). Recent research has shown that binders rated -22° C (-8° F) are sufficient for the vast majority of locations throughout the state. Only a relatively small area of northern Missouri has a legitimate probability of realizing this temperature once in the lifetime of a hot mix asphalt pavement. Since binders rated for extremely low temperatures are difficult to refine and obtain, their price is higher than those with warmer limits. In revised Table 6-07.1 from the Project Development Manual shown below, the -28 oils have been eliminated from the selection criteria.

TYPE OF CORRIDOR	LOCATION	TYPE OF CONSTRUCTION	TYPE OF MIX	ASPHALT BINDER
Heavy Duty	All Districts	Full Depth Asphalt	Surface mixture (SP125 or SMA) and first underlying lift	PG 76-22
	All Districts	Asphalt Overlays	Remaining Underlying Lifts Surface mixture (SP125 or SMA) and first underlying lift  Remaining Underlying Lifts	PG 64-22 PG 76-22  PG 64-22
Medium Duty	All Districts	Full Depth Asphalt	Surface mixture (SP125) and first underlying lift	PG 70-22
			Remaining Underlying Lifts	PG 64-22

	All Districts	Asphalt Overlays	Surface mixture (SP125) and first underlying lift	PG 70-22
			Remaining Underlying Lifts	PG 64-22
Light Duty	All Districts	Full Depth Asphalt	All Mixtures	PG 64-22
	All Districts	Asphalt Overlays	All Mixtures	PG 64-22

Mixtures for shoulders that will be placed monolithically with the adjacent traveled way should use the same grade of asphalt binder as recommended for the adjacent traffic lanes at that depth. Mixtures for shoulders that will be placed in a separate pass than the adjacent traveled way should be specified with a PG 64-22 asphalt binder.

These changes will be included with the January 2005 Project Development Manual revisions.

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