

BP Performance Grades



Recommended Mixing and Compaction Temperatures for Paving Applications

Laboratory Mixing and Compaction Temperatures

Temperature ranges were developed using Asphalt Institute recommendations. Laboratory mixing temperatures are selected to achieve the target viscosity of 0.17 Pa.s, within a range of 0.15 to 0.19 Pa.s (170 cSt target, range of 150-190 cSt). Laboratory compaction temperatures are selected to achieve the target viscosity of 0.28 Pa.s, within a range of 0.25 to 0.31 Pa.s (280 cSt target, range of 250-310 cSt).

BP Unmodified PG Binders

Grade	Mixing Temp Range °F		Compaction Temp Range °F	
	Min	Max	Min	Max
67-22	306	315	287	298
64-22	303	313	284	296
58-22	294	304	275	287
58-28	289	299	271	282
52-28	283	293	264	275
46-28	270	279	251	262
46-34	270	279	251	262

BP "Type A" Modified PG Binders

Grade	Mixing Temp Range °F		Compaction Temp Range °F	
	Min	Max	Min	Max
70-22	321	331	302	313
64-28	308	318	289	301

BP "Type B" Modified PG Binders (MTE Steady State Flow DSR Method)

Grade	Mixing Temp Range °F		Compaction Temp Range °F	
	Min	Max	Min	Max
76-22	310	325	290	305
70-22	305	320	285	300
70-28	290	310	275	300
64-28	285	305	265	285
58-34	270	280	245	255

BP "Type DD" Modified PG Binders (MTE Steady State Flow DSR Method)

Grade	Mixing Temp Range °F		Compaction Temp Range °F	
	Min	Max	Min	Max
76-22	326	337	307	316
70-28	313	324	295	303

Paving and Compaction Temperatures

The plant mixing temperature should be sufficiently high to produce a uniform coating of coarse aggregate, but should be kept below 350°F to avoid thermal degradation of the asphalt binder. The paving compaction temperature usually controls the required mixing temperature at the plant. The compaction temperature can be estimated from experience based on knowledge of the grade of binder used and construction variables associated with a particular project. Lift thickness, pavement support, base temperature, wind velocity, and air temperature can all affect the mixture temperature required to achieve density in the pavement. An initial test of the rolling procedure may help identify the preferred compaction temperature and rolling method.

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