

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	Specific Gravity	Mixing Temp Range °F		Compaction Temp Range °F	
	Average	Min	Max	Min	Max
64-22	1.034	303	312	284	292
58-22	1.033	294	303	275	283
58-28	1.028	287	297	269	277
52-28	1.023	276	285	258	265
46-34	1.019	262	271	244	251

BP "Type A" Modified PG Binders

Grade	Specific Gravity	Mixing Temp Range °F		Compaction Temp Range °F	
	Average	Min	Max	Min	Max
70-22	1.039	318	328	299	307
64-28	1.033	307	317	288	296

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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