

Aging Study

Delta S is chemically designed to not simply soften recycled binder, but to restore virgin properties to old and brittle binder. In aging studies Delta S is proven to chemically rejuvenate recycled binder, reversing the effects of the natural oxidative processes. While binder softeners tend to improve the workability of recycled material, they can affect the ability of the final product to stiffen correctly resulting in premature rutting. Increased concentrations of recycled material without the use of a softener results in an increasingly brittle pavement which also shortens the life span of a roadway. In short term aging studies, it is shown that the addition of Delta S significantly softens the recycled binder mix improving workability and compaction. In long term aging studies, it is shown that Delta S dosed material solidifies to virgin asphalt specifications without the accompanying brittleness seen in non-rejuvenated recycled material.



Mixture	Aging	HWTD Results			Overlay Test Results
		Stripping Reflection Point	Rut Depth at 10,000 Passes (mm)	Rut Depth at 20,000 Passes (mm)	OT Cycles to Failure
Control (58-28)	STOA Short Term Aging	5,900	>20	>20	487
Control (64-28)		None	0.76	1.39	14
58-28 + 50% RAP		None	1.09	1.8	22
58-28 + 50% RAP + Delta S		8,500	7.16	>20	258
Control (58-28)	LTOA Long Term Oven Aging	12,000	3	>20	57
Control (64-28)		None	1.99	2.72	23
58-28 + 50% RAP		None	0.91	1.45	13
58-28 + 50% RAP + Delta S		13,600	1.92	5.2	73

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