



## Compaction

The addition of Delta S significantly improves the compactibility of asphalt mixtures with and without high concentrations of recycled material. Test results prove that the recycled binder has been effectively penetrated and rejuvenated. This increases recycled binder availability thus reducing the stiffness typically seen with the use of higher percentages of RAP and RAS.

### Volumetric Properties

	50% RAP		50% RAP + 5% RAS		
	Control	50% RAP	50% RAP + Delta S	50% RAP + 5% RAS	50% RAP + 5% RAS + Delta S
<b>Binder Type</b>	64-28	58-28	58-28	58-28	58-28
<b>% of Binder in Total Mix</b>	6.50%	6.50%	6.50%	6.50%	6.50%
<b>% of Delta S in Total Binder Mix</b>	-	-	9%	-	9%
<b>Average Specimen Height (mm)</b>	118.1	118.7	117.8	121.1	119.1
<b>Bulk Specific Gravity (Avg. Gmb)</b>	2.318	2.307	2.329	2.251	2.267
<b>Max. Theo. Specific Gravity (Avg. Gmm)</b>	2.406	2.422	2.418	2.437	2.428
<b>Average Air Voids (%)</b>	3.68	4.77	3.68	7.65	6.63
<b>Average VMA (%)</b>	15.7	15.3	14.4	18	17.3
<b>Average VFA (%)</b>	76.6	68.7	74.5	57.4	61.7
<b>% Binder Absorbed (%)</b>	1.22	1.96	1.87	1.91	1.74
<b>% Binder Effective (Pbe %)</b>	5.36	4.67	4.75	4.71	4.87
<b>Dust to Binder Ratio</b>	1.12	1.3	1.26	1.27	1.23

Industry Specs.: Average Air Voids – 4%; Average VMA – Minimum 15%; Average VFA – 65-78%

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