CRUMB RUBBER MODIFIED ASPHALT GRANT

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Daviess County

Daviess County's paving contractor, Rogers Group, laid a 3/4 mile test section of hot mix binder asphalt utilizing crumb rubber over an existing paved road with a 10" cement stabilized base in September 1995. A 1/4 mile control section was also laid on the same road using a conventional hot mix binder asphalt design. A week later both sections were chip sealed with AE90S and number 11 limestone chips.

The material for the test section consisted of a hot mix dry process, utilizing forty (40) pounds of number 10 mesh crumb rubber per ton of mix. This section was resurfaced using the hot mix/dry crumb rubber process. The crumb rubber was incorporated at the plant and was uniformly dispersed throughout the binder mix. It was placed and compacted using standard hot mix procedures. The mix was laid at a compacted thickness of 2 ½ inches on both sections.

The cost of the crumb rubber was 14 cents a pound and was received in forty (40) pound bags. The cost of the binder mix for the test section laid and compacted was $38.93 per ton, and the conventional binder mix was $28.25. The total additional cost for the crumb rubber binder mix was $12,900, or 38% more than the conventional mix.

One impressive aspect of the project was the fact that 3,227 tires were used in the test section.

The 1997 inspection revealed some minor problems in the center joint area of the test section, but none were experienced in the 1/4 mile control section.

The 1998 inspection indicated the same problems, but the conditions had not changed since the previous inspection.

The 1999 inspection was conducted on February 17th and no new problems were noted. It may be possible that there may be less of the number 11 stone from the chip & seal surface left on the test section than there is on the control section. This may have been caused by the crumb rubber mix soaking up some of the AE90S oil when it was applied, thus allowing less adhesion for the chips.

Both sections have experienced the normal wear in the center of each lane, due to the heavy Amish buggy traffic in the area. Neither section has experienced any problems with excessive cracking.