

**USE OF ROCK ASPHALT AND EMULSIFIED ASPHALT
ON COUNTY ROADS**

By S. B. Mylin,
Wabash County Highway Superintendent.

Wabash County believes that it can keep its traffic out of the mud without the vast expenditure of money required to build complete new hard surface highways. Just because an old gravel or stone road is rough and unpleasant to travel, many citizens and even many engineers are disposed to condemn it entirely and demand a new pavement. Stop and figure the average cost of new pavement, and you will be staggered by the sum required to reconstruct your roads. You will realize, just as we did, that some other solution of your road problems must be found.

Six years ago we adopted the practice of resurfacing old gravel and macadam highways. Naturally, resurfacing was first attempted on heavy traffic roads which were requiring excessive maintenance. Test holes showed plenty of old metal to carry the traffic. In fact it was rare to find even small areas where the roadways had broken through to the clay subgrade. The only complaint was that the roads were rough and dusty.

Although each resurfacing project presented a different problem, in general, our procedure was to shape the old roadway by scarifying and rolling. We then laid, when needed, a thin course of crushed limestone, rolled it until it was thoroughly keyed and surfaced the entire roadway with rock or emulsified asphalt. The first of these resurface jobs came in 1919 in the town of Urbana. This resurfacing was done with critical conditions against us. The taxpayers and the newspapers were opposed to this project. This street, built of rock asphalt, is carrying its sixth year of heavy traffic without one cent of maintenance. By 1922 the taxpayers and newspapers were on our side.

The taxpayers of North Manchester demanded that the Hills and Lakes road from the college north seven-tenths of a mile be resurfaced with rock asphalt. This road which is very heavily traveled is on its fourth year without one cent of maintenance.

In 1923 we had a road leading out of North Manchester on the Hills and Lakes route that had been built of asphaltic concrete. This road had been in service only six years and had to be resurfaced. We resurfaced it with emulsified asphalt and it is in fine condition with no expense for maintenance.

The next road on the program in 1923 was the Linlawn road leading from the corporation line of South Wabash. This was an old road built of stone and gravel. We did not add any new metal but just reshaped and rolled the old metal. Then we covered this with emulsified asphalt. Under very heavy travel this road has remained in perfect condition without any maintenance.

In 1924 we built one and one-half miles on the Hills and Lakes road adjoining that built in 1922, making a total length of two and two-tenths miles. This road was built of rock asphalt.

In 1924 we built two approaches to Wabash, the Walnut Tree road and Falls Avenue road. These two roads were built of emulsified asphalt.

In 1925 we built the following roads:

TABLE 1.

NAME	Berms	Width Ft.	Length Ft.	Surface Sq. Yds.	Cost Per Sq. Yd.
Rich Valley.....	Stone....	16	2,320	4,120	\$1.29
Linlawn.....	Stone....	16	3,350	4,840	1.34
Laketon.....	Stone....	18	1,600	3,200	1.42
East North Manchester.....	Stone....	18	3,320	6,640	1.33
Somerset.....		18 and 24	2,400	5,067	1.55
Chippewa.....	Gravel..	18	3,200	6,400	1.52

The latest resurfacing project in Wabash County is the Chippewa road leading northwest from the city of Wabash and subject to very heavy traffic. The old gravel road was a source of constant complaint and heavy maintenance. We first scarified and reshaped by rolling. Where there was any evidence of weakness in the old base, it was strengthened by adding new limestone and thoroughly compacted. We then laid a course of emulsified asphalt concrete, one and one-half inches thick after compression and, over this, a wearing surface of rock asphalt approximately three-fourths of an inch thick compacted.

The county has used a great deal of rock asphalt and emulsified asphaltic concrete with good results. The idea of combining the two materials on this job was an idea of my own to develop a type which would be both serviceable and economical. The emulsified asphaltic concrete was used as a binder course and could be laid much thinner than water-bound macadam. The rock asphalt was used as a waterproof wearing surface. We felt that with the emulsified asphalt binder course we could materially increase the strength of the

road with very little added cost. This road at the present time looks fine and we are receiving many compliments on it.

The taxpayers of Wabash County are very much in favor of this resurface work. We increased our road maintenance levy, for 1926, six cents and had no opposition to the increase. Our heaviest farmer taxpayer said that we should have made it higher as the people want more resurfaced roads built by the highway maintenance department. There is not one faction in Wabash County today that is fighting us on this program. They are all for us—they want the roads.

USE OF ROCK ASPHALT ON COUNTY ROADS

By George Dix,
Clark County Highway Superintendent.

The Plant Road between Jeffersonville and Charlestown was built about 12 or 14 years ago. This is a macadam road and has been difficult to maintain, requiring reworking two or three times each year. It carries a very heavy truck and auto traffic from the northern section of the county, and is through a very low, swampy section.

The old road was built 16 feet wide with an average depth of about eight inches. We first scarified the entire width of the road and graded it to proper crown, (about $2\frac{1}{4}$ inches) and also widened it to at least 17 feet of stone with a 4 foot earth shoulder on either side.

We added 4 inches of new limestone from $3\frac{1}{2}$ inches down to $2\frac{1}{2}$ inches in size, rolling thoroughly with a 10 ton roller. Screenings were applied for filling voids, rolled thoroughly, and filled again with screenings, using hand brooms for working it in. We watered the road until no more water would penetrate it, and kept rolling until the mixture of water and screenings would push up in a wave in front of the roller. The road was allowed to dry thoroughly and then swept with hand brooms in order to give at last a half inch key for the rock asphalt to prevent crawling.

Before laying the rock asphalt, we swept and thoroughly cleaned the wearing surface. Where the base had been damaged or disturbed we repaired it before spreading the asphalt. The asphalt was laid on a dry base with the temperature at 50 degrees F. or above. The rock asphalt was dumped in piles