

SLURRY SEAL - A NEW METHOD OF PRACTICAL PAVEMENT MAINTENANCE

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It is always a formidable task to make the last presentation at a convention such as this, but any examination of a CARE PACKAGE would not be complete without a discussion of what is perhaps one of the most troublesome and perplexing problems facing cemetery men and that is pavement maintenance.

I wish therefore to bring to your attention this afternoon a new kind of pavement surface called SLURRY SEAL.

This brief presentation will consist of three parts; first, I will attempt to describe the process and the product that is SLURRY SEAL; second, we will see some slides that illustrate the product and hardware of the trade; and third, a question and answer session. To help answer your questions Mr. Vern Harter of Slurry Seal of Toledo, Inc. and Mr. Don Jarvis of Slurry Seal of Southern, Ohio, Hamilton, will be on hand.

You are of course familiar with conventional forms of road base protection and surfacing. They are: (1) Road Oils for dust laying and base stabilization, (2) Penetration Macadam or chip sealing sometimes called Tarvia or seal coat, and (3) Hot Mixed Asphaltic Concrete. To these older methods of pavement and surface treatment we must now add a fourth method...SLURRY SEAL... a versatile new method of practical pavement maintenance.

May I call to your attention the specimens of slurry which we have distributed among you. Note that Slurry Seal is a mixture of relatively fine graded crushed aggregate and a hard durable asphaltic material. Specifically, the ingredients of Slurry Seal are: (1) a precisely graded crushed stone, river sand is not

permissible; (2) a special asphalt emulsion tailored to the needs of the job; (3) a mineral filler such as portland cement to give a uniform texture, and (4) water to aid in mixing and application. Sometimes special chemicals are used to accelerate or retard the process. These ingredients are carried, proportioned, mixed and applied simultaneously by a self contained travelling plant called a slurry machine.

The slurry sealing operation is quick and efficient. A well equipped contractor with an experienced crew can complete as much as two miles of roads per day with a minimum of inconvenience to the cemetarian.

To meet many of the problems of pavement maintenance, slurry will act as a positive sealer for any pavement which is absorbing water; it will stop asphalt pavements from ravelling and spalling; slurry will fill popcorn pavements; slurry will protect existing structures from weather, salt and sun; and will provide a long-life durable wearing surface with a remarkably quiet, skidproof surface.

I would like to digress here for a moment to review two elementary fundamentals of pavements. In any pavement, be it portland cement concrete, hot mix asphaltic concrete, slurry seal or chip seal, the first and foremost consideration must be given to the road base itself. This is of critical importance to the success of any pavement...If the road base is not graded properly, if it is not properly drained, if it contains plastic mud or clay or if it is of insufficient depth and strength, then the success of any pavement must be limited to how well the base has been constructed.

The second fundamental to be reviewed here is that the pavement function is to protect an adequate road base from weather and wear. If the road base is well constructed, then the problems of pavement care can be reduced to simple prevention rather than expensive cure.

Then, assuming an adequate base structure or an existing pavement whose time has come, a decision must then be made as to the type of surface to use. Should you use a thick, expensive layer of hot mix? Should you use chip seal with the attendant loose gravel and sticky clatter? Should you use a slick, short-lived coal tar sealer? Or should you use slurry? Slurry is a thing of substance, a thing of quiet beauty. Slurry will not build up pavement heights so that drainage and curb heights are preserved. Remarkable skid resistance is attained by the use of durable slurry. Slurry makes good economic sense.

As an aside, our friends at the Ford Motor Company use slurry as the primary resurfacing material of choice at their test tracks and proving grounds in Michigan because of its durability and superior skid resistance.

Now, I would like to show you a few slides which I hope will give you a better idea of the contribution SLURRY SEAL can make to your CARE PACKAGE.
(May we have the lights out please?)

- 1) Slurry may be applied directly to a well compacted road base in either single or multiple course applications, or,
- 2) over existing pavements whose time for maintenance has come. Note how the old pavement has deteriorated. It is badly oxidized , shows loss of fines and the larger aggregate is ravelling out. The use of slurry in this instance is timely.
- 3) Slurry can be used successfully on heavily travelled streets such as this one to protect the existing pavement from wear and weather, or,
- 4) on residential streets shown here, and
- 5) for skid resistance and safety as in this school zone.

6) The Slurry machine is a travelling mixing plant which proportions, mixes and spreads the slurry seal. The tanks located at the front of the machine contains water and asphalt emulsion. The "V"-shaped hopper in the center contains the aggregate or crushed stone. To the rear is the fines feeder, mixer and spreader box.

7) Slurry machines come in all sizes from one ton to this 12-ton monster.

8) The essential operations are first, the preparation of the surface to be slurried by cleaning and,

9) patching extremely deep holes.

10) Next the slurry machine is loaded with cement and aggregate from on site loaders or stockpile loaders as shown here.

11) And then the slurry machine is loaded with emulsion and water from mobile tankers.

12) The machine then travels to the job where the load is mixed and spread as shown here on a primed base.

13) The finished texture after traffic compaction is essentially smooth with a grained effect.

14) Here is shown a crew finishing an intersection just after the first pass has started....

15) then the finishing touch to the intersection and

16) the beginning of the second pass.

17) Note the burlap drag which imparts a grained texture when desired.

18) This third shot shows the crew and machine on the way to completion of another slurry job.

19) Sometimes it is necessary to hand work the center joint as shown here.

20) A street completed the previous day.

21) This slide illustrates the use of multicourse slurry in new construction as the primary surface.

22) Another shot of this multicourse job.

23) Slurry finds many uses as in this parking lot.

24) Another view of the parking lot.

25) A typical roadway in a quiet park.

These last few slides will give you a quick panorama of slurry.

26) A view of a typical asphalt emulsion plant.

27) Loading facilities at the emulsion plant.

28) Stockpile loading (Notice the Ford Tractor)

29) More stockpile loading.

30) A "Slurry Tender which transfers materials without stockpiling.

31) The slurry tender loading on site.

32) This slide and the next show a demonstration of "quick-set" cationic emulsions. Here, the crew is starting out.

33) Less than two hours later the boys are giving the slurry the old eagle eye.

34) Here is an application of slurry to the berm for erosion control.

The next three slides show the application of slurry in stage construction of a chip sealed road to hold loose gravel and to improve riding qualities.

35) The fresh chip seal.

36) Completion of the first pass.

37) The completed slurry.

This last slide illustrates the beauty and utility of slurry in an application typical of many pavements in your cemeteries.

38).

In the short eight years of modern slurry, the industry has grown to more than 400 contractors in this country and many foreign lands. I must give credit for the growing success of slurry^{xs} the manufacturers of slurry equipment which are Young Slurry Seal of Waco, Texas, Highway Equipment of Cedar Rapids and Rex Chainbelt of Milwaukee. Credit is also due the innovative American contractor and the International Slurry Seal Association, the asphalt industry and the chemical industry, especially Armour Chemical and Bitucote products for their support in continued research and development that has made slurry seal the method of practical pavement maintenance it is today.

I wish to thank you for the opportunity of being here today.