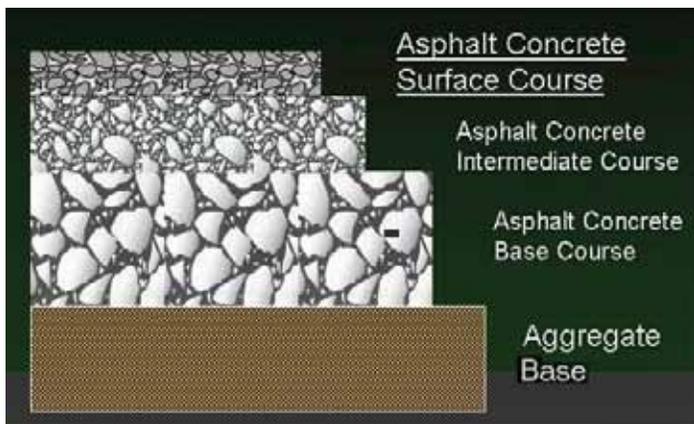


# ASPHALT BASE PAVEMENTS – THE BEST VALUE IN PAVEMENT

Asphalt-base pavements continue to provide the best value for many reasons:

- Asphalt-base pavements are the long-lived pavement
- Maintenance of asphalt-base pavements is simple, relatively inexpensive and fast
- Asphalt-base pavements are being shown to be the sustainable pavement
- Asphalt-base pavements are smoother, quieter and look better

Experience in constructing and maintaining the interstate highways in Ohio has shown that asphalt surfaces generally perform best atop asphalt bases. Pavements originally constructed as deep-strength asphalt have been shown to last longer and cost less to maintain than any other combination of materials. In addition, none of them have ever had to be removed and replaced. The surfaces on these deep-strength asphalt base pavements have generally lasted longer and provided a better level of service before needing an overlay than on pavements with concrete bases. (1) After an overlay was eventually placed on these asphalt-base pavements, the overlay has generally been long lasting as well. Asphalt-base pavements are the real long-lived pavement.



*Deep-Strength Asphalt Pavement is comprised of a base and three asphalt course layers.*

The unfortunate reality of pavements with a concrete base (composite pavements) is that when the concrete cracks and crumbles – which inevitably it will – the asphalt surface will degrade. Replacing the asphalt surface atop the deteriorating concrete base is a short-term fix. Patching and repairing the disintegrating concrete base can be an expensive and time-consuming proposition. At some point the only real solution will

be to dig up the whole road and start over. In fact, Ohio Department of Transportation (ODOT) research has recommended replacing composite pavements on the state priority system with asphalt-base pavement.<sup>(1)</sup>

This kind of replacement has never been necessary for a deep-strength asphalt pavement on Ohio's Interstate system. What this means to the owner of an asphalt-base pavement is that it is easy to



*Reflection cracking is occurring on an asphalt surface atop a concrete base.*

project the future maintenance costs. Just plan on resurfacing periodically – depending on how much traffic the pavement carries. Conversely, a failed concrete base will eventually require huge replacement costs. Sooner or later, that concrete-base pavement will have to be replaced. No such time bomb is waiting on owners of deep-strength asphalt pavements. So why risk it?

For thick asphalt-base layers, greater than 4 inches, ODOT Item 302, asphalt concrete base, (also known as the big rock base) has proved to be economical, stable and durable. In this time of intense pressure to reduce pavement cost, the use of a deep-strength, asphalt base using ODOT Item 302 is part of the answer.

With recent advances in design and materials technology, asphalt-base pavements can be made very long-lasting, indeed. A perpetual pavement's asphalt base never fails from fatigue loading. The projects that have won national Perpetual Pavements Awards reflect the outstanding capability of deep-strength asphalt-base pavements to provide long life with low maintenance. For details on the Perpetual Pavements Award projects see: [www.asphaltroads.org/perpetual-pavement/award-winners.html](http://www.asphaltroads.org/perpetual-pavement/award-winners.html).

With an asphalt base and a long-lasting, polymer-modified, renewable surface, it is now feasible to build a pavement that will provide a high

level of serviceability for as long as the pavement is needed.

Asphalt-base pavements have many other attributes that increase their value to the public and its owner agencies.



*Perpetual Pavement — the long-lasting option.*

Maintenance of asphalt-base pavement is simple, relatively inexpensive and fast. Usually a simple mill and fill overlay is all that is required to restore the pavement. Maintenance of traffic requirements are readily accommodated. The work can be done overnight if necessary.

Asphalt pavements are being shown to be the sustainable pavement, as it is a leader in recycling/re-use. Almost all reclaimed asphalt pavement (RAP) is re-used in making new asphalt concrete. New technologies, such as Warm Mix Asphalt, are reducing the energy requirements for producing



*Milling machine reclaims RAP from a deteriorated surface.*

asphalt concrete and lowering emissions as well. Porous asphalt pavement, as part of a stormwater management best practice, is being used at an increasing frequency to improve stormwater quality and to reduce runoff volume. Asphalt-base pavements are being shown to have a lower carbon footprint and to enable obtaining LEED certification points.

And, asphalt pavements are smoother, quieter and look better, as paint lines are more visible and last longer on asphalt.

The conclusion is clear: For the best value pavement start with an asphalt base.

### MORE INFORMATION

For more information on asphalt-base pavements and the life of overlays on asphalt-base pavements visit the Flexible Pavements of Ohio, Federal Highway Administration and ODOT websites:

[www.flexiblepavements.org](http://www.flexiblepavements.org). On the website, view the “Technical Resources/Technical Documents” menu item and click on “Economic Evaluation of Ohio’s Flexible and Rigid Interstate Pavements;” also visit the “Sustainable Pavement” page.

[www.fhwa.dot.gov/pavement/pub\\_details.cfm?id=8](http://www.fhwa.dot.gov/pavement/pub_details.cfm?id=8) View the Tech Brief “Performance Trends of Rehabilitated AC Pavements.”

<http://www.dot.state.oh.us/Divisions/TransSysDev/Research/reportsandplans/Pages/PavementReportsDetail.aspx#14783> Research project report, O A

(1) SJN 14783, Evaluation of Variation in Pavement performance between Districts, University of Toledo, Dr. E. Chou, et. al., 2004.

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