

Pavement Preservation with HMA

Hot-Mix Asphalt (HMA) overlays are one of the most cost effective, efficient, and versatile pavement preservation options available. The benefits include additional structural capacity, Quality Management in construction, enhanced skid resistance, reduced noise levels, and improved ride, drainage and aesthetics. Overlays can be placed in varying thicknesses, allowing the engineer flexibility to design according to the needs of the roadway.

A **thin HMA overlay** (thickness less than two inches) is an excellent option for structurally sound flexible pavements and is compatible with future maintenance activities. Thin HMA overlays consist of well-blended aggregate and asphalt cement. The quality of the pavement preservation technique is controlled through the Quality Control/Quality Assurance (QC/QA) process. Additional benefits of thin overlay include:

- Improved Rideability
- Improved Surface Friction
- Enhanced Appearance
- Sealed Pavement Against Elements
- Some Structural Benefit
- Extended Service Life, thus **Improved Life Cycle Costs Savings**

In the summer of 2004, Bemidji's city streets were rehabilitated with a thin HMA overlay after serving for more than 20 years. The top 1.5 inches of the 3.5-inch HMA layer was milled and replaced with HMA. The City Engineer is "very pleased" with the project and feels it is "a good step toward extending the life of the pavement, and is very similar to the perpetual pavement goal." The City Engineer specified a Mn/DOT 2350 mix that was produced and placed by Northstar Materials, Inc. in Bemidji.



Newly revitalized city streets in Bemidji.



Award Winning Pavements Received a Thin Overlay in Their Lifetime, and They are Still Going Strong!

The Minnesota Department of Transportation (Mn/DOT) has received four National Perpetual Pavement Awards over the past four years; the first was for Interstate 35 near Willow River in 2002, the second was for USTH 71 south of Park Rapids in 2003, the third was for USTH 10 in Anoka in 2004, and the most recent was for TH 18 between Garrison and Brainerd. **Each of these award winning pavements has received a thin overlay** (ranging from ¾” to 2” thick) in their lifetime and they are still going strong.

Through projects such as this, Minnesota played an outstanding role in the history of transportation, technological change, and asphalt construction thanks to the progressive vision and partnering efforts of agency and industry representatives. These projects have demonstrated outstanding design, construction, and performance value for more than 35 years of service to the traveling public of Minnesota and continue to do so today.

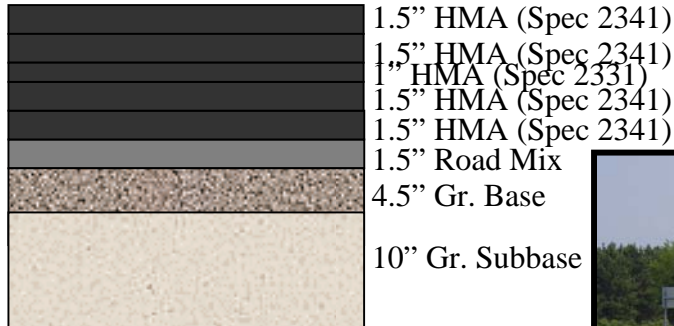
The common pavement preservation technique for the national award winning, long-life pavements was a thin overlay.



MnDOT receives its 4th Perpetual Pavement Award. Pictured above from left to right are [back] Ray Brown (NCAT); Alden Bailey (APA Co-Chair); Harold Linnenkohl (President - AASHTO); Peter Grass (President - Asphalt Institute); [front] Tony Kempenich (MnDOT); and Jill Thomas (MAPA).



2005 Perpetual Pavement Award*
TH 18 from Garrison to Brainerd,
Open to Traffic 1959

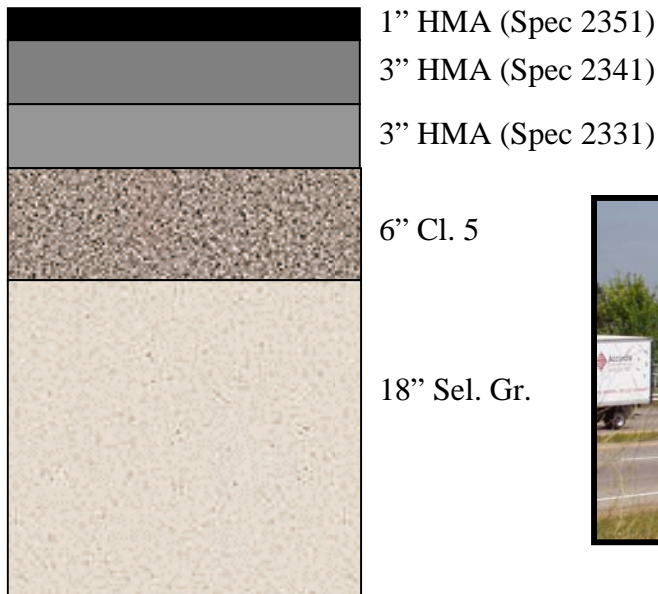


1982 (23 years of service) 1.5" Overlay (Spec 2341)
 over 1" Overlay (Spec 2331)

1993 (34 years of service) 1.5" Overlay (Spec 2341)



2004 Perpetual Pavement Award
TH 10 in Anoka,
Open to Traffic 1966

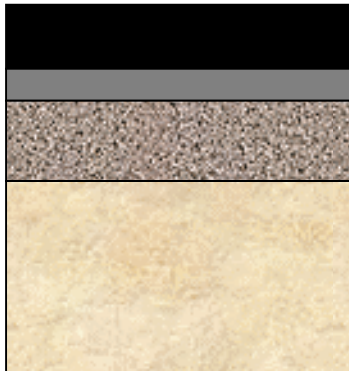


1978 (12 years of service) 3/4" Overlay (Spec 2361)

1994 (28 years of service) 2" Mill & 3.5" Overlay (Spec 2340, Type 47)



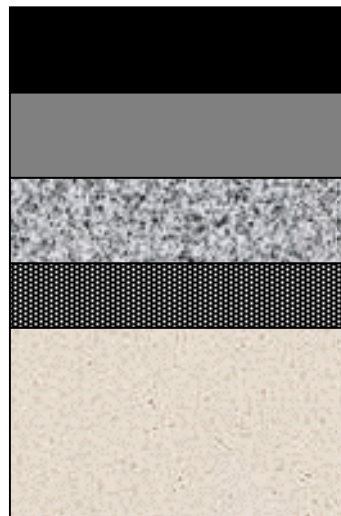
2003 Perpetual Pavement Award*
TH 71 South of Park Rapids,
Open to Traffic 1964



3" HMA (Spec 2341)
 1.5" Road Mix (in-place)
 4.5" Aggregate Base (in-place)
 Granular Soil (in-place)

1994 (30 years of service) Spot Tightblade & 1.5" Overlay

2002 Perpetual Pavement Award*
I-35 near Willow River,
Open to Traffic 1966



4" HMA (Spec 2351)
 4" HMA (Spec 2331)
 4" Bit. Treated Cl. 5
 3" Bit. Treated Sel. Gr.
 9" Sel. Gr.

1989 (23 years of service) 1" Mill & Overlay
1998 (32 years of service) 4.5" Mill & Overlay

*Note: High performance sections that do not consist of a 30-inch select granular criteria for frost susceptibility.

Thin overlay is a viable and cost-effective means to prolong the life of low, medium, and high volume HMA pavements!

