

HMA Ultra-Thin

High Value Pavement Enhancement



Extends pavement life
Protects pavement structure
Restores pavement smoothness

Presentation Outline

- What is HMA Ultra – Thin
- Performance History
- Comparison with Other Preservation Treatments

HMA Ultra-Thin



$\frac{3}{4}$ " to 1" Thickness



MICHIGAN RIDES ON US

Asphalt.

HMA Ultra-Thin

Purpose:

Protect the pavement structure

Slow rate of deterioration

Correct surface deficiencies

Improve skid - resistance

Improve ride quality



MICHIGAN RIDES ON US

Asphalt.

HMA Ultra-Thin



Ex. Pavement Conditions:

Good cross section

Good base, structurally sound

Visible surface distress may include:

- Moderate cracking, $\leq 1/2$ " wide
- Raveling and surface wear
- Slight to moderate flushing or polishing
- Occasional patch in good condition



HMA Ultra-Thin

Traffic Classifications

	Low Vol.	Med. Vol.	High Vol.
Comm. ADT*	<380	380 - 3400	>3400
Crush (min)	50%	75%	95%
Binder (PG)	64-22	64-28P	70-22P

*** Two-Way Truck Traffic**

HMA Ultra-Thin



BENEFITS

- 5-9 year life extension
- Seals pavement to delay further deterioration
- Improve ride quality
- Minimize or eliminate structure adjustments
- Reduce noise
- Improve drainage
- Ease of construction, standard paving operation
- Minimal construction time



HMA Ultra-Thin Performance



M-60 – 8 Years old



US-127 – 8 Years old



ASPHALT
PAVEMENT
ASSOCIATION
OF
MICHIGAN

MICHIGAN RIDES ON US

Asphalt.

HMA Ultra-Thin Performance

MDOT Projects - Statewide

UT Type	# of Jobs	Length (miles)	Avg. Age (end service)	Avg. Age (in service)	Avg. Age (overall)
Ultra-thin low	40	385	6.6 (13)	8.4	7.6
Ultra-thin med	27	187	5.5 (4)	7.3	6.9
Ultra-thin high	8	50	5.3 (3)	6.3	5.9



MICHIGAN RIDES ON US

Asphalt.

HMA Ultra-Thin

Preventive Maintenance Treatment Cost Comparison

Treatment	\$/syd	Cost/mile (24' wide)	MDOT Life extension range (years)*	MDOT Life extension range average (years)*	Cost/mile* per year
Double chip seal	\$2.93	\$41,253	3-5	4	\$10,313
Micro-surface	\$3.33	\$46,885	3-5	4	\$11,721
Ultra-thin low	\$2.80	\$39,422	5-9	7*	\$5,632
Ultra-thin med	\$2.82	\$39,704	5-9	7*	\$5,672
Ultra-thin high	\$3.07	\$43,224	5-9	7*	\$6,175

*Average Life Extension estimated by APAM

Unit Prices based on MDOT Information (thru Jan. 2013)

Preventive Maintenance



**WHAT EXACTLY IS YOUR
PREVENTIVE MAINTENANCE
PROGRAM PREVENTING?**

HMA Ultra Thin

HMA UT

Chip Seal

Microsurfacing

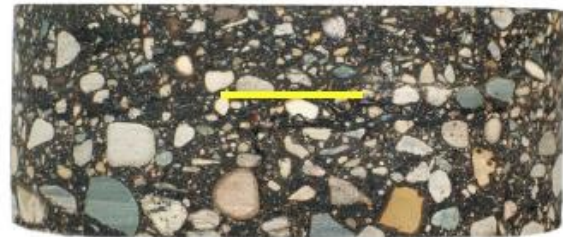
	HMA UT	Chip Seal	Microsurfacing
Increase skid resistance	✓	✓	✓
Minimizes curb loss	✓	✓	✓
Corrects surface distress	✓	✓	✓
Can be applied in one pass	✓	✓	
Increases structural strength	✓		
Improves ride quality	✓		
Improves pavement draining	✓		
Corrects minor rutting	✓		✓
Eliminates dust, loose aggregate	✓		✓

HMA Ultra Thin

Questions ?

HMA Ultra-Thin High Value Pavement Enhancement

- Extends Pavement Life
- Protects the Pavement Structure
- Restores Pavement Smoothness



HMA Ultra-Thin 3/4" - 1"
Over existing asphalt pavement

- VS -



Typical Surface Treatment 3/16" - 3/8"
Over existing asphalt pavement