

A Contractors Experience Using A Chemical Additive



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Used on Four Projects to Date

- MnROAD (2008)
- TH 95 (2009)
- TH 107 (2011)
- CSAH 34 – Wright County (2011)



2008 MnROAD Project Overview

- Approximately 10,500 tons of Bituminous Paving
 - 17 Bituminous Mix Types
 - 6 Asphalt Binders
- Approximately 4200 tons specified as “WMA”
- SPNWB430C, SPWEB440C
- REVIX™ Technology



WMA vs HMA



WMA vs. HMA



WMA vs. HMA



Laydown Temp



MnROAD WMA Results

- Paved in Mid September
- SPNWB430C
 - Low Voids
 - All density cores over 93%
- SPWEB440C
 - Voids on target
 - 1 passing density lot, 3 failing density lots on first day
 - All density lots passing on day 2



TH 95 (2009)

- TH 95 in Stillwater to TH 97
- Mill, fill and overlay
- Approximately 60,000 tons SPWEB340B
- Paving began on October 26th
- Ceased paving on November 21st
- Evotherm 3G dosed at terminal



TH 95 Stillwater to TH 97



TH 95 WMA Results

- First 4 days of WMA paving
 - 8 passing density lots
 - 6 failing density lots
- Increased mixing and laydown temperature
- Increased rolling efforts to “normal”
 - 48 passing density lots
 - 6 failing density lots



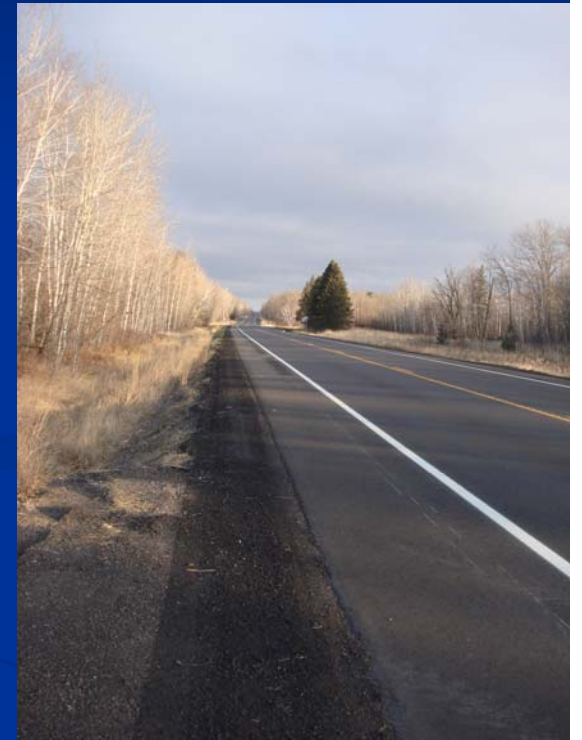
TH 107 (2011)



- TH 107 from TH 23 (Brook Park) to Braham
- Mill, Fill and Overlay
- Approximately 58,000 tons SPWEB340B
- Began Paving HMA on May 19th
- Excessive drying issues and low production
- Incorporated Evotherm 3G on July 29th (19th paving day)
- Utilized additive for remainder of job (9 paving days)



TH 107 (2011)



TH 107 WMA Results

- Lowered mix temperature approximately 30° F
- Kept paving practices constant
- Density results remained similar
- Increased production (TPH) about 25%
- Decreased fuel consumption about 10%



CSAH 34 – Wright County (2011)

- CSAH 34 from CR 120 to CSAH 19 near Hanover
- Reclaim with 2 lift overlay
- Approximately 16,000 tons of SPWEB340B
- Paved in September
- Job was specified as WMA



WMA Challenge

- WMA was specified such that:
 - “Warm mix asphalt, for this contract, shall be produced at the plant at a temperature not greater than 240 degrees F.”
 - “Warm mix asphalt delivered to the project that is not lower than 240 degrees at the plant will be considered unauthorized work, and not eligible for payment.”
- Technology was left up to contractor to meet these requirements



CSAH 34 WMA Results

- All density cores on this project earned incentive
- Excessive thermal segregation due to low production temperatures
- Sizable smoothness disincentive



What We Think We Have Learned

- No miracles should be expected
- Maintain the same paving practices as HMA
- Equal density appears to be achievable with equal effort
- Appears as though fumes/emissions are less
- Crews and plant personnel like working around WMA
- Fuel savings are there
- Need to start “hot” and end “hot”
- Plants do not handle WMA the same
- Optimal mixing and compaction temperatures should be determined during production rather than specified



Questions?



Thank You

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