Asphalt Innovations
Dominic Barilla & Pete Truncale

PAPA Regional Seminars 2018
Today’s Agenda

1. Innovation & Asphalt
2. Advantages & Benefits of Chemical Warm Mix
3. WMA & Porous Pavement
4. Asphalt Recycling Agent Uses
5. Q & A Discussion
“If you have an opportunity to make things better and you don’t, then you are wasting your time on earth.”

~ Roberto Clemente
Chemical Warm Mix

Surfactant chemistry that improves coating and reduces the viscosity of asphaltic mixtures, allowing placement & compaction at significantly lower production temperatures.
Recycling Agents

EVOFLEX

Asphalt recycling agent used to reactivate oxidized RAP/RAS binder and improve blending with virgin binder.
Combination Products

Precisely proportioned blend of Evotherm & Evoflex designed to
1. Reactivate RAP/RAS binder
2. Improve blending between recycled and virgin asphalt
3. Provide better coating & workability
4. Enhance compaction efforts
Chemical WMA Value
Chemical WMA Advantages

1. Improved Compaction
2. Eliminate AC Absorption/Waste
3. Liquid Anti–Strip Replacement
4. Reduced Thermal Segregation
5. LONGER… Hauls, Paving Days, Paving Season
6. Reduced Fuel Consumption and Emissions
7. Longer Binder Life
8. Porous Pavement Applications
9. Increased Usage of RAP/RAS with Recycling Agents
10. Proven Technology – 130MM+ tons placed
Improved Compaction
Reduce Asphalt Absorption
Reduce Asphalt Absorption

Hot Mix Control

TxDOT Cores After 1 Year
Replace Liquid Anti-Strip
Reduce Thermal Segregation
Thermal Segregation

Associated with poor pavement performance...

1. Mix resists adequate compaction even after aggressive rolling

2. Higher permeability's due to lower density

3. Increased binder oxidation

4. Reduced life of the road
24 Deg Difference
Longer Hauls Longer Season
Longer… Hauls, Paving Days, Paving Season

• Early Start
  – Getting a jump on the competition

• Late Season
  – Finishing jobs
  – Squeezing in extra jobs
  – Emergency paving

• Longer Day
  – Starting earlier in the day
  – Minimizing crew wait times
  – Increasing production

• Longer Haul
  – Expanding market reach
  – Additional bid opportunities
  – Handles unexpected wait times
Reduced Fuel Consumption
Reduced Emissions
Lower Emissions

Hot Mix

EVO THERM

ingevity
Increased Binder Life
Longer Binder Life with WMA

Hot Mix

EVOThERM
WMA & Porous Pavement
Porous HMA Pavement Properties

Coating

Temperature

Viscosity

Workability

Temperature

Viscosity

Problem:
High Temps & Low Vis = Drain Down
Draindown Solutions

Possible Solutions:

1. Add Fiber, Increase AC Content
   a. EXPENSIVE

2. Add Evotherm & Reduce Production Temps
   a. Eliminate Fibers & Reduce AC Content
   b. Rely on chemistry to provide coating and workability at lower temperatures.
More RAP, More RAS...
Hot Mix with RAP & RAS
Evotherm with RAP & RAS
Asphalt Recycling Agents
How can Chemical Additives Help?

1. Soften oxidized binder in RAP/RAS to allow thorough blending
2. Facilitate blending of virgin asphalt with oxidized asphalt
3. Promote addition of more RAP and RAS
4. Offset stiffness related to oxidized RAP/RAS binder
5. Eliminate the need to lower binder grade
Evotherm – Evoflex Continuum

0%  15%  30%  50% +
Evotherm
Evoflex
Evotherm-Flex

Dominic Barilla
Technical Marketing Manager
(843) 371-7716
dominic.barilla@ingevity.com