Does & Don’ts of Asphalt Paving

Cornell Local Roads Program
2014 Highway School
Ithaca College
June 2, 2014

Bruce Barkevich, Vice President
New York Construction Materials Association

Who Are We?
- New York Construction Materials Association is an Association representing our Industry: Aggregate, Asphalt, and Concrete Producer in New York State.
- The Association works with the State Agencies and private owners developing specifications, initiatives etc.

Hit list of some of Bruce’s problem areas.
- Communication
- Compaction
- Segregation
- Material Type
- Trucking and Material Supply
- Equipment
- Tack Coat
- Proper Treatment
- Joints
- Details

Communication (at all levels)
- Make sure proper materials are on your bid and available
- Discuss with paving foreman his material, equipment & trucking needs (daily quantity)
- Give plenty of notice to material supplier of daily needs – more notice is better (mix designs, plant availability, etc)

Why is Compaction Important?
- Density
  - Quality
  - Longevity

Compaction, Compaction, Compaction
- Compaction is durability
- Process of aligning the aggregate for maximum strength and stability
- Compact to proper air voids
- Have proper equipment for the project
- Consider monitoring density
Factors Affecting Compaction Success

- Proper Mix Temperature
  - Most effective when delivered between 260-300°F
- Confinement
  - Stable subbase
  - Sufficient effort from roller
- Proper rolling technique

What is Segregation?

Segregation in a hot mix asphalt (HMA) mixture can be defined as the separation of the coarse aggregate particles in the mix from the rest of the mass. The segregation can take one of three forms—random, side-to-side or longitudinal, and truckload to truckload.

What are the causes of segregation?

At every stage of handling for materials there are opportunities for segregation from the Plant, the Storage of the material, the loading and hauling and finally the placement of the Mix.

Align Truck with Paver

- **Misalignment Causes**
- **Steering Problems**
- **Mix Spills**

Continue Paving

- Keep Paving as Truck Departs
- Watch Level of Mix in Hopper
- Next Truck in Position

Don’t!

- Run Material Below Flow Gate Height (If Applicable)
- Expose Conveyor Chains
- Fold Hoppers Into an Empty Conveyor
- Allow Material to Get Cold & Segregate in the Outside Rear of Hoppers
Why worry about Segregation?

Segregation can affect pavement durability directly by increasing the air void content of the mix in the segregated areas and increasing the potential for moisture damage. Further, the segregated locations are susceptible to raveling and, if bad enough, to total disintegration under traffic.

Diesel Fuel & Asphalt – Don’t

- Diesel Fuel is a Solvent
- Will strip the asphalt from the rock
- Puddles of diesel in paver or truck bodies will deteriorate your pavement
- Use a proper release agent – many suppliers carry them

Joints – Transverse & Longitudinal

- Square up edges and tack
- Use a straight edge when finishing joint
- Cross roll to make sure joint matches
- A bump will deteriorate surrounding pavements

Joints – Transverse & Longitudinal

- Determine the type of joint – butt, wedge, notch, wedge
- Use joint matcher when available
- Don’t starve the joint for material – raking & bumping is not required
- Pave in straight lines – give operator a line to follow
- Roll from hot to cold

Bad Joints
Good Joints

Make sure your equipment is in good working order

Auger & screeds don’t have uneven wear

Flashing on paver is not damaged

Breakdowns happen – minimize them by proper maintenance

Minimize handwork

Plan your pulls to cut down on pick up and set downs – paint out the plan

Maximize your widths to eliminate raking

Half screeding is better than wheel barrowing and raking

Pull shoulder with mainline when available

Tack Coat

I always call it cheap insurance

FHWA has done a major study on tack coat – application rates & evenly distributed

Drizzling isn’t effective use

Take samples & check meter readings

Material Supply & Trucking

Communicate to the plant how much material you need

Let them know what product you are looking for

Review roads to the project and best way trucks should get to the job for easy access

Match your trucking with the expected plant production and expected round trip times

Proper Lift Thickness

FHWA recommends 3-4X the nominal maximum size

Facilitates Compaction Efforts and Longevity

Type 6 = 1.5”-2”

Type 7 = 1.0”-1.5”
Material Selection for your Application

- Use the proper material for the application
- Pavement Preservation – Type 7, 6.3mm, 9.5mm
- Wearing Course – Type 6 or 7, 6.3mm, 9.5mm, 12.5mm
- Structural Layer – All of the above (base & binder as needed)

“The Pothole Epidemic”

- The real culprit is money!!!!
- Let’s be sure to do our repairs properly
  1. Square up the hole
  2. Clean & Dry the hole
  3. Tack all edges
  4. When deep bring up in lifts
  5. Compact with proper tools
- Let’s minimize the “throw & go”

Pay Attention to the Details

- Dollars are short
- Spend the dollars as wisely as we can
- Don’t let the unknown trip us up
- Prior preparation prevents pitifully poor performance

THANK YOU!!!

Questions?????

Contact Information:

Bruce Barkevich
New York Construction Materials Association
11 Century Hill Drive
Latham, New York 12110
Phone: (518) 783-0909
Webpage: www.nymaterials.com