Asphalt Challenges in Russia

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Why Are We There?

• Business Opportunity
  – Modified AC Product for:
    • Open-Graded Cold Mix (Low Volume Routes)
    • Stone Matrix Asphalt (High Volume Routes)
  – Transfer Technology
• Russia has NO interstate system
• Moving goods & people is a slow process
• Major factor in Russia’s slow growth economy
Training Needs

Mix Design
Pavement Design
Building Highways
Technology (plants & equipment)

Overall plan for building their transportation infrastructure
Specifications
Transferring Technology & Ideas

• Lot’s of little things can add up to success or failure!
• Translation of *meaning*
• WHY are we sure it will work?
• What advantage will it give them?
Are Their Roads Performing?
Bumps Ahead!
Materials

- Asphalt Cement
  - Penetration
  - Viscosity
  - Using some modified AC’s

- Aggregates
  - Very diverse!
  - Lack of quality control
Materials Testing
Going back in time...
Bulk Specific Gravity

Surface Voids

Volume of water-permeable voids

\[ G_{sb} = \frac{\text{Mass (oven dry)}}{\text{Vol of Agg, } + \text{ Surface Voids}} \]
Fine Aggregate

“Ground” Coarse Aggregate
Static Lab
Compaction
4% Lab Voids AND
4-5% In-Place Field Voids (95-96% Density)…
Who forgot to fill the hole?
What are bin dividers?
Calibrating the AC pump on a BATCH plant...
Let’s put it in the stockpile!
Manually Calibrating the Cold Feeds
Merge carefully!
Novosibirsk 2005
OGCM Test Section

- Till and compact to generate an in-place recycled HMA base
- Install “French” under drains
- Apply tack coat
- Place two open-graded CM mixes
Is this really a good idea?
“French” Drain in Russia
It’s not an Etnyre but it’ll do!
Blotter aggregate
Novosibirsk – October 2006
NOT the proper way to sample hot bins!
I need a defibrillator NOW!
What have we learned?

• It’s difficult to communicate ideas!
• Our technology and techniques will work!
• Lots of opportunity, but it takes time and effort to develop!