

PAPA Regional Technical Meetings

Recycled Tire Rubber

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Recycled Tire Rubber

- Why is rubber used in pavements?
- History of use in PA
- Gap-Graded and Dense-Graded



Dense-Graded Rubber Mix

- Continuously Graded
- Wet Process
- Lower Viscosity, Rubber Content, and Rubber Size Than Gap-Graded
- Limited Use Nationwide
- CRMAB

Dense-Graded Rubber Mix

Advantages

- Reduced Permeability
- Improved Resistance to Cracking
- Pavement Layers
- Long-Term Durability



Dense-Graded Pilot Projects

- District Memo
- Pilot Projects



CRMAB Dense-Graded Pilot Projects

| ECMS | District | SR | Miles of CRMAB | CRMAB Pavement Layers | Status |
|--------|----------|-----|----------------|-----------------------|-------------|
| 98449 | 12-0 | 366 | 2.52 | Wearing | Completed |
| 104237 | 6-0 | 63 | 3.17 | Wearing | Completed |
| 101922 | 4-0 | 924 | 1.24 | Wearing | Paving 2016 |
| 93255 | 2-0 | 322 | 1.47 | Wearing | Paving 2016 |
| 90908 | 8-0 | 272 | 2.62 | Wearing | Paving 2016 |
| 105503 | 10-0 | 954 | 4.08 | Wearing | Paving 2016 |

- 1 Additional Pilot Project in 2016

CRMAB Special Provision

- Clearance Transmittal for CRMAB dense-graded SSP revisions for Solubility and Separation was sent out on 02/09/16.
- Comments were due 03/09/16.
- Currently addressing comments.

Asphalt Rubber Gap-Graded

- What is “Asphalt Rubber”?
- Gap-Graded



Asphalt Rubber Gap-Graded Pilot Projects

- I-78 in Berks County (ECMS: 87631)
- US 15 in Snyder County (ECMS: 87769)
- US 15 in Adams County (ECMS: 90201)
- I-376 Lawrence County (ECMS: 81954)

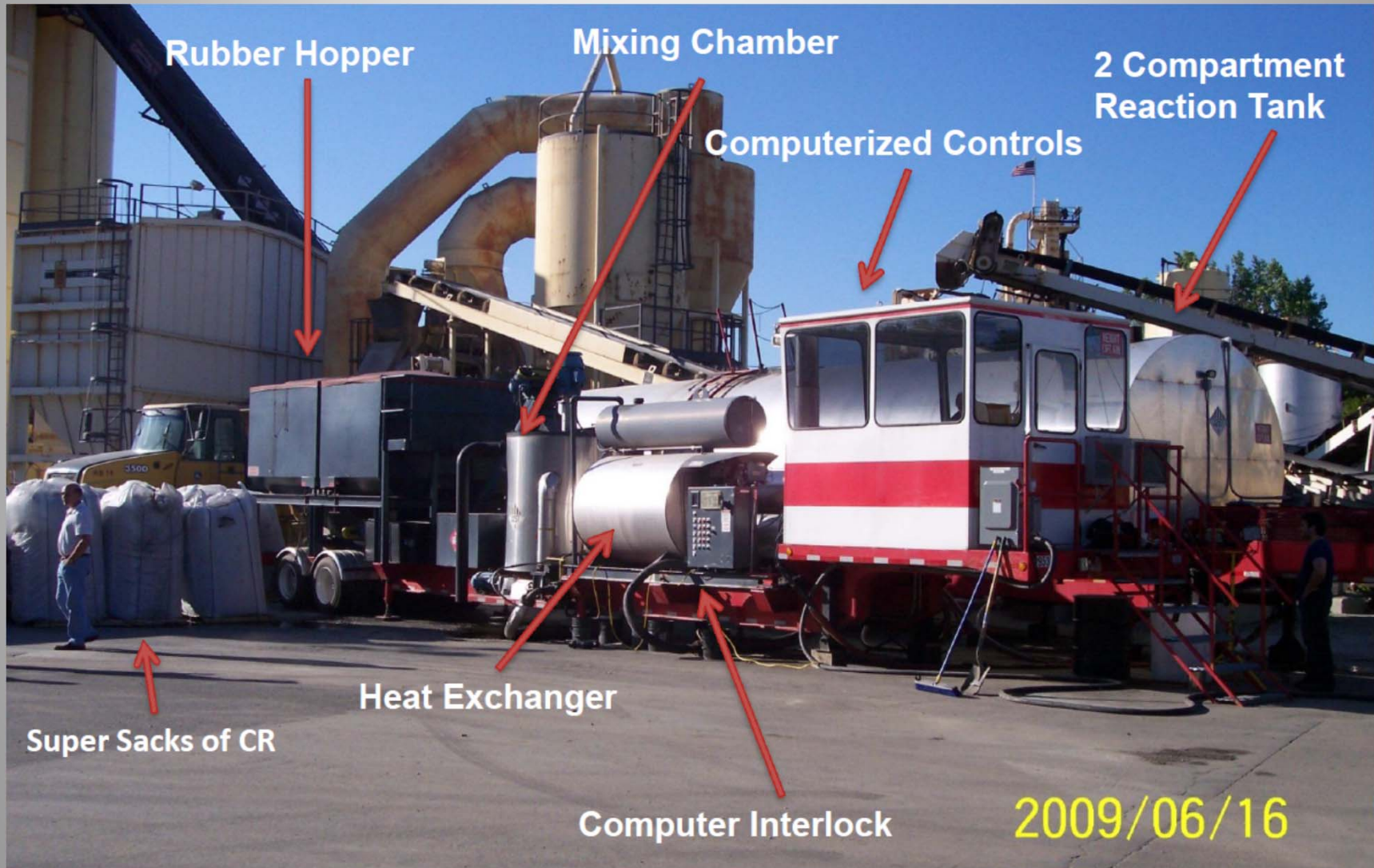


I-78 Gap-Graded Pilot Project

- Asphalt Rubber 12.5mm WMA Wearing Course
- Control section used a polymer modified PG 76-22, 9.5mm mix
- Utilized the ASTM D 6114, Type II, **“Wet Process”**



I-78 Gap-Graded Pilot Project



I-78 Gap-Graded Pilot Project



I-78 Gap-Graded Pilot Project



I-78 Gap-Graded Pilot Project

Challenges

- Slightly Sticky Texture; material had a tendency to adhere to paving equipment
- Downy Fabric Softener acted as lubricating agent (*prevented sticking*) when applied to rollers and spray bar system
- Compaction on leveling course
- Tight/condensed schedule
- High AC contributed to reduced-sized batches; reduced max load capacity in trucks

I-78 Gap-Graded Pilot Project

Successes

- IRI: 52.64
- Two Bonuses Received on Project:
 - Ride Quality Incentive
 - Joint Density
- No Raveling of Exposed Wedge Joint
- Completed by deadline despite a new material and tough spec
- Worked jointly with several PennDOT Districts to complete project
- Performing exceptionally well to this day

Project Selection Guidelines

- Description of Rubberized Asphalt Binders and Asphaltic Concrete Mixtures
- Rubberized Asphalt Mixture Types
 - Gap-Graded
 - Dense-Graded
 - Open-Graded
- Recommendations for Implementation

Questions?

