



STATE OF NEW JERSEY
DEPARTMENT OF TRANSPORTATION

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HMA REHABILITATION TECHNIQUES

Pavement Rehab Goals

- ◎ Improve Pavement Condition
- ◎ Improve Ride Quality
- ◎ Improve Safety
- ◎ Extend Life
- ◎ **Increase Structural Capacity**
- ◎ Reduce Life Cycle Costs
- ◎ Increase Customer Satisfaction
 - Noise Reducing Surface(s)

HMA Pavement Rehab Strategies

- ⦿ Functional Overlay (mill and pave)
 - Single or multiple lifts
 - HMA Repair to failed areas
- ⦿ Structural Overlay (mill, pave and increase profile)
 - Multiple lifts
- ⦿ Paving Fabrics
- ⦿ Use of premium surface mixes
 - AROGFC
 - HPTO
 - SMA
 - SMAR
 - Ultra-thin Friction Course

Milling and Overlay - Why do we need to core?

- ⦿ Need to remove the entire layer to avoid scabbing
- ⦿ Need to remove reasonable amount of the deteriorated pavement



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- ⦿ **Need to remove reasonable amount of the deteriorated pavement**



Hot Mix Asphalt (HMA) Pavement Repair – 401.03.01.D



HMA Repair - Fatigue Cracking in Wheel Path



HMA Repair - Removal of Fatigue Cracked Pavement



HMA Repair - Compact Underlying Base



HMA Repair - Tack Coat Existing Vertical Surfaces



HMA Repair - Place & Compact HMA



Hot Mix Asphalt Pavement Repair

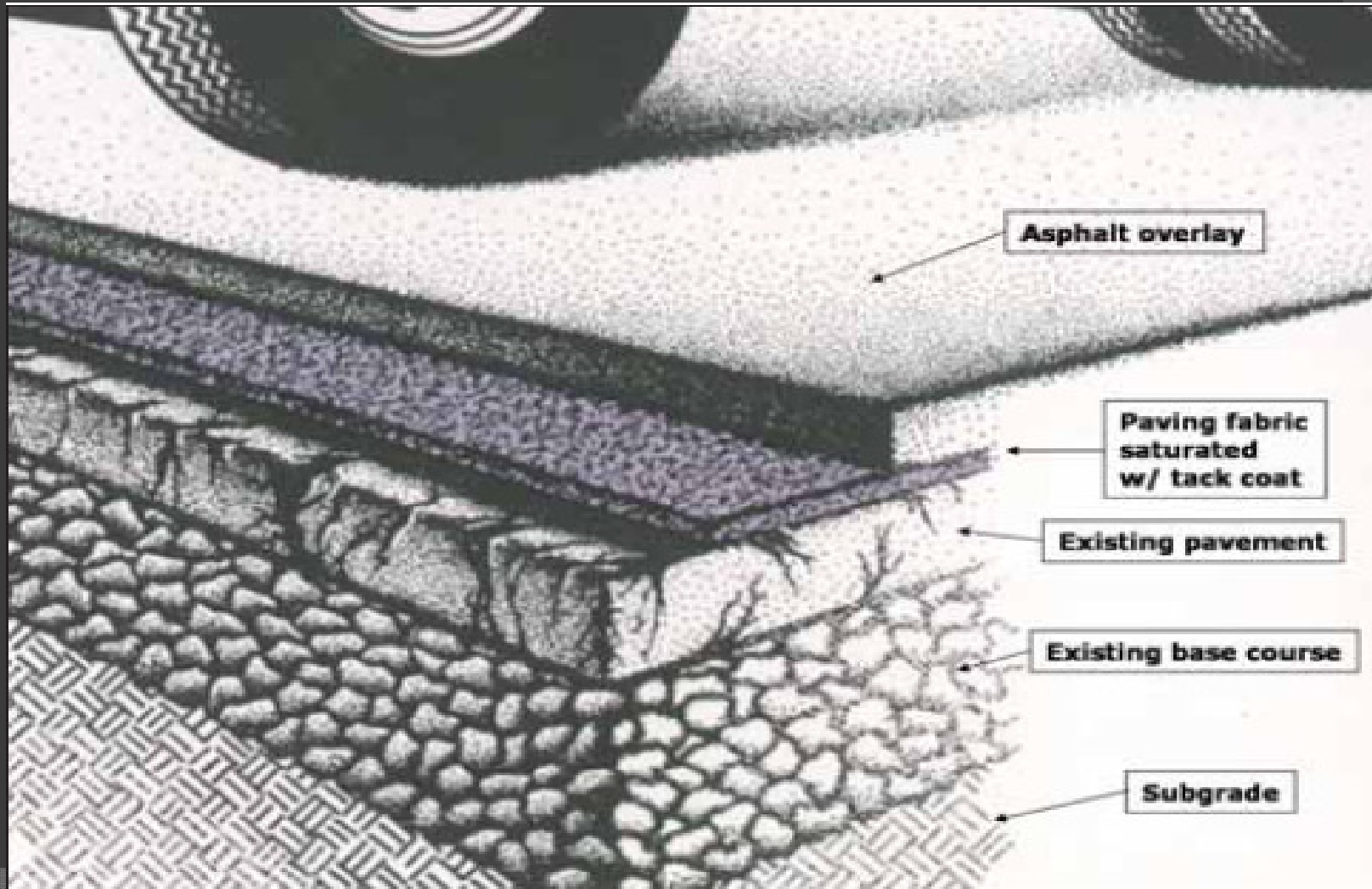
- ⦿ Can be done as a stand alone repair
- ⦿ Usually done prior to milling and overlay
- ⦿ Typically HMA
25M64 Base Course



Paving Fabric

- ① Waterproofing the pavement structure
- ① Arresting cracking
- ① Increase fatigue life

Paving Fabric



Paving Fabric - Tack Coat 64-22



Paving Fabric



Paving Fabric

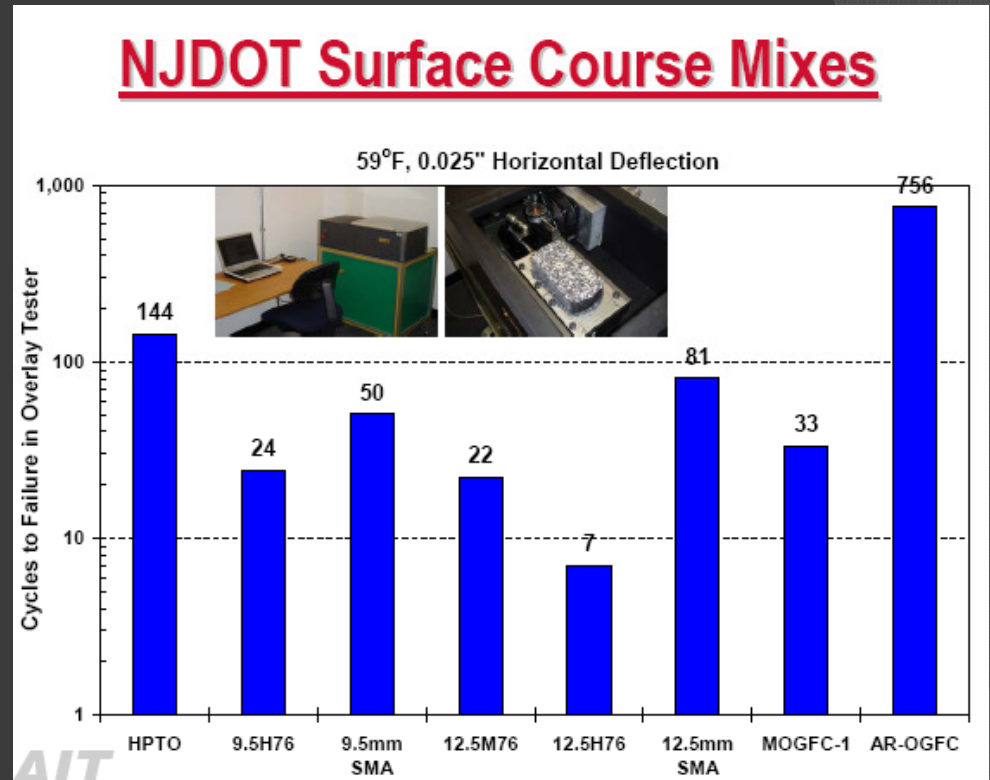


Asphalt Rubber Open Graded Friction Course



Why premium surface mixes?

- ⦿ Better fatigue life
- ⦿ Better durability
- ⦿ Increased skid/safety
- ⦿ Reduced noise
- ⦿ Preservation of pavement structure
- ⦿ Increased customer satisfaction



High Performance Thin Overlay



SMA 9.5mm Surface Course



Ultra-Thin Friction Course (Novachip)



HMA Rehab Project

Rt.95 Resurfacing (MP 0.2-8.77)

- From Rt.29 to Rt.1



Rt.95 Resurfacing (MP 0.2-8.77)

– From Rt.29 to Rt.1

⦿ Testing Performed

- Visual Survey
- FWD testing
- Coring
- DCP

Rt.95 Resurfacing (MP 0.2-8.77)

– From Rt.29 to Rt.1

⦿ Analysis and design

- Structural overlay required based on FWD and AASHTO 1993 design procedure
- Project segmentation based on results
- Profile increased by 3”
- Paving Fabric included in some segments
- General design
 - 1” AR-OGFC
 - 2” Superpave HMA 12.5H76 S.C.
 - 3” Superpave HMA 19H76 Intermediate Course

Rt.95 Resurfacing (MP 0.2-8.77)

- From Rt.29 to Rt.1



Rt.95 Resurfacing (MP 0.2-8.77) – From Rt.29 to Rt.1

- ◎ SDI = 1.32
- ◎ Ride Quality
 - MP 3.4-8.7, IRI=116.5

- ◎ SDI = 5.0
- ◎ Ride Quality
 - MP 3.4-8.7, IRI=30

Before Rehab

After Rehab

Rt.95 Resurfacing (MP 0.2-8.77) – From Rt.29 to Rt.1

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Before Rehab

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- Ride Quality
 - MP 3.4-8.7, IRI=30



After Rehab

Thank you. Questions?

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