



# Accelerated Pavement Testing and Research Program

Florida Department of Transportation  
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# What is Accelerated Pavement Testing?

- Investigation and evaluation of pavement systems subjected to accelerated loading.
- Accelerated loading must be applied in a realistic manner.
- We now have the capability to simulate years of traffic loading in a matter of weeks.

# APT Advantages

- Time
- Control of Variables
- Economy
- Flexibility



# Objectives of the APT Program

- Focus on the Florida's most critical issues
- Determine solutions
- Facilitate implementation

## **Objectives Include:**

- Validation of existing methods / materials
- Validation of innovative methods / materials
- Long-range research
- Trouble-shooting type problem solving

# APT Assets

Tools available to conduct accelerated pavement testing:

- Dedicated test track
- Dedicated test pits
- Full laboratory capabilities
- Heavy Vehicle Simulator

# Test Track Facility



# Test Pit Facility



# Test Pit





# Heavy Vehicle Simulator



- **Weight:**  
50+ tons
- **Length:**  
75 feet
- **Height:**  
13 feet
- **Width:**  
12 feet

# Testing and Loading Capabilities

- Wheel loading from 7 to 45 kips
- Maximum wheel speed: 8 mph
- Sinusoidal loading
- Maximum passes/day:
  - 29,000 for bi-directional testing
  - 14,000 for uni-directional testing

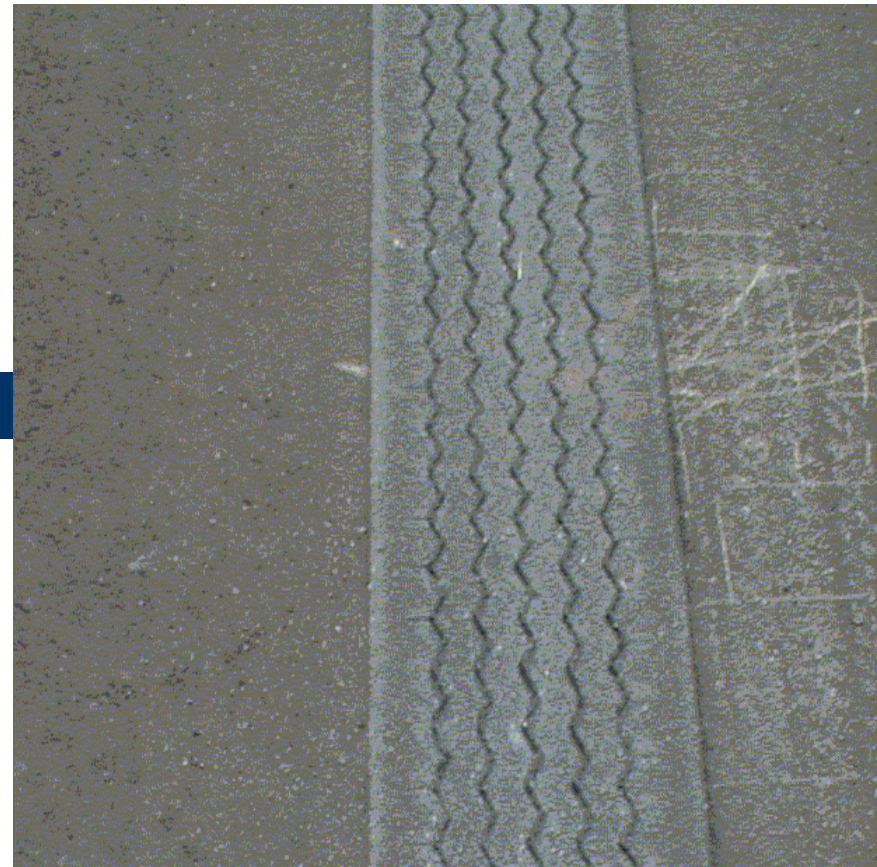


# Testing and Loading Capabilities

- Test Track Length: 20'
- Wander From 0 – 30"
- Super-Single vs. Dual
- Maximum Rut Depth: 4"



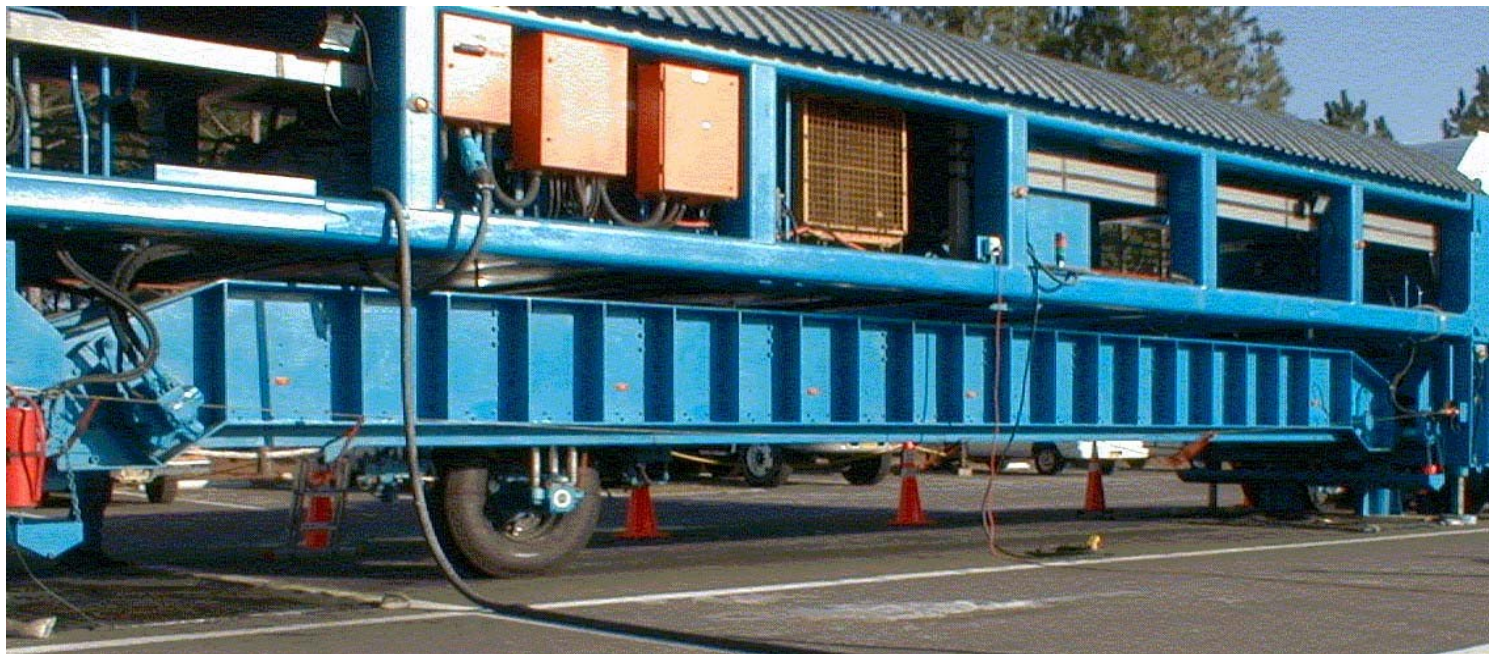
# Rut Examples



↑ Bi-Directional, No Wander

↵ Uni-Directional, No Wander

# Uni-Directional Testing



# Bi-Directional Testing



# Laser Profiling



# Temperature Control





# Performance-to-Date

- Put into service 10/25/00
- Over 5 million loaded passes to date.
- Average daily “down” time for scheduled preventative maintenance is roughly 1 hour.
- Very pleased with the reliability.

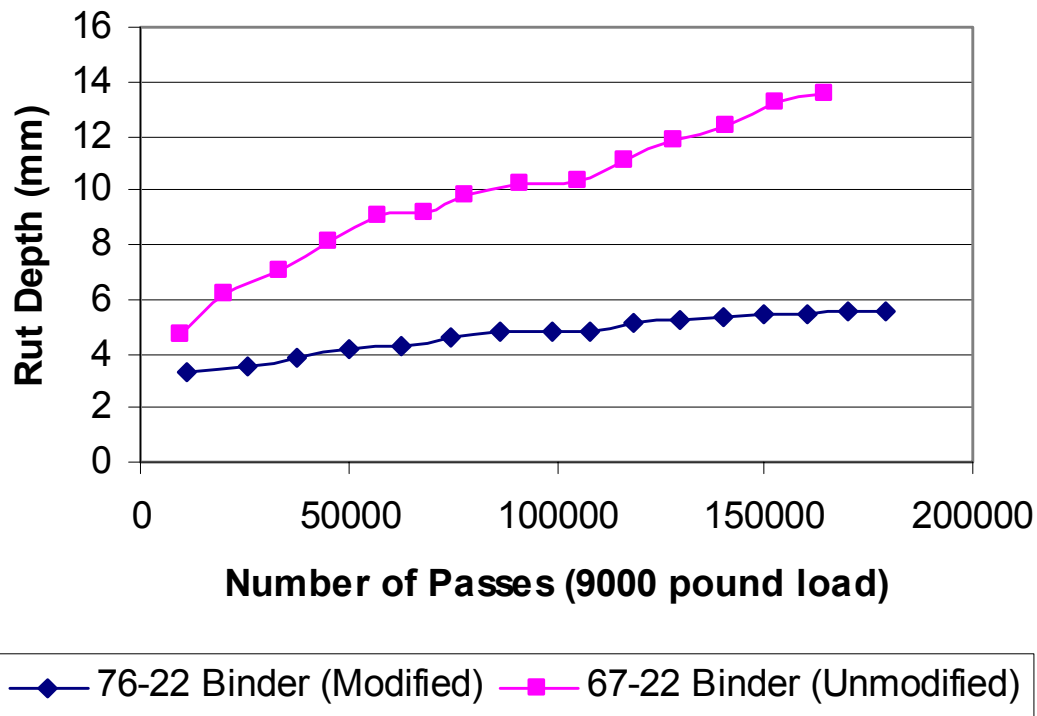
# Performance Comparison



- Rut comparison study
- Identical Super-pave mix - except for the binder
- PG 67-22 vs. PG 76-22

# Initial Results

**Initial Rut Comparison  
67-22 (Unmodified) vs. 76-22 (Modified) Binders**



# Contact Information



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