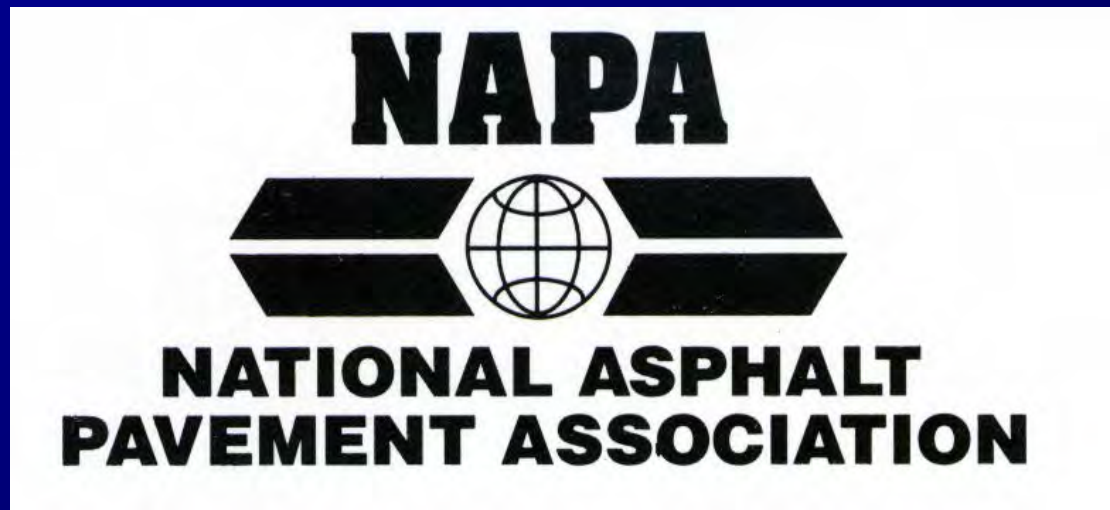


NAPA Training Tools



Importance of Training

- Expertise is being lost.
- Recruitment is critical.
- Time for OTJ training greatly reduced.
- Fewer opportunities for travel to training.
- Quality requirements greater.

NAPA Strategy

- Trade Show Opportunities
 - World of Asphalt
 - ConExpo-ConAgg
- Training Tools
 - Toolbox Talks
 - On-line Training
- Self-Directed Computerized
 - NAPA Guide to HMA Pavements
 - Virtual Superpave Lab
- Publications

NAPA Toolbox Talks

Toolbox Talks



Rolling Procedures

For Quality, Consistency
&
Productivity



Truck Exchange



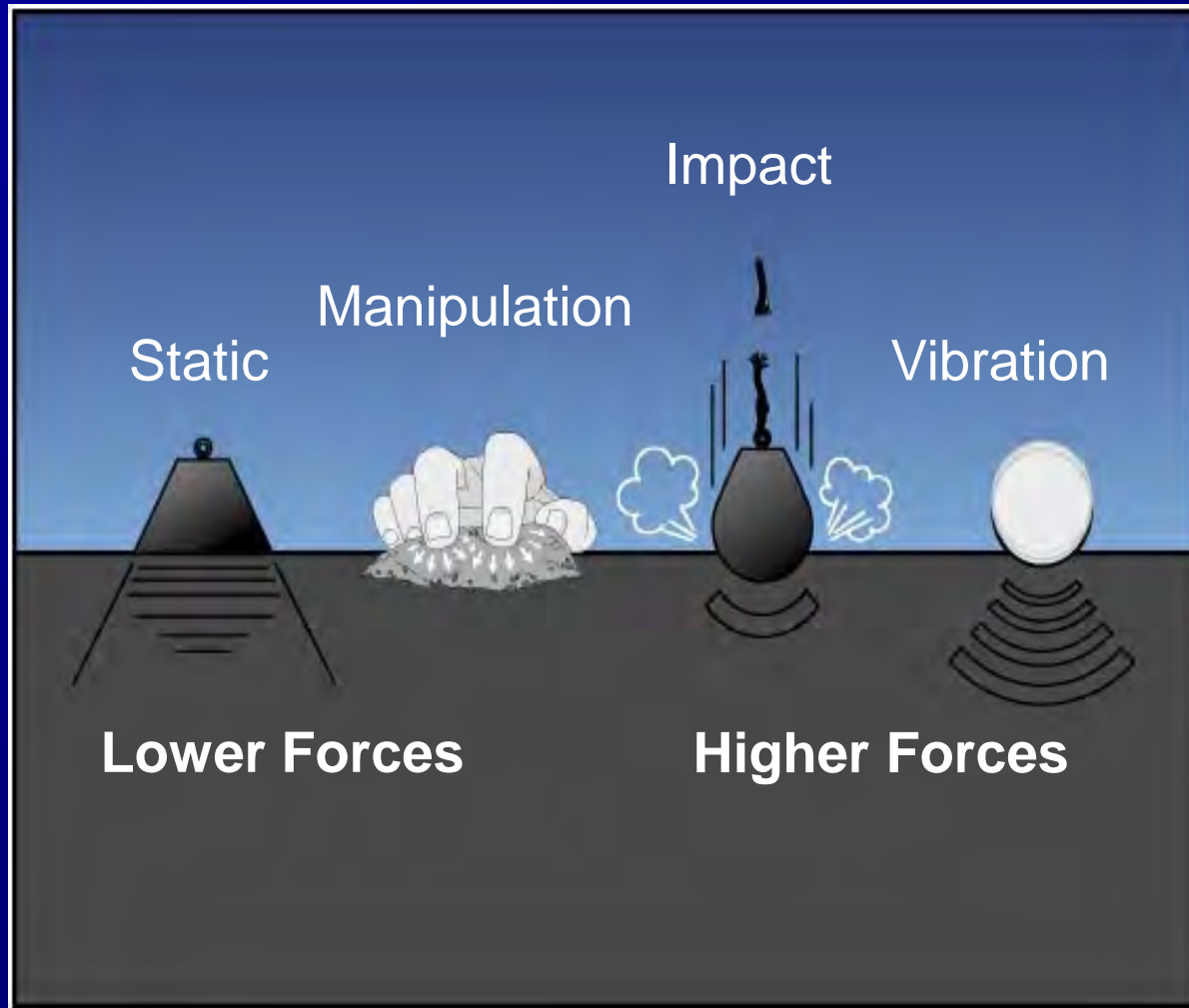
MTV Exchange

Longitudinal Joint Construction

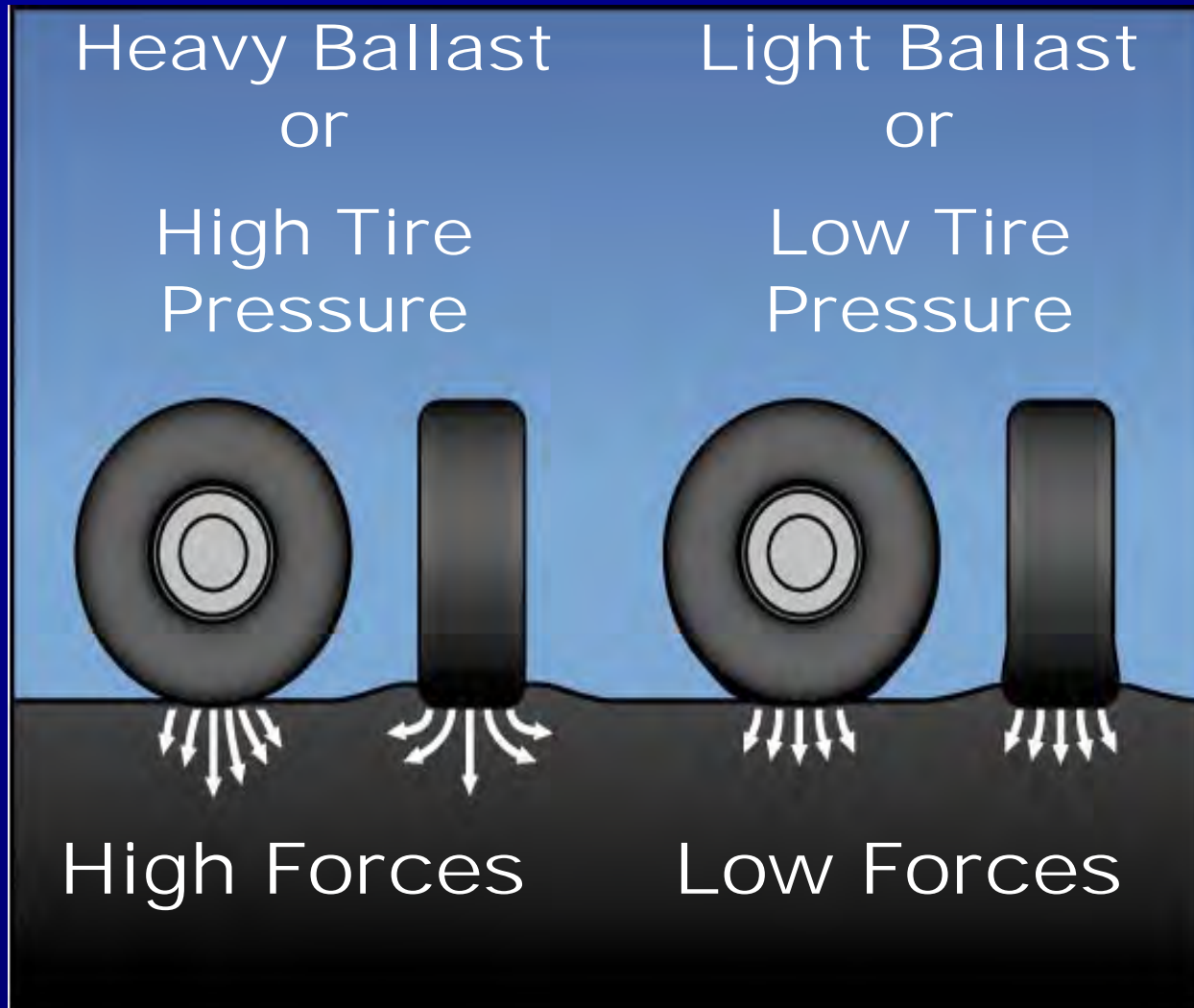
**Building a Sound
Longitudinal
Joint**

Forces of Compaction

Forces of Compaction



Pneumatic Static Pressure



Self-Directed Learning

Virtual Superpave Laboratory

[Introduction](#)

[Aggregate Tests](#)

[Asphalt Binder Tests](#)

[Hot Mix Asphalt \(HMA\) Tests](#)

[Superpave Mix Design](#)

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INTRODUCTION



1. General VSL Information

- [Introduction to the VSL](#)
- [Site Index](#)

2. General Pavement Information

- [The Equivalent Single Axle Load](#)
- [Pavement Distress Types](#)
- [HMA Mixture Types](#)

3. Superpave Information

- [What is Superpave?](#)
- [Recycled Materials in Superpave](#)



THEORETICAL MAXIMUM SPECIFIC GRAVITY



[Overview](#) · [Background](#) · [Test Description](#) · [Results](#)

Test Description

The following description is a brief summary of the test. It is not a complete procedure and should not be used to perform the test. The complete test procedure can be found in:

- AASHTO T 209 and ASTM D 2041: Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

SUMMARY

A loose sample of either laboratory or plant produced HMA is weighed while dry (to determine its dry mass) and then a short procedure is used to determine the sample's volume. The theoretical maximum specific gravity is then the sample's mass divided by its volume. [Figure 4](#) shows major test equipment.

APPROXIMATE TEST TIME

45 minutes per test after samples are prepared (2 samples per test typically).

BASIC PROCEDURE

Test samples may be representative of a mixture prepared in the laboratory or in a HMA plant. The mixture should be loose and



Figure 4: Maximum theoretical specific gravity equipment.

A Guide for Hot Mix Asphalt Pavement

MAIN MENU

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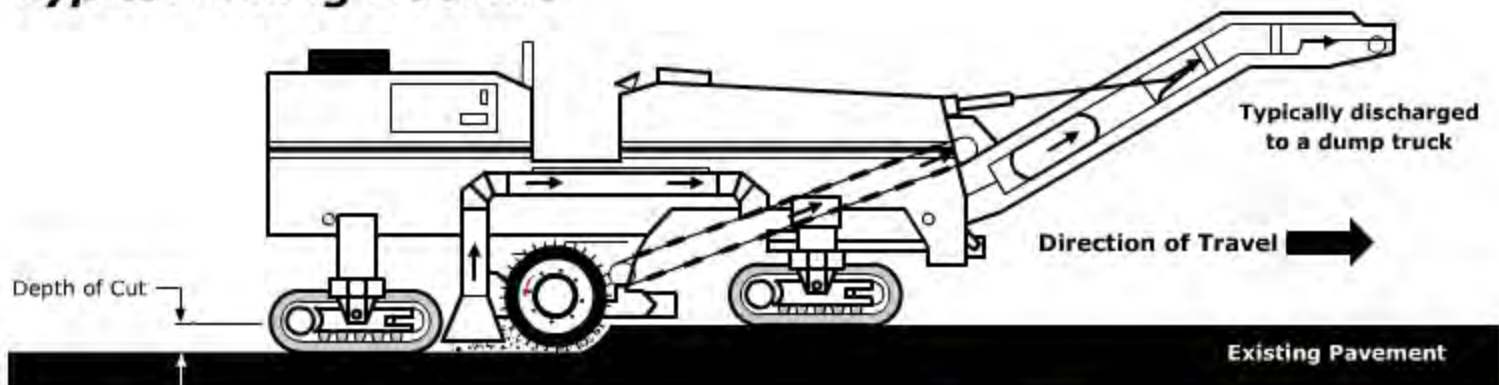
About the NAPA Guide

Main Menu (List of Modules)

1. [Welcome & Introduction](#). General document premise and pavement introduction/history.
2. [Materials](#). Basic explanation of pavement materials - aggregate and asphalt - and their associated tests.
3. [Design Parameters](#). Discussion of HMA pavement design inputs beyond material characteristics. Concentrates on subgrade characteristics, loads (traffic) and the environment.
4. [Mix Types](#). Overview of the different types of HMA available and guidance on when each might be appropriate. Also includes a section on HMA recycling.
5. [Mix Design](#). Basic explanation of the principal methods of HMA mix design. Includes the Hveem, Marshall and Superpave methods.
6. [Structural Design](#). Overview of basic structural design approaches including both empirical and mechanistic-empirical methods.
7. [Construction](#). Discussion of HMA pavement construction including production, transport, laydown, compaction, surface preparation, quality assurance and specifications.
8. [Pavement Evaluation](#). Survey of the basic methods of pavement evaluation, why they are used and the most common measurements used. Includes a picture catalog of HMA pavement distress.
9. [Maintenance & Rehabilitation](#). Overview of current rehabilitation and maintenance methods with a focus on overlay design.

NAPA

Typical Milling Machine



Directions:

Roll the mouse over any part listed in the grey box at right to see its location in the milling machine.

- Tracks
- Vacuum
- Cutter Drum
- Conveyor Belts



Figure 7.7: Milling Machine Components



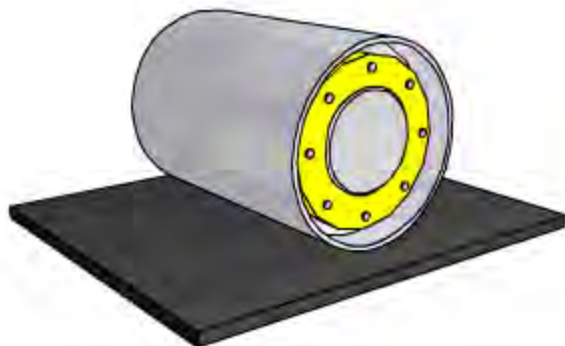
On-line Training

Components of Compaction



Impact Compaction

- Force created by the striking of the roller drum or tire against the HMA mat surface



See the Impact Component



See the Impact Component



Publications

Information Series 128



U.S. Department
of Transportation
Federal Highway
Administration



NATIONAL ASPHALT
PAVEMENT ASSOCIATION

HMA Pavement Mix Type Selection Guide



Conclusion

- Visit www.hotmix.org for more information on:
 - publications
 - on-line training
 - self-directed learning
 - toolbox talks
 - training venues
- Flyers available on vendor table.