

Development of Specification for Friction Testing Using Dynamic Friction Tester (DFT)



Sejal Barot

Director

MDOT SHA Office of Materials Technology

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Friction Testing and Specification

Development Task force

- **Objective :** Evaluate the available practices and information regarding the measurement of surface frictional properties of asphalt surfaces and aggregates and to develop a standardized test methods for friction testing using the Dynamic Friction Tester (DFT).

The **DFT** is a portable instrument that measures the frictional characteristics of surfaces in laboratories and/or in the field.



Unbound
Aggregate
Lab Specimen
for DF Testing.

Roadway DF Testing



Task Force Progress

- Maryland, Florida, West Virginia, Virginia, Tennessee, Oklahoma, Georgia, Indiana, New York, Ohio , AASHTO and NCAT actively participating in the ongoing efforts.
- 10 meetings since January 26, 2018.
- A DFT repeatability/reproducibility study conducted between the MDOT and NCAT labs.
- Conducted a survey of all state DOTs regarding their use of the Dynamic Friction Tester.
- Two AASHTO Standard Methods drafted – Unbound Aggregates and Asphalt Mixture Specimens.

DFT Repeatability/Reproducibility Study

FHWA/NAPA COOP Study Report

Three Wheel Polishing Device & Dynamic Friction Tester Accelerated Laboratory Friction Testing Repeatability/Reproducibility Study

By

National Center for Asphalt Technology,

in cooperation with the

Maryland Department of Transportation
State Highway Administration

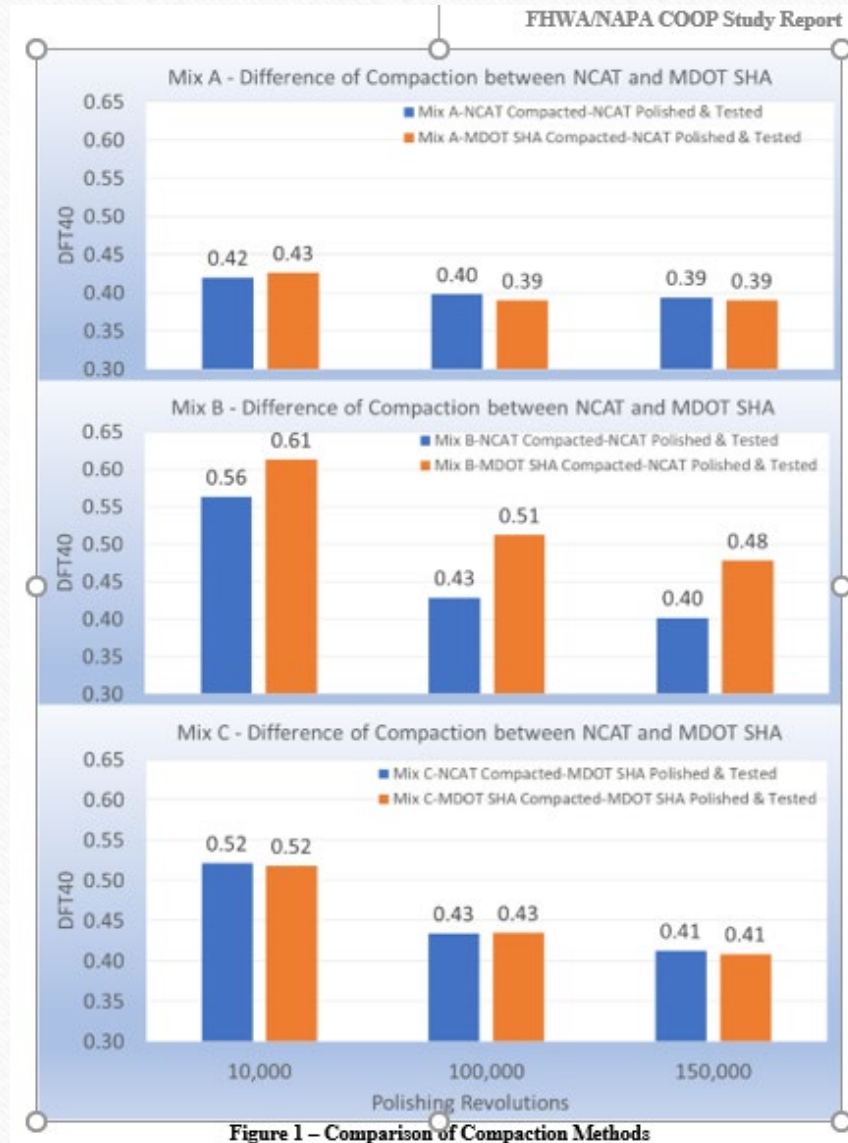
DRAFT June 1, 2019



NCAT –
Modified Hamburg Compactor



MDOT –
Jack Hammer Compactor



Survey Summary- Use of DFT by State DOTs

Survey Questionnaire - Dynamic Friction Tester (E-1911) - July 2019 <i>Method of sample preparation and accelerated polishing of materials for friction testing</i>			
Survey respondents = 32 DOTs			
States that own DFT = 7 (22% of respondents)			
States using DFT in the field = 7 (Maryland, Delaware, Ohio, Arizona, Minnesota, Georgia, Virginia)			
States using DFT in the lab = 1 (Maryland)			
States with DFT	DFT Use (frequency per year)	Laboratory Sample Preparation Method	Polishing or abrasion device for DFT
Maryland	Asphalt - lab and pavement (10-30) HFST - lab and pavement (0-5) Aggregate - lab (30-40) Research- lab and pavement (10-20)	1. Asphalt - compaction by impact 2. Aggregate and HFST -hand placing on epoxy mold	Three Wheel Polishing Device
Delaware	HFST - pavement (quantity varies)	None	None
Ohio	Research - pavement (20)	None	None
Arizona	Research - pavement (as needed)	None	None
Minnesota	Research - concrete and asphalt (as needed)	None	None
Georgia	Asphalt - pavement (0-8) HFST - pavement (12-20), Research - pavement (6-40)	None	None
Virginia	Research - pavement (as needed)	None	None

Two Draft AASHTO Standard Methods

Ready for Balloting

Standard Practice for

**Sample Preparation and Polishing
of Unbound Aggregates for
Dynamic Friction Testing**

AASHTO Designation: R xx-xx

Technical Section: 1c, Aggregates

Release: Group

ASTM Designation: N/A

Standard Practice for

**Sample Preparation and Polishing
of Asphalt Mixture Specimens for
Dynamic Friction Testing**

AASHTO Designation: R XX-XX

Technical Section: 2c, Asphalt–Aggregate Mixtures

Release: Group 3 (August)



Thanks!!!!

Questions????