What is AASHTO/NCHRP and why do we care?

Mark Felag and Baxter Blue

NCC – Savannah, GA – Spring 2023

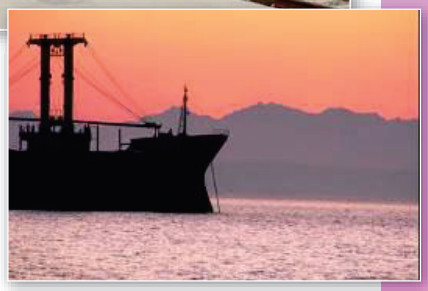
Agenda

- What is AASHTO?
- What is COMP?
- COMP Updates
- PEM Work
- What is NCHRP?
- NCHRP Research Projects
- NCHRP Synthesis Projects
- Why do we care?



Background

What *is* AASHTO?

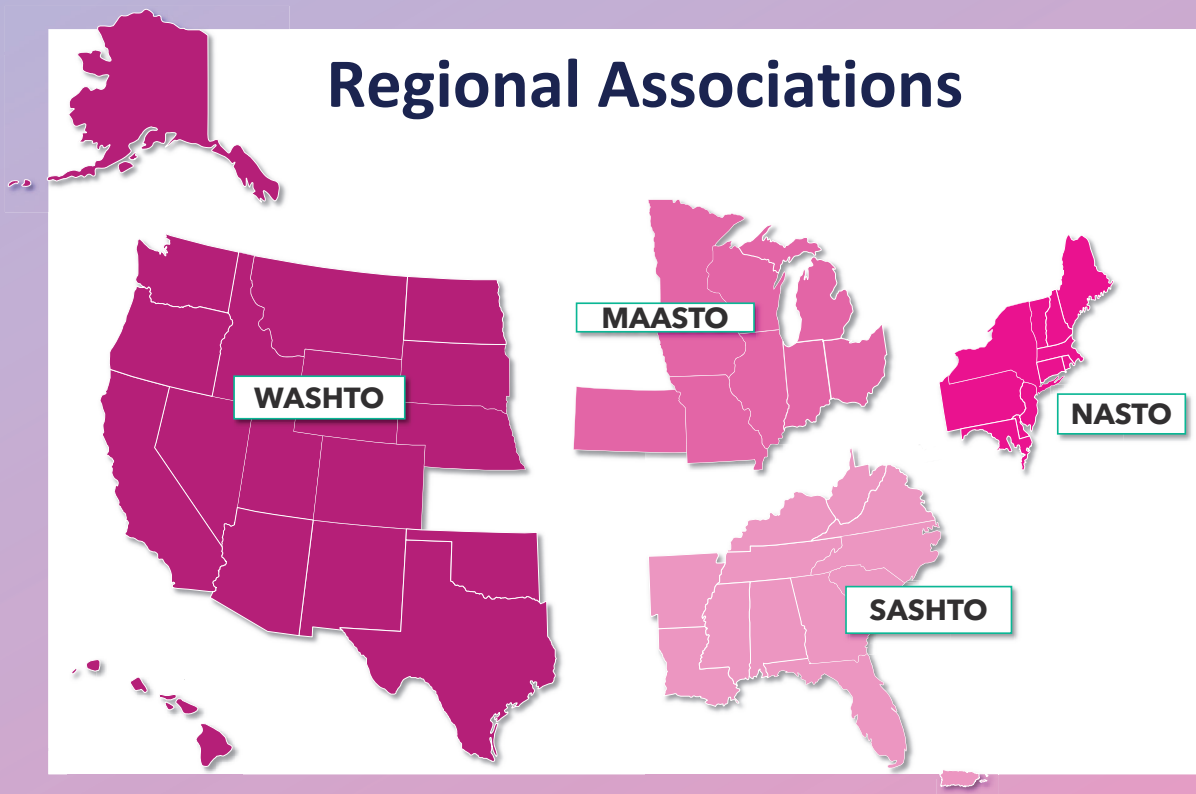


- Nonprofit association
- Founded in 1914
- Members include:
  - Transportation departments of the 50 states, the District of Columbia, and Puerto Rico
  - 50+ Associate Members from Federal, State, and Local agencies and other countries
- Covers *all* modes: Aviation, Rail, Highways, Transit, Water, and Active Transportation

AASHTO

American Association of State Highway and Transportation Officials

Regional Associations



AASHTO's Strategic Plan 2021-2026

Vision:

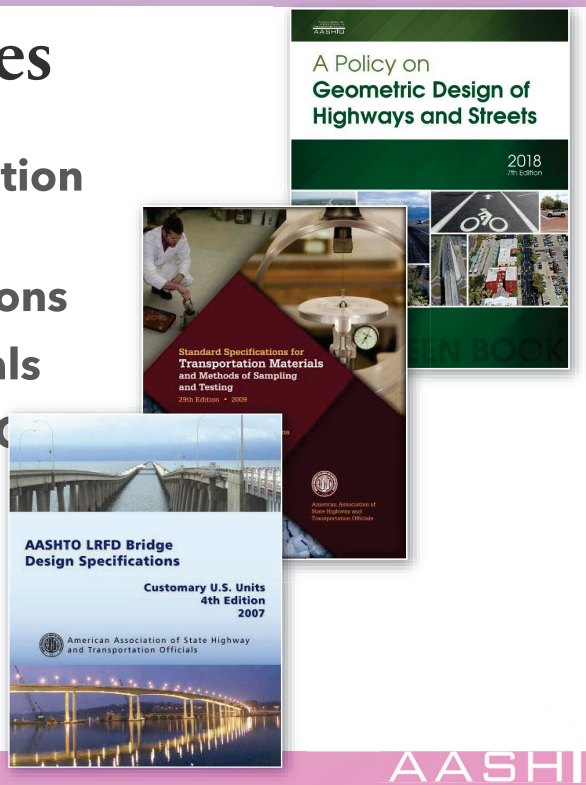
Providing improved quality of life through leadership in transportation

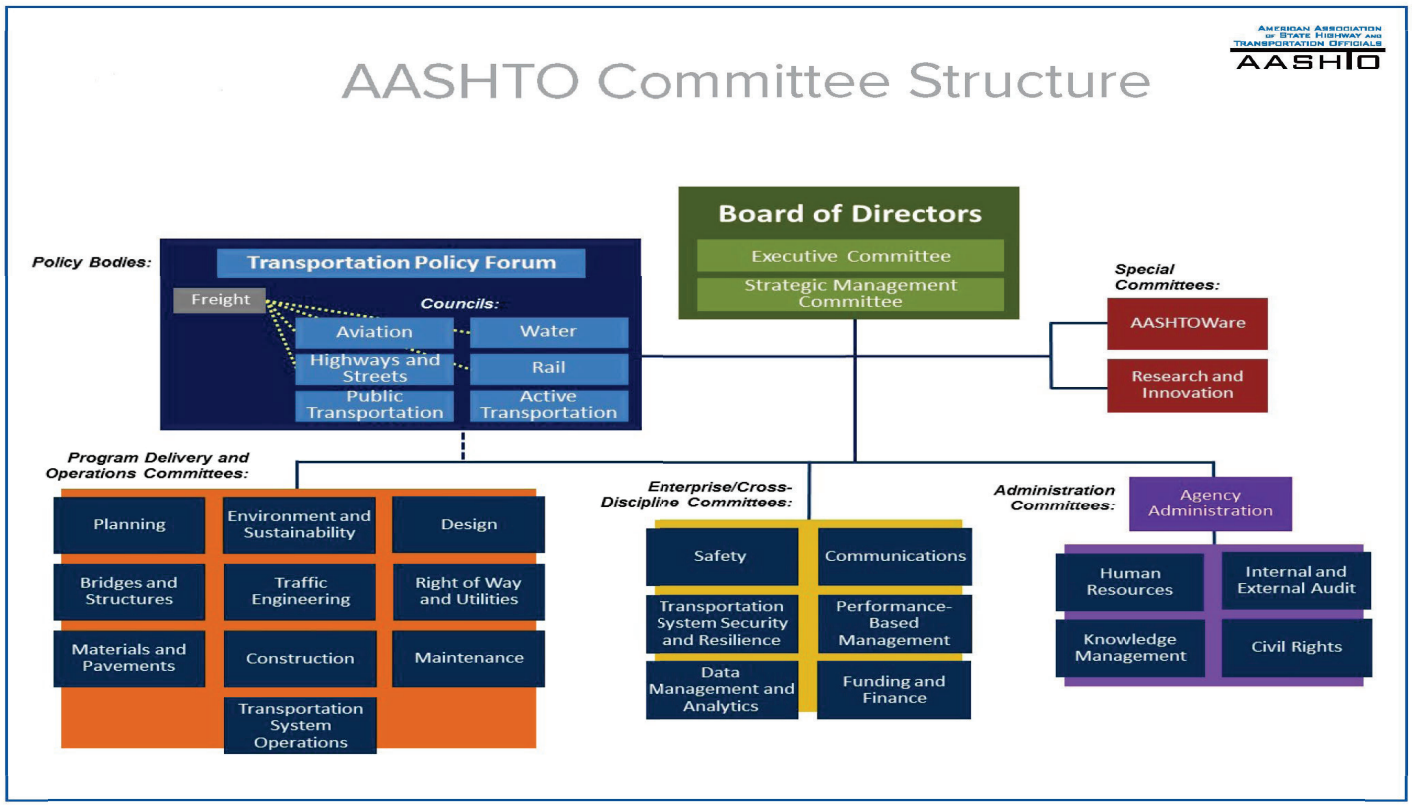
Mission:

Supporting State DOTs to connect America with the transportation system of today and tomorrow

Range of Committee Roles

- **Policy development and interpretation**
- **Development and maintenance of technical standards and specifications**
- **Production of guidance and manuals**
- **Provision of services to the state DO**
- **Dissemination of information**
- **Professional development**





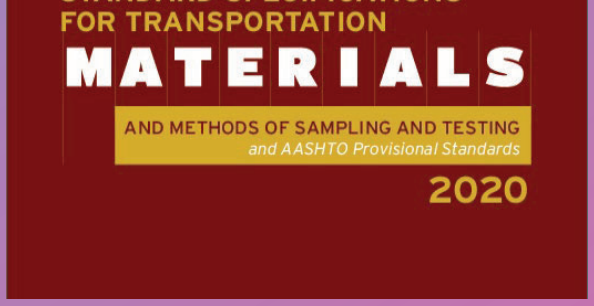
AASHTO's Technical Role

- **20 Technical Service Programs -- pooled-fund programs to deliver services**
  - **Software development (AASHTOWare)**
  - **Laboratory and product assessments (AASHTO re:source, National Transportation Product Evaluation Program)**
  - **Training (TC3), Innovation (A.I.I.) Preservation, Transit, Environment, Rail, Fleet Management**
  - **Workforce Development (TRAC/Rides)**
- **2 Centers of Excellence – Environment and Operations (NOCoE)**

Resources

- AASHTO Journal: AASHTOJournal.org
- Daily Transportation Update: dailyupdate.transportation.org
- AASHTO Store: store.transportation.org
- Social Media
  - Twitter: @aashtospeaks
  - Facebook: facebook.com/AASHTOspeaks
  - LinkedIn: linkedin.com/company/AA
  - Instagram: @aashtospeaks

COMP



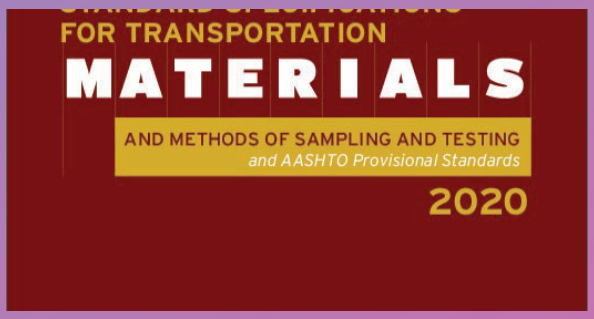
Committee on Materials and Pavements

Total Standards – 580+

Steering Committee

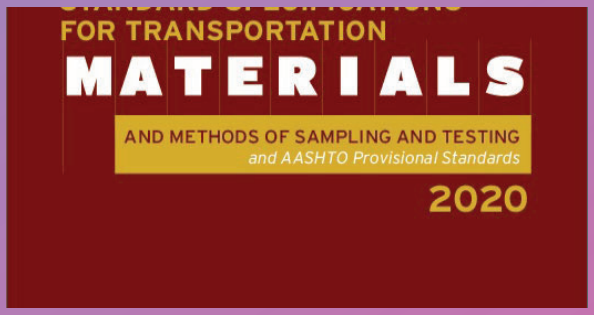
21 Technical Subcommittees in 5 Divisions

COMP 5 Divisions



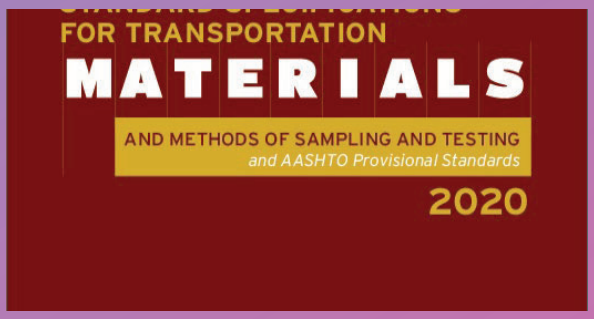
1 - Soils and Aggregates
2 - Asphalt
3 - Cement and Concrete
4 - Miscellaneous - Pipe, Markers, Bearings, Geo
5 - Pavement, Environmental and Quality

COMP TS – Div 1



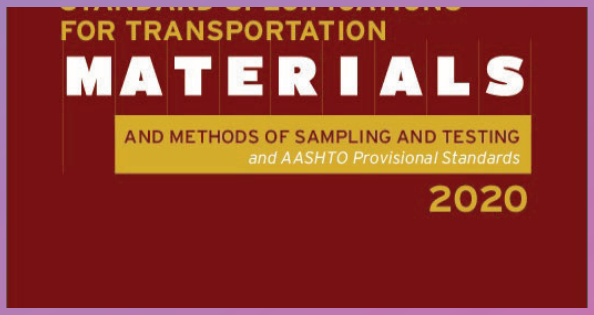
Technical Subcommittee (TS) 1a – Soil and Unbound Recycled Materials
TS 1b – Geotechnical Exploration, Instrumentation, Stabilization and Field Testing
TS 1c – Aggregates

COMP TS – Div 2



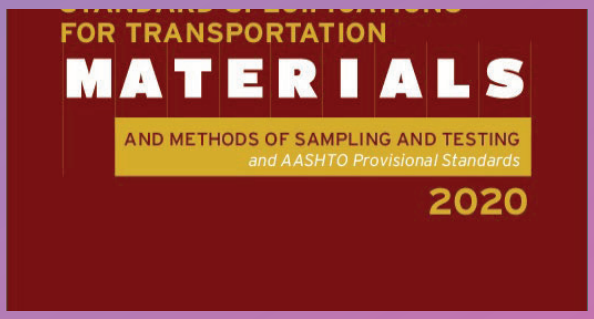
TS 2a – Emulsified Asphalts
TS 2b – Liquid Asphalt
TS 2c – Asphalt-Aggregate Mixtures
TS 2d – Proportioning of Asphalt-Aggregate Mixtures

COMP TS – Div 3



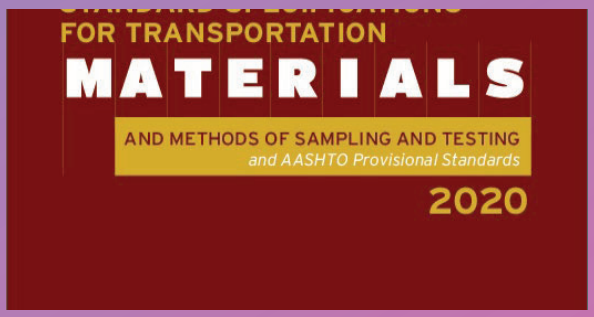
TS 3a – Cement, Lime, and Concrete Materials
TS 3b – Fresh Concrete
TS 3c – Hardened Concrete

COMP TS – Div 4



TS 4a – Concrete Drainage Structures
TS 4b – Flexible and Metallic Pipe
TS 4c – Markings and Coatings
TS 4d – Safety Devices
TS 4e – Joints and Bearings
TSe 4f – Metals
TS 4g – Geosynthetics and Erosion Control Products

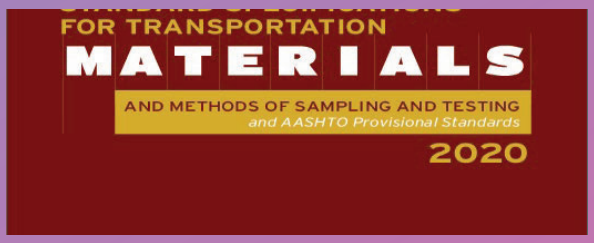
COMP TS – Div 5



TS 5a – Pavement Measurement and Performance Measures
TS 5b – Bridge and Pavement Preservation
TS 5c – Quality Assurance and Environmental
TS 5d – Pavement Design

AASHTO re:source Administrative Task Group

COMP Standard Types

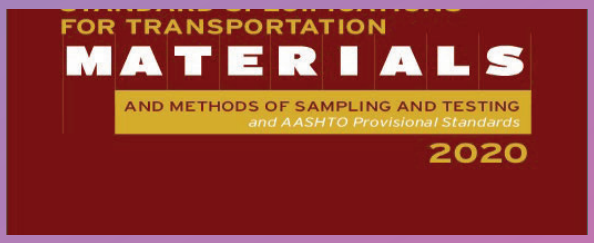


M - Specifications are an explicit set of requirements to be satisfied by a material, product or system.

R - Recommended Practices are a definitive set of instructions for performing specific operations (such as sampling, collection, or inspection) that do not produce a test result.

T - Test method is a definitive procedure (such as identification, measurement or evaluation of properties) that produces a test result.

COMP Provisional Standard Types



Provisional Standards – 1993 – To get Standards into the hands of those that will use them.

MP – Material Provisional

PP – Recommended Practice Provisional

TP – Test Provisional

2022 Overview

Temp Measuring Devices Enforcement

Not yet!

2023 Overview

Revised 112 Standards with 114 Ballot Items

New Standards – 3

AASHTO 2023 – HM-43

Ballots must Pass TS and COMP Ballot to be published

All Ballots have been returned

All Passed except one of the R 18 ballots

R 18 – Quality Man Systems

Concern over requirements and who could perform them.

AASHTO R18

2023 3a Cement - Passed

M 85 - Portland Cement

M 240 - Blended Cement

Remove special property designations for MH, LH, and Type IV cement, and replace with an option for purchaser to require C1702 heat of hydration

2023 3a Cement - Passed

M 240 – Blended Cements

M327 - Processing Additions

- Remove T 107 Autoclave Requirements

2023 3b Fresh Concrete - Passed

M 194 – Chemical Admixtures for Concrete

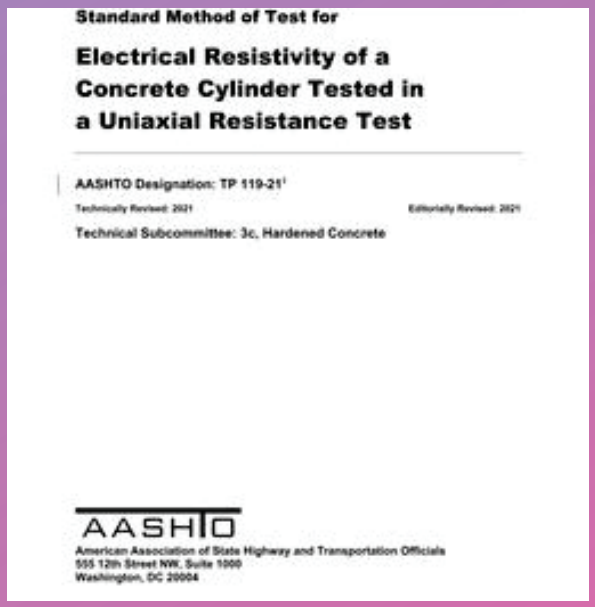
Allow Type IL Cement

Updates to ASTM Equivalency mostly for clarifications

2023 3c Hardened Concrete - Passed

TP 119 – Electrical Resistivity of a Concrete Cylinder Testing in a Uniaxial Resistance Test

Now a Full Standard! Now T 402!



Standard Method of Test for

Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test

AASHTO Designation: TP 119-21[1]

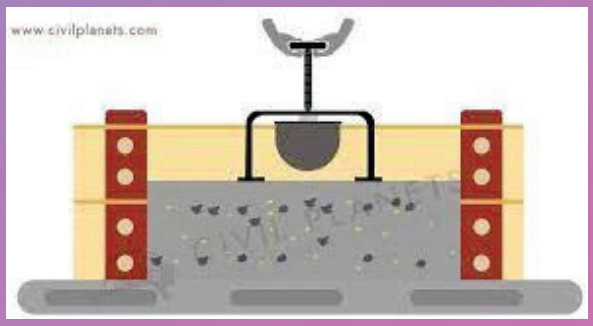
Technically Revised: 2021 Editorially Revised: 2021

Technical Subcommittee: 3c, Hardened Concrete

AASHTO

American Association of State Highway and Transportation Officials
555 12th Street NW, Suite 1000
Washington, DC 20004

2023 3c Hardened Concrete - Passed



TP 129 – Vibrating Kelly Ball (Vkelly) Penetration in Fresh Portland Cement Concrete

Now a Full Standard!! Now T 403!!

2024 3a Cement

<u>TF 09-01 – Task Force on Harmonization of Cement Standards</u>

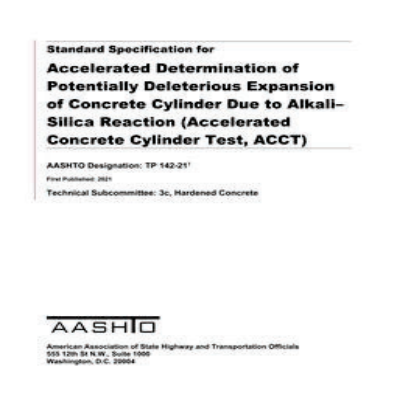
M 85 – Portland Cement

M 240 – Blended Cements

M 327 – Process Additions

TS Spring Ballot

2024 3c Hardened Concrete


Standard Specification for

Accelerated Determination of Potentially Deleterious Expansion of Concrete Cylinder Due to Alkali–Silica Reaction (Accelerated Concrete Cylinder Test, ACCT)

AASHTO Designation: TP 142-21[1]

First Published: 2021

Technical Subcommittee: 3c, Hardened Concrete

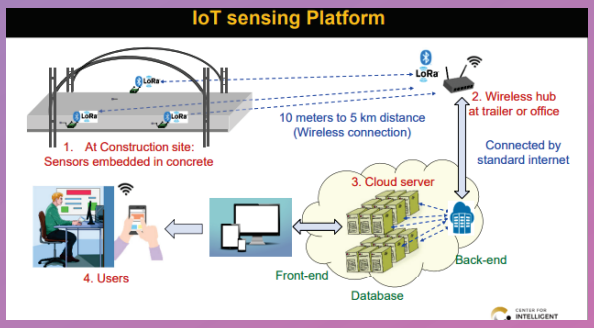
AASHTO

American Association of State Highway and Transportation Officials
555 12th St N.W., Suite 1000
Washington, D.C. 20004

TP 142 – ACCT for Alkali-Silica Reactivity

Spring TS Ballot from previous reconfirmation ballot comments

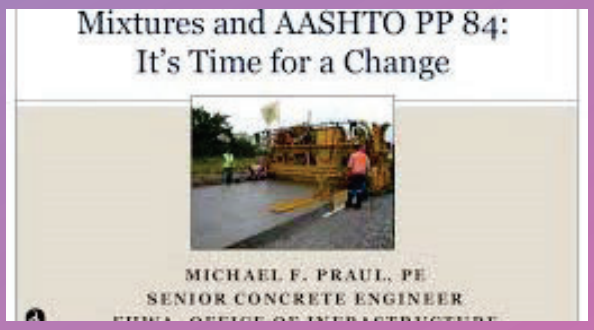
New T XXX-25?



Dr. Luna Lu (NCC 2022 Presentation) – Indiana DOT – In-Situ Strength of Concrete using Sensor Technology (not Maturity Curve)

Spring TS Ballot possibly

R 101 (was PP 84)



R 101 – Developing Performance Engineered Concrete Pavement Mixtures

Spring TS Ballot possibly

CP Tech Center

National Concrete Pavement Technology Center

Tech Center

Uniting agencies, industry, and researchers to advance concrete pavement technology

PEM Work

Precision and Bias

T 395 - Characterization of the Air-Void System of Freshly Mixed Concrete by the Sequential Pressure Method – Performed work in Iowa in March 2023!!

T 396 - Evaluating the Workability of Slip Form Concrete Paving with the Box Test

TP 129 (now T 403) - Vibrating Kelly Ball (V-Kelly) Penetration in Fresh Portland Cement Concrete

TP 119 (now T 402) - Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test – Samples should be sent out in April 2023.

T 358 - Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration – Samples should be sent out in April 2023.

NCHRP Research

NCHRP NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

(Program – QR Code above)

Established June 19, 1962 by AASHTO, TRB and FHWA

State DOT Driven Research Program

5.5% of State Research Funds

2014-2018 - $42 million

(QR Code -Timeline Chart) ----→

FY 23 - 3 Research Projects Related to Materials

C-06: Impact of Flooding and Inundation on the Resiliency of Pavements

$650,000 for 24 months

D-04: Variability in Pavement Materials and Construction

$500,000 for 30 months

D-18: Quality Assurance and Sustainability

$350,000 for 24 months

NCHRP FY 24 Research and Others

(Meeting this week)

5 submitted by COMP

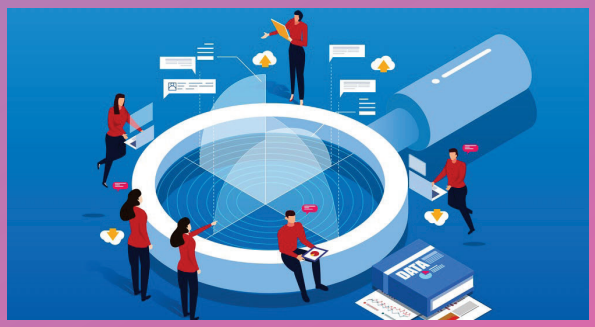
TS 3a – Alternate SCM's for Concrete

NCHRP FY 25

Due November 1 2023

Submitters – State DOT, FHWA and AASHTO Committees

NCC Ideas?



NCHRP Synthesis Program
$50k/project - $1 million/year

- **Document current highway practice in state DOTs;**
- **Not best practice; it is not a research project or a guidebook;**
- **An area of practice that is widespread and of general interest to state DOTs;**
- **Be timely and critical for expediting delivery, improving quality, or lowering cost**

New topics will be selected in May 2023

NCHRP Synthesis Projects Completed

20-05/06-05 - Rapid Setting Materials for Repairing Concrete

20-05/07-01- Consolidation of Concrete for Pavements, Bridge Decks and Overlays

20-05/12-04 – Resealing Joints and Cracks in Rigid and Flexible Pavements

New Release! NCHRP 598 - Curing Practices for Concrete Pavements

Many others in many different areas

Current Synthesis Projects..and More

20-05/53-19 – State DOT Product Evaluation Practices

54-17 – State DOT Innovation Programs and Practices

3 Recently Submitted Synthesis Projects (Endorsed by COMP)

Testing Personnel Certifications

AASHTOWare Pavement ME Design Implementation Status

Practices to Enhance Resiliency of Culverts and Buried Drainage Structures

Why do we care about AASHTO and NCHRP?

Products Produced

Financial Leverage

Why do we care about AASHTO and NCHRP (cont)?

Input -

Members – State DOT - 1 Voting and 2 Non Voting per COMP and TSs

- Friends – Industry and Academia

For you.

Learning Opportunities

Research Opportunities

Membership Opportunities

Thank you so much for your time!

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- Cell 401-245-1327