

Accelerating Innovation & Every Day Counts

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U.S. Department of Transportation
Federal Highway Administration



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A **State-based model** that identifies & rapidly deploys
proven, yet underutilized innovations

*that make our transportation system adaptable, sustainable,
 equitable and safer for all*

How EDC Works



Stakeholder collaboration to identify
 and select innovations

Multidisciplinary Deployment Teams to
 provide technical assistance to deploy
 innovations

- Share case studies
- Provide Training
- Hold Webinars and workshops
- Demonstrations and peer exchanges
- Create Guidance and specifications

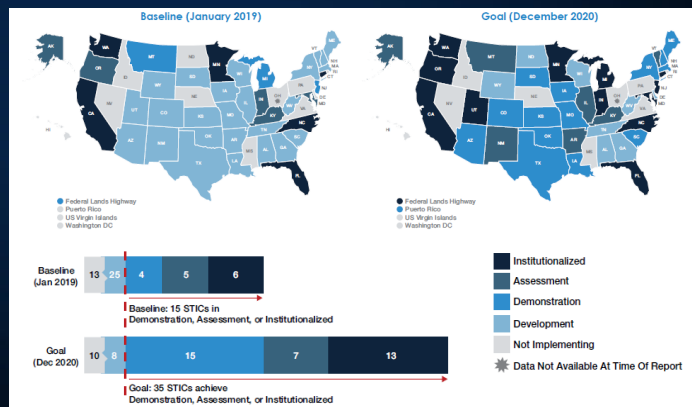
Stakeholder Engagement




How EDC Works: Setting Goals & Deployment

BASELINE REPORT: States select innovations for deployment and establish goals for level of implementation

DEPLOYMENT: States create an implementation plan, and the Innovation Deployment Team provides technical assistance



How EDC Works: Reporting




On-Ramp to Innovator
Every Day Counts
EDC News Weekly Newsletter
INNOVATOR

Innovation of the Month:
Advanced Geotechnical Methods in Exploration (A-GAME)

Last year, we looked at how the Arkansas DOT successfully used geophysical methods to address slope instability along a roadway. Another proven, but underused exploration method being promoted by Caltrans is cone penetration testing (CPT). CPT provides geotechnical information with high measurement frequency for greater resolution in soil changes and high quality data with minimal user dependency and cost. CPT is commonly used for site characterization of soils for foundation design, settlement analysis, slope

FHWA monitors and reports on state-of-the-practice and accomplishments over 2-year cycle:

- Periodic Progress Reports
- Final Report of Accomplishments
- EDC News (e-newsletter)
- Innovator (bi-monthly e-publication)
- Videos



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Market-Ready, Proven...Underutilized

Every State advanced **19 or more of the 52** innovations promoted in the first six EDC rounds, and some states **adopted 40 or more innovations.**



Round 1 (2011-2012)	Round 2 (2013-2014)	Round 3 (2015-2016)	Round 4 (2017-2018)	Round 5 (2019-2020)	Round 6 (2021-2022)	Round 7 (2023-2024)
14 Innovations	13 Innovations	12 Innovations	11 Innovations	10 Innovations	7 Innovations	7 Innovations



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**EDC-7
Innovations**

- Nighttime Visibility for Safety
- Next Generation TIM: Technology for Saving Lives
- Integrating GHG Assessment and Reduction Targets in Transportation Planning
- Enhancing Performance with Internally Cured Concrete (EPIC²)
- EPDs for Sustainable Project Delivery
- Rethinking DBE for Design-Build
- Strategic Workforce Development



**SUSTAINABLE
Infrastructure**

Integrating GHG Assessment & Reduction Targets In Transportation Planning

EPDs For Sustainable Project Delivery

Enhancing Performance With Internally Cured Concrete (EPIC²)



EPD
ENVIRONMENTAL PRODUCT DECLARATION

Environmental Impacts

- Global Warming Potential
- Ozone Depletion Potential
- Smog Potential
- Acidification Potential

Environmental Impacts

- Global Warming Potential

Source: FHWA

EPDS FOR SUSTAINABLE PROJECT DELIVERY

- Sustainable Procurement
- Sustainable Design
- Sustainable Asset Management

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EDC Implementation Stages

Innovation Stage	What Does This Look Like?
Institutionalized	EPDs are collected as part of the project development and delivery processes and procedures.
Assessment	EPDs created, transmitted, and collected to build database; and data quality, data integrity, and data integration being evaluated and archived.
Demonstration	Ready to pilot and/or already has pilot projects under contract to collect EPDs
Development	Starting review of guidance and best practices, building support with partners and stakeholders, and developing an implementation process.
Not Implemented	Not planning to implement the innovation of EPDs for Sustainable Project Delivery.

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<http://www.fhwa.dot.gov/pavement/sustainability>



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Photos: FHWA

ENHANCING PERFORMANCE WITH INTERNALLY CURED CONCRETE (EPIC²)

- Versatility
- Durability
- Cost Savings
- Embodied Carbon Reduction

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FHWA Team

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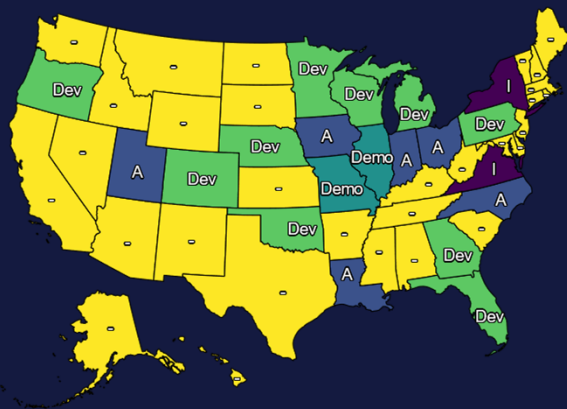
Reggie Holt

Office of Bridges and Structures

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Resource Center

The Opportunity



Source: FHWA

Estimated Baseline
Deployment Level

- No Data (-)
- Development
- Demonstration
- Assessment
- Institutionalized

Lead States:

- New York
- Louisiana

Western Federal Lands:
Institutionalized

Eastern Federal Lands:
Demonstration

Central Federal Lands:
Development

Keep Informed

Sign up for EDC News and Innovator



Get on your mobile device! Text "FHWA Innovation" to 468311

<https://www.fhwa.dot.gov/innovation/>



MCTC >>>

A Few Words From the MCTC Program



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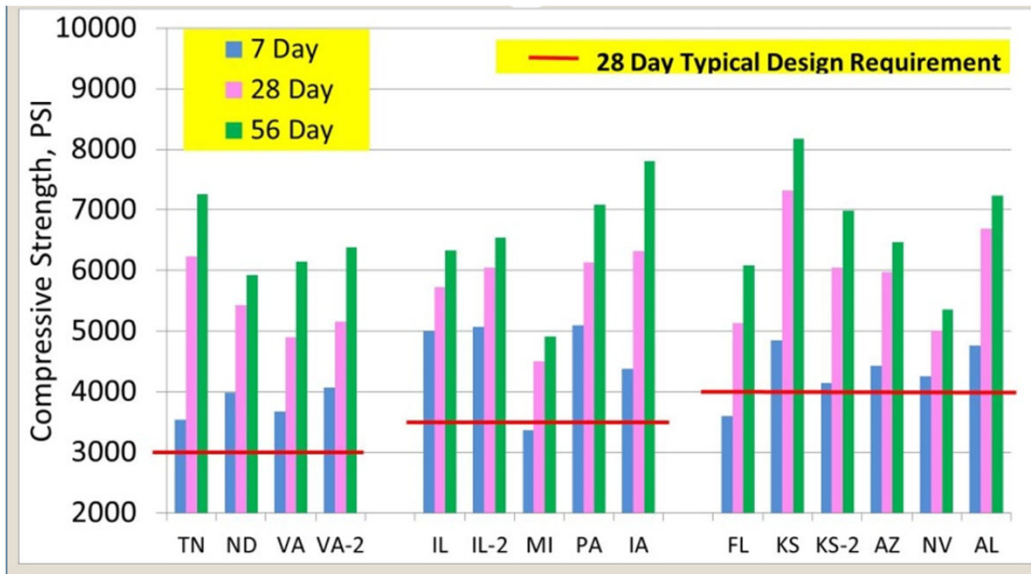
New Mobile Concrete Technology Center on the way!!!

- Center section 5' bump out
- Interior demonstration stations
- Increased accessibility
- 12-15 months until expected delivery



56-day Testing

MCTC Data



Concrete Acceptance Practices

➤ How do we accept concrete?

- Slump
- Strength
- Total air
- Temperature
- Thickness
- Ride



➤ How do we adjust price?

- Strength



Lower Right Image: Pixabay

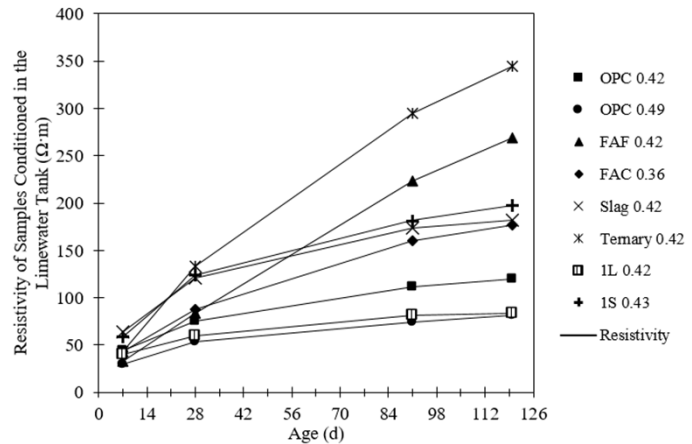
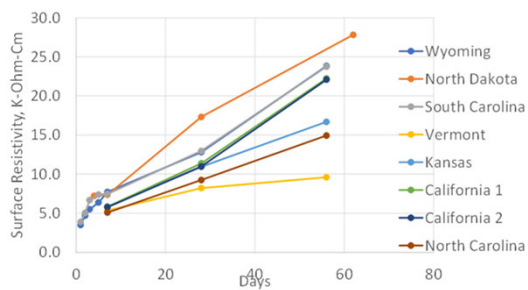


The Great 28

- Wrong time
- Wrong cementitious system
- Implications
 - Cost
 - Durability
 - Deck Cracking



Resistivity Data (FHWA MCTC and TFHRC)



Correlating Durability Indicators to Resistivity and Formation Factor of Concrete Materials. Transportation Research Record, 2023. (Hesel, Montanari, Spragg, de la Varga, Saladi)



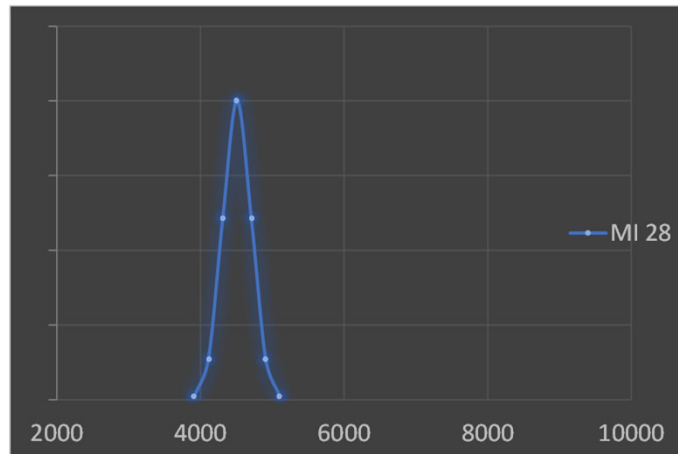
New specification



PWL For Strength

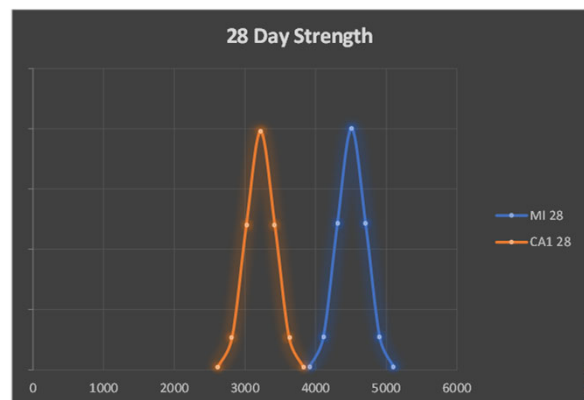
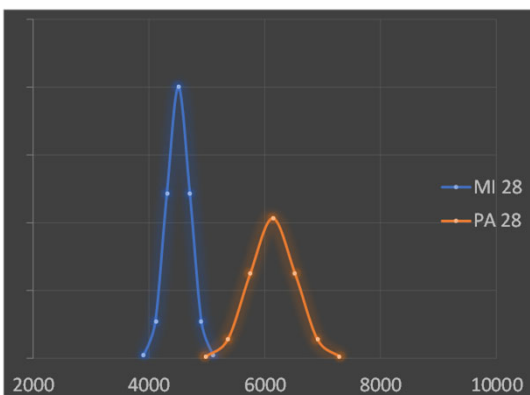
PWL for Strength Acceptance

- Michigan
- 28 Day strength requirement: 3500 psi



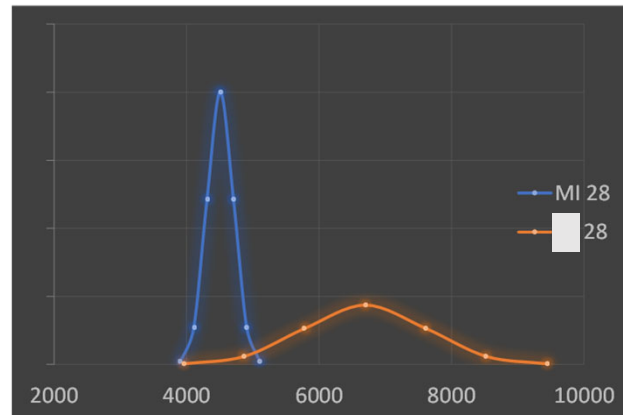
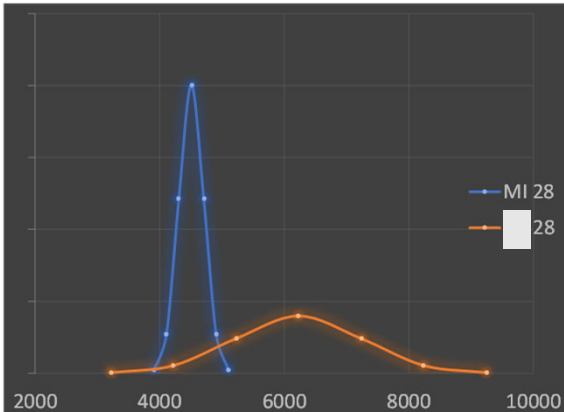
States with PWL Requirements

- 28 Day Strengths
- Lower Variability
- Lower Average Strength



States Without PWL requirements

- 28 Day Strengths
- Higher Variability
- Higher Average Strength



Questions?



Image Pixabay

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