Customer Services

The MCT accomplishes its goal of technology deployment through project participation, demonstrations, training, and equipment loans. In an effort to reach a maximum number of transportation personnel with significant project findings, evaluation results, and innovative concrete technologies, the MCT provides project reports and publishes papers in journals and symposia proceedings. Presentations at industry conferences and showcases, such as ACI, PCI, ACPA, and TRB are utilized to further the transfer of these new technologies. MCT staff can also provide speakers, put on specialized workshops, and provide technical assistance.

QA Workshop: Following the field visit, the MCT offers a two-day workshop to states and industry. The workshop covers concrete materials, construction, emerging technologies, and the benefits of having a good Quality Assurance Program, including how it can be used to improve concrete performance.

Contacts

If you are interested in one or more of the services provided by the Mobile Concrete Trailer, you can contact your FHWA Division Office, or the MCT staff directly:

- Michael F. Praul P.E., Senior Concrete Engineer, FHWA, (207) 512-4917.
- James D. Grove P.E., Senior Project Engineer, Consultant, (515) 294-5988.

U.S. Department of Transportation
Federal Highway Administration
Office of Preconstruction,
Construction, and Pavements
1200 New Jersey Avenue, SE
Washington, DC 20590

Publication No. FHWA-HIF-17-041

MOBILE CONCRETE TRAILER (MCT)

Transferring Advanced Concrete Technology To Our Partners
Mission

Federal Highway Administration’s Mobile Concrete Trailer introduces Federal, State, and local transportation personnel to the state-of-the-art concrete technology in materials selection, mixture design, field and laboratory testing, and pavement evaluation. In an effort to bridge the gap between research and the field, MCT accomplishes this technology transfer in several ways:

- By conducting on-site field testing at construction projects to supplement State Highway Agency (SHA) testing and to demonstrate new innovative equipment and construction practices.
- By training SHA personnel through “hands-on” experience with new technologies.
- By showcasing equipment and technology at industry conferences, symposia, and SHA facilities to familiarize transportation personnel with state-of-the-art technology.
- By providing an equipment loan program where SHA and industry personnel can borrow equipment for various lengths of time after having been trained in their use by MCT staff.

The current focus of the MCT includes assisting SHA’s in implementation of AASHTO PP 84, Quality Assurance, Performance-Related Specifications (PRS), nondestructive testing, AASHTO Pavement-ME, long life pavements, durability, and sustainability. An active partnership with agencies, manufacturers, contractors, industry associations, and academia is central to all of the MCT’s activities.

Technology

Field demonstrations are performed using a fully-equipped mobile concrete testing trailer that can perform a wide range of concrete tests. These include conventional destructive tests as well as new and innovative nondestructive and durability related tests.

Examples of these capabilities are:

Conventional QC Tests:
- Temperature, slump, air content, unit weight
- Strength (compression, flexural, splitting tensile)
- Elastic Modulus and Poisson’s Ratio

Nondestructive and In Situ Tests:
- Box Test
- Match Curing
- Maturity Testing
- Pull Out Strength
- Pavement Thickness
- Dowel Bar Alignment
- Tensile Bond Strength
- Ultrasonic Tomography
- Capillary Pressure Sensing System
- Hand held Ground Penetrating Radar

Durability Related Tests:
- Calorimetry
- Super Air Meter
- Surface Resistivity
- HIPERPAV Software
- Microwave Water Content
- Aggregate Gradation Software
- Rapid Chloride Penetrability Test
- Coefficient of Thermal Expansion

The Super Air Meter provides an indication of the size and distribution of air voids in fresh concrete.

Electrical resistivity measurement of concrete.

Capillary Pressure Sensing System evaluates the effectiveness of different curing scenarios.

Setup for nondestructive pavement thickness measurement in Iowa.

MIT Scan 2 used to nondestructively measure dowel bar alignment.

The Box Test for measuring workability of slip-formed paving mixtures.

T2 used to nondestructively measure pavement thickness.