



Florida Department of Transportation Research

Cost and Quality Effectiveness of Material and Non-Material Models in Contractor Quality Control System

BD550-13

The Florida Department of Transportation (FDOT) coordinates a contractor quality control (CQC) program to ensure that contractors have quality control measures in place before beginning an FDOT project. As part of the program, FDOT reviews the contractor's QC plan, including specific approaches to construction of a project such as earthwork, concrete, and asphalt mix. The program also examines the contractor's QC sampling and testing of materials to verify compliance with specifications.

FDOT uses two verification testing (VT) models in its CQC program: the material model and the non-material model. The main difference between the two models is in the verification of CQC testing. In the material model, an external VT materials consultant performs on-site materials testing. For the non-material model, a construction engineering inspection (CEI) team is responsible for testing field materials.

Researchers from the Center for Advanced Transportation Systems Simulation at the University of Central Florida have investigated the cost and quality effectiveness of the two models. Further research is needed to obtain a definitive cost comparison for testing and sampling of materials across all FDOT districts. However, the study found the models offer comparable levels of quality and low risk. These findings will remain true provided VT technicians continue to obtain certification, and the CEI team is able to interpret test results.



Concrete batch test

A survey of FDOT district construction and materials personnel identified five main risk factors that impact the quality of the models: (1) biased sample collection, (2) use of samples that do not meet specifications, (3) faulty testing equipment, (4) inadequate maintenance of testing equipment, and (5) failure to test materials according to standards. FDOT continues to monitor these and other risk factors so corrective intervention can occur quickly if problems arise during testing and verification.

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For more information, visit <http://www.dot.state.fl.us/research-center>