Rock Products Committee
SCOPING DOCUMENT
Portable Skid Tester
November 3, 2015

Task Group

Concrete Task Group
Pavement Preservation Task Group

Problem Process

☐ Annual
☒ Expedited
☐ Emerging Initiative

Title

Portable Skid Tester

Issue/Problem Statement

The California Department of Transportation (the Department) will be transferring the responsibility for quality control (QC) of skid testing to the contractor, with the Department district staff taking on a traditional quality assurance (QA) role. The Department currently uses the California Portable Skid Tester (PST), which has been in use since the late 1950s. This device was built and maintained in-house and is not commercially available. The Department needs to provide plans of PST so that contractors and consultants can build PST units for QC testing.

Background

In the summer of 2009, the Division of Engineering Services set new objectives that focused on areas were efficiency could be improved. One stated objective was to require contractors to perform contract QC testing. The goal was to develop a new performance based specification for contractor-based QC for skid testing measurements on bridge decks.

Both Structure Construction, Pavements, and METS recognized the need to replace the aging PST used for both bridge and roadway surfaces. The inability to manufacture additional machines made responding to project needs almost impossible. Additionally, workload has increased due to projects that involve polyester concrete or methacrylate surfacing of bridge decks. These jobs commonly require skid testing prior to opening the roadway to traffic after each day's production. The Department has limited resources and equipment to perform the necessary contract acceptance testing as required on all construction projects that specify contract acceptance testing per California Test 342. The Department's portable skid testing operations have been hard-pressed to meet contract testing requirements due to the availability of Department personnel, equipment, and operating expense allocations.

METS has designed, built, tested, and obtained a patent for a new portable skid tester. The machine has been assigned a nomenclature of "Friction Coefficient Measuring Device" (FCMD). Once these FCMDs are built and calibrated, they will be deployed to Districts and the FCMD plans (ie. blueprints) will be available to contractors and consultants to purchase.

METS is revising California Test 114 (identified as California Test 114A until full implementation) to reflect the new FCMD and calibration/certification process. All new FCMDs will be inspected, calibrated and certified by METS. This revised test method will be used by METS Office of Roadway Materials and Testing Services (ORMT), Skid Test Branch, for the calibration and certification. Owners of FCMDs will comply with this test method and ensure they are ready for calibration.

METS is revising California Test 342 (identified as California Test 342A until full implementation) to reflect the new FCMDs. This test method will be used for verification of calibration on project sites, and taking coefficient of friction measurements.

Purpose

Because the Department is transitioning to an acceptance role and transferring QC responsibility to the contractor, the purpose is to provide a means for contractors and consultants to fulfill their QC requirement for performing skid testing to ensure coefficient of friction requirements are met.

Objectives/Deliverables

1. To make the FCMD plans available to contractors and consultants
2. Develop and provide training and certification for operators of new FCMD. This is not a normal Department procedure, however because the Department is the only agency that has operational knowledge of use, initial training of new machine operators and owners is required.
3. Revise specifications to include requirements for contractor QC testing of the coefficient of friction and Department acceptance testing requirements.
4. Revise California Test 114 and identify this test method as California Test 114A “Method of Test for Calibration and Certification of the Friction Coefficient Measuring Device.” After the transition period is complete, revise California Test 114A to California Test 114.
5. Revise California Test 342 and identify this test method as California Test 342A “Method of Test for Measuring Friction Coefficient using the Friction Coefficient Measuring Device”. After the transition period is complete, revise California Test 342A to California Test 342.
6. Revised Construction Manual and Bridge Construction Records and Procedures Manual to include contractor QC requirements and Department acceptance criteria.
7. Provide centralized inspection, calibration and certification services at METS for contractors, consultants and Caltrans.

8. Build FCMDs for each District to use for performing quality assurance acceptance testing.

Timeline

1. FCMD plans will be available December 2015.
2. Revised specifications will be ready in March 2016 and will be implement on all projects advertised after July 1, 2016.
3. Training will be provided to contractor, consultant and Caltrans staff on an as-needed basis when FCMDs are in METS for initial certification.
4. Inspection, Calibration and Certification services will be provided on an as need basis.

Benefits

- Provides means for contractor's transition to a QC role
- Provides means for the Department to transition to a acceptance role

Impacts

- Modifications to specifications to transfer QC responsibilities to the Contractor
- Revisions to California Test 114 "Method of Test for Calibration of the California Portable Skid Tester" and Caltrans Test 342 "Method of Test for Surface Skid Resistance with the California Portable Skid Tester"
- Revisions to the Independent Assurance Manual
- Revision to written certification tests
- Revisions to the Construction Manual and Bridge Construction Records and Procedures Manual

Resource Requirements

Task	Caltrans Staff	Person Years
FCMD plans available to contractors and consultants	METS	0.05 PY
Provide Training for operators of new FCMDs	METS	0.15 PY

Task	Caltrans Staff	Person Years
Revise California Test Methods 114 and 342	METS	0.05 PY
Revise Specifications to include contractor QC requirements	Pavement METS Construction Structures Specifications Office Engineer	0.05 PY 0.05 PY 0.10 PY 0.05 PY 0.10 PY
Guidance to be included in a Construction Manual Update Bridge Construction Records and Procedures Manual	Construction Office of Structures Construction	0.10 PY 0.05 PY
	Total:	0.75 PY

Impediments to Completion of Deliverables

None

Recommendation and Approval

This scoping document for Portable Skid Tester was prepared by Concrete Task Group and Pavement Preservation Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

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