

Colorado Procedure 74-17

Standard Practice for

Operating Inertial Profilers and Evaluating Pavement Profiles

(This procedure modifies AASHTO R 57-14. The AASHTO R 57-14 is to be used in conjunction with this procedure.)

1. SCOPE

1.1 This test method describes the procedures for operating and verifying the calibration of a profiler. This method also describes the evaluation procedures for the profiles that are generated to determine pay adjustments.

1.2 This test method is identical to AASHTO R 57 with the following exceptions.

2. REFERENCED DOCUMENTS

Add the following to Section 2:

2.4 *Colorado Procedures:*

CP 78 Certification of High Speed Profilers.

2.5 *Other Referenced Documents:*

FHWA's ProVAL Help File. ProVAL can be downloaded at <http://www.roadprofile.com>. ProVAL will be used for determining localized roughness.

5. EQUIPMENT

Delete Subsections 5.1, 5.3.1.1 and 5.3.1.1.1 and replace each with the following:

5.1 The inertial profiler shall meet the equipment requirements of CP 78. The inertial profiler shall be currently certified in accordance with CP 78.

5.3.1.1. Distance Calibration

5.3.1.1.1. The distance calibration shall be 1056 feet long and shall be on a relatively flat, straight section of pavement.

Add the following to Section 5:

5.4 The operator of the profiling equipment shall have a Current LABCAT Level S (Smoothness) certification.

6. TEST PROCEDURE

Delete Steps 4 & 6 of Table 1 and replace with the following:

Step 4. Collect measurements in the direction of traffic. A lane will be tested at least one run. A lane may be retested only if the triggering system fails. The Contractor shall use automated triggering for the start and stop locations, and for the areas to be excluded. The locations of the triggers shall be painted on the pavement so that the Department's profiler can use the same trigger locations when the Contractor's profile data is verified.

Step 6. Immediately after data collection is complete, provide the Project Engineer with a CD or thumb drive with the data that was collected and a Log Sheet of the runs performed on that day. Data shall be submitted in the manufacturer's native file format and a format readable by ProVAL. The CD or thumb drive will not be returned.

Add the following to Section 6:

6.1.1 The names of the files shall be in the following format:

PPPPP_HHHHHH_DDDDD_LLL_MMM
_TTT

Where:

P is the 5 digit Project Code, formally known as the project subaccount number

H is the highway number. Example I-25, SH-287, or US-40.

D is the official highway direction, not the apparent direction of travel. Odd

highway numbers are north and south, and even highway number are east and west.

L is the lane number.

M is additional information to identify lane. This is useful if a lane is tested in sections to identify each section.

T is "initial" or "final" test.

6.1.2 Files submitted not following the above file naming convention may be rejected and require retesting if the location of the run cannot be determined.

6.1.3 Initial and Final runs shall have the same file name other than the initial or final designation.

6.5. A log sheet shall be submitted with the electronic data to the Project. A minimum of one log sheet per day shall be submitted. The log sheet shall contain the following for each run:

- Project Number
- Project Code (sub-account number, currently Contract ID)
- Region
- Profiler Certification Identification Number
- Profiler Operator's name
- Highway number
- Pavement type (PCCP or HMA)
- Smoothness Category
- Date Runs were performed on; designate runs as "Initial" or "Final"
- Contact information and signature of CDOT representative on site during performance of HSP runs
- Location and description of 1056 LF Distance Calibration site
- Ambient temperature on site at start and end of HSP runs
- Lane number (Lanes are numbered from the left to the right in the direction of travel)
- Direction of travel
- File names
- Run Number (1st, 2nd or 3rd)
- Time each run was completed
- Location of exclusions (In miles from the beginning of the test)
- Description of each trigger.

A sample HSP Log Sheet is attached at the end of this procedure. An electronic copy of the

sample HSP Log Sheet in MS Excel or .pdf format may be obtained by making contact through dot_profiles@state.co.us.

8. DATA ANALYSIS

8.1 The Department will analyze the data with the profiler manufacturer's software or the latest version of ProVAL.

Sample HSP Log Sheet

| Contract ID | | Project Number | | Region | Smoothness Category I II III IV | Pavement Type PCCP HMA/SMA |
|-----------------------------|----------|-----------------------|-----------|--|------------------------------------|-------------------------------|
| Project Contact | | Contact No. or E-Mail | | Ambient Air Temp at Start: _____ at End _____ | | |
| Tested By | | Date of HSP Runs | | 1056 LF Calibration Location: _____ | | |
| Phone No. | | _____ | | Set DCF (in) to 0.2 = _____ Calibration Speed: _____ MPH | | |
| E-Mail | | Initial or Final | | Vehicle Licence No. _____ State: _____ | | |
| CDOT Representative On-Site | | Signed: _____ | | Profiling Equipment Mfct/Model: _____ | | |
| Name: _____ | | Date: _____ | | Certification No. _____ Cert Date: _____ | | |
| | | | | CDOT Verification for: _____ | | |
| Hwy No. | Lane No. | Direction | File Ext. | Time | Comments | |
| | | | Run 1: P | | | |
| | | | Run 2: P | | | |
| | | | Run 3: P | | | |
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