



U.S. Department of Transportation
Federal Highway Administration

PRODUCT BRIEF

Working With Your FWD Calibration Center Videotape

Introduction

Highway agencies routinely test and evaluate the condition of pavements to determine what, if any, maintenance or rehabilitation strategies are needed. The falling-weight deflectometer (FWD) is crucial to those monitoring activities. Data obtained from the FWD tell the highway agency how strong a pavement is, which is a key factor in evaluating pavement condition and performance and in designing new pavements or overlays.

But like all sophisticated tools, the FWD must be properly calibrated and used, or else the deflection measurements may be inaccurate and thus lead to inappropriate remedies. To address this issue, the Strategic Highway Research Program and the Long Term Pavement Performance (LTPP) program developed a set of standardized FWD calibration procedures and also set up four regional FWD calibration centers. The procedures have been adopted as an American Association of State Highway and Transportation Officials (AASHTO) provisional standard, "Practice for Calibrating the Load Cell and Deflection Sensors for a Falling Weight Deflectometer."

To help highway agencies better understand FWD calibration

procedures, LTPP produced a videotape in 1997 that explains the how and why of LTPP's FWD calibration procedures.

FWD Videotape

The videotape, entitled "Working With Your FWD Calibration Center," addresses key questions about FWD calibration for FWD operators, highway administrators, and engineers.

The 15-minute videotape provides a step-by-step guide for:

- *Relative Calibration*— A routine calibration procedure that analyzes whether an FWD's sensors are providing consistent data and verifies the integrity of the sensors. This procedure can be done anywhere and should be performed on a regular basis.
- *Reference Calibration*— A procedure that checks an FWD against an independent reference traceable to National Institute of Standards and Technology benchmarks. This procedure can only be done at properly equipped calibration

centers and should be performed at least once a year.

Who Can Benefit From the FWD Videotape?

FWD operators will benefit most directly from the videotape as it provides a step-by-step guide on how to get ready to effectively use the services of an FWD calibration center. In addition, the videotape can also help familiarize highway administrators and engineers with FWDs, the calibration process, and the importance of maintaining calibrated FWD equipment.

Since the mid-1980s, the FWD has become an indispensable tool for pavement engineers. Engineers use the information provided by FWDs to predict a pavement's expected life and then decide how best to maintain that pavement. Since the FWD is so crucial to the design and maintenance of pavements, it is essential for it to be calibrated on a regular basis. The FWD videotape is a tool to help highway agencies maintain calibrated FWDs.

For more information, or to order the videotape, contact Katherine Petros at (415) 744-0652 or e-mail katherine.petros@fhwa.dot.gov.

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