



FWD Calibration Center Operator Certification Program

**Program Requirements
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AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHTO

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1. Introduction

The American Association of State and Highway Transportation Officials (AASHTO) re:source (formerly AMRL) was established in 1965, under the sponsorship of the AASHTO Committee on Materials and Pavements (formerly the Highway Subcommittee on Materials). AASHTO is an international leader in setting technical standards for all phases of highway system development. AASHTO represents all fifty states' departments of transportation, as well as Washington D.C. and Puerto Rico, and serves as a liaison between the state departments of transportation and the federal government. AASHTO re:source is a technical service program within AASHTO. AASHTO re:source's primary vision is to lead a quality revolution within the construction materials testing and inspection industry.

The Falling Weight Deflectometer (FWD) calibration procedure ensures that pavement analysis and deflection data is accurate and repeatable. The calibration system was developed in the early 1990s as part of the Strategic Highway Research Program's (SHRP) Long Term Pavement Performance (LTPP) program. Calibration center operator certification was initiated in 2004 as part of a pooled fund study by the Federal Highway Administration (FHWA). The Cornell Local Roads Program at Cornell University developed the certification program and operated it from 2004 to 2010. The transition of the certification program from Cornell to AASHTO re:source took place in 2010 with oversight from the FHWA. The FHWA and Cornell Local Roads Program continue to provide oversight, guidance, and technical support for the program.

Additional Information

The AASHTO re:source website at <http://www.aashtoresource.org> contains additional detailed information on the FWD Calibration Center Operator Certification Program, including contact information and supporting documents.

2. Certification Criteria

Certification Types

There are two types of certifications: calibration center certifications and personnel certifications. Initial certifications are performed on-site. Subsequent certifications may be performed on-site or remotely at the discretion of AASHTO.

On-Site Evaluation

To establish or renew certification, either an evaluation must be performed by AASHTO re:source as described in *Section 6* and *Section 7*. All observations and nonconformities noted in the evaluation report must be resolved as described in *Section 8*.

Frequency of Evaluations

To maintain current certification, personnel evaluations shall be performed at an interval not to exceed 24 months. Calibration center certifications shall be performed at an interval not to exceed 48 months.

Fees

In order to maintain current certification, all [applicable fees as described on the AASHTO re:source website](#) must be paid in full. Failure to pay will result in the revocation of applicable certificates and removal from the AASHTO re:source website listing. In addition, pre-payment may be required before scheduling any future certification events.

Note— AASHTO member departments, including state and federal highway departments, are not subject to the fee structure described in this section.

Load Cell Calibration

Reference load cells used by the calibration centers shall be calibrated on an annual basis as described in AASHTO R 33, *Calibrating the Reference Load Cell Used for Reference Calibration for Falling Weight Deflectometer*.

Note— AASHTO will pay for the calibration of one load cell per year for each member department.

3. Certification Decisions

Certification decisions are made by the AASHTO re:source representative conducting the evaluation. The AASHTO re:source representative compiles all necessary information resulting from the on-site evaluation and communication from the calibration center. All certification decisions are confined to those matters specifically related to the certification of the operators being considered.

4. Scheduling of On-Site Evaluations

Initial Evaluation

To obtain initial certification for a calibration center, or operator, the facility, or operator must complete and submit an FWD Evaluation Request Form to AASHTO re:source by email. A copy of the FWD Evaluation Request Form can be found on AASHTO re:source's website at <http://www.aashtoresource.org>. Once the request has been received, AASHTO re:source staff will contact the facility's manager or the operator to determine the date for the evaluation..

Renewal of Current Certification

AASHTO re:source staff will contact the facility's manager or operator approximately three to four months before the anticipated evaluation date. The facility's manager or operator will be

asked to send in an FWD Evaluation Request Form to AASHTO re:source by email. A copy of the Evaluation Request Form is found on AASHTO re:source's website at <http://www.aashtoresource.org>. Once the request has been received, AASHTO re:source staff will contact the facilities manager or operator to arrange the date and time for the evaluation. An evaluation date must be agreed upon by AASHTO re:source and the facility's manager or operator no less than one month before the anticipated evaluation date..

Cancelling or Rescheduling

Any evaluation which is cancelled or rescheduled within two (2) weeks of the scheduled date may be subject to the fees described on the AASHTO re:source website.

5. Preparation for the Evaluation

On the Day of the Evaluation

In order to provide the best evaluation possible, the facility must arrange for a fully-operational FWD to be available during the on-site evaluation. In addition, all required software and calibration equipment must be available and ready for use. If significant delays result due to inadequate preparation by the facility, additional fees may be charged to the facility.

6. Calibration Center Evaluation

Opening Meeting

At the beginning of the evaluation, the calibration center operator and the AASHTO re:source evaluator will meet to discuss the anticipated flow of the evaluation. This is an opportunity for the FWD calibration operator and other staff to ask questions about the evaluation, the calibration protocol, and the software and equipment.

Facility and Equipment Evaluation

A brief review of the calibration center facility and equipment will be performed. This review will ensure that the equipment and facility is compliant with the calibration procedure, that the serial numbered equipment is correct, the reference devices are up to date on their calibrations, and the facility is able to perform FWD calibrations without electromagnetic interference or significant temperature changes during a typical FWD calibration.

Literature

The center and operator will be evaluated for compliance to AASHTO R 32, *Standard Recommended Practice for Calibrating the Load Cell and Deflection Sensors for a Falling Weight Deflectometer*. The most current published version of AASHTO R 32 will be used during the evaluation process. A copy of the current version of AASHTO R 32 must be available at the facility during the on-site evaluation.

Closing Meeting

At the end of the evaluation, the AASHTO re:source Evaluator will review their findings with the Facility's Manager during the closing meeting. Fully compliant centers will be issued a certificate upon completion. Any center that is not found to be fully compliant will be issued a report detailing any nonconformance that requires corrective action.

7. Calibration Operator Evaluation

Opening Meeting

At the beginning of the evaluation, the calibration center operator and the AASHTO re:source evaluator will meet to discuss the anticipated flow of the evaluation. This is an opportunity for the FWD calibration operator and other staff to ask questions about the evaluation, the calibration protocol, and the software and equipment.

Personnel Involvement

In addition to the representative(s) from AASHTO re:source, the calibration operator(s) to be evaluated must be present for the evaluation. The calibration center must provide additional personnel to hold the sensor stand and to operate the FWD during the calibration procedure as necessary.

Calibration Operator Evaluation

Each calibration center operator will be evaluated to ensure conformance to AASHTO R 32 by demonstration of the calibration procedure on a working FWD. Each operator will be expected to perform the calibration independently, demonstrating proficiency in use of the calibration software and equipment.

Closing Meeting

At the end of the evaluation, the AASHTO re:source Evaluator will review their findings with the Calibration Operator during the closing meeting. Fully compliant operators will be issued a certificate upon completion. Any operator that is not found to be fully compliant will be issued a report detailing any nonconformance that requires corrective action.

8. Resolving Nonconformities

Methods of Resolving Nonconformities

All nonconformities, or findings, noted in the evaluation report will require that a written response be submitted before the certification process can continue. Responses shall be submitted to the AASHTO re:source representative that conducted the evaluation. Responses should be submitted in the form of an email. Findings may be resolved by providing sufficient evidence to indicate that the finding has been addressed. Photographs, paperwork, or receipts may be used as evidence of resolution of equipment and facility-related findings. Procedural findings may be addressed by re-training of the operator or by other means. In some cases, procedural findings may require a supplemental evaluation by AASHTO re:source in order to fully resolve the issue (see *Section 9*).

Submitting Responses to Nonconformities

Evidence of resolution of nonconformities must be submitted to AASHTO re:source within thirty (30) calendar days of the issuance of the evaluation report. If this deadline is not met, another full evaluation may be required before certification will be issued.

Review of Responses

Upon receipt, AASHTO re:source staff will review responses and will contact the facility if further information or clarification is needed.

Communication of Certification Decisions

If certification is denied, the center will be notified of the reason for the denial and given an opportunity to respond or appeal the decision (see *Section 10*). If all responses are accepted, certification will be issued in accordance with *Section 11*. Email will be the primary form of communication for all Administrative Task Group decisions. A reply from the center that the notification was received will be requested.

9. Supplemental On-Site Evaluations

AASHTO re:source evaluators may make supplemental visits to a calibration center to (1) investigate a history of not correcting previously identified evaluation findings, (2) ensure that changes in the facility's equipment and location do not affect the ability of the operator(s) to conform to the program requirements, and (3) re-evaluate calibration operators found non-compliant as a result of the previous on-site evaluation. Supplemental on-site evaluations will be scheduled with the facility's manager and will be completed at additional cost to the center.

10. Appeal Process

If an operator is denied certification, the calibration center has the right of appeal if the center feels that the program requirements have been met. AASHTO re:source uses a two-level appeal procedure as described below.

First-Level Appeal

A center may make a first-level appeal by sending explanations and supporting documentation to AASHTO re:source. The appeal and supporting documentation must be sent within thirty (30) calendar days of receipt of notice of denial. Upon receipt of an appeal, AASHTO re:source will prepare a memorandum for the Chair of the AASHTO re:source Administrative Task Group (ATG) presenting the appeal and the center's supporting documentation. AASHTO re:source will submit the memorandum and supporting documentation to the six voting members of the ATG which includes the Chair, the Secretary, and the four regional representatives for comments and recommendations. Based on all the comments and recommendations made, the ATG Chair will prepare a first-level appeal ballot for the voting members requesting that they agree or disagree with the recommendation of the Chair. Support of at least two-thirds (2/3) of the voting members of the ATG will be required to uphold the recommendation of the Chair. If the recommendation is not upheld, the opposite position will be the ruling of the ATG. The center will be notified of the decision on its appeal by certified mail, return receipt requested. Decisions will be mailed within fifteen (15) calendar days from when the decision was made by the ATG. If the appeal is denied, the notification letter will include the reason for the denial and information on the second-level appeal process that is available. If the center decides to resolve the issue, the center must provide AASHTO re:source with evidence that the finding(s) have been resolved as specified in Section 8. If the appeal is granted, certification will be issued as specified in Section 11

Second-Level Appeal

A calibration center may make a second-level appeal by informing the Chair of the Committee on Materials and Pavements (COMP) in writing within thirty (30) calendar days after receipt of the denial of the first-level appeal. A special review panel comprised of the COMP Chair and three members chosen by the COMP Chair from the COMP will be established to hear the second-level appeal. Members of the ATG who participated in the first level appeal are not eligible for membership on the panel. The center will be notified in writing of the appeal hearing time. At the discretion of the COMP Chair, the hearing may be either a face-to-face meeting or a virtual conference call between the panel and the calibration center representative. The hearing will be held within forty-five (45) calendar days of receiving the notice of the second-level appeal. Travel expenses for panel members participating in the appeal hearing will be covered by AASHTO re:source, while the center will be responsible for its expenses related to the hearing. Following the hearing, AASHTO re:source, in consultation with the COMP Chair, will ballot the panel. On the ballot, the panel will vote to either support or deny the appeal. Support by at least three members of the panel will be required to grant the appeal; otherwise, the appeal is denied. The center is notified of the decision on its second- level appeal within thirty (30) calendar days of the hearing by certified mail, return receipt requested. If the appeal is denied, the center may decide to resolve the issue. To resolve the issue, the center must provide evidence that the finding(s) have been resolved as specified in *Section 8*. If the appeal is granted, certification will be issued as specified in *Section 11*.

11. Certificates

Issuance

Certificates will be issued following an on-site evaluation, resolution of all findings as described in *Section 8*. Calibration operator certificates will include the full name of the operator, the date of issuance and the expiration date of the certification. The calibration center certificate will include the name and location of the calibration center, the date of the certification, the type of calibrations that can be performed at the location, and expiration date of the certification. The certificate will be signed by AASHTO's Executive Director and the Chair of the AASHTO Committee on Materials and Pavements (COMP).

Distribution

An electronic copy of the certificate will be made available on AASHTO re:source's website at <http://www.aashtoresource.org>. A list of certified operators and calibration centers will be maintained as described in *Section 12*.

12. Directory

AASHTO re:source maintains a listing of certified FWD calibration center operators and calibration centers containing relevant information and contact information when applicable.

13. Withdrawal of Certification

A facility may choose to withdraw certification of their calibration center operators at any time. Requests for withdrawal of certification must be made in writing to the AASHTO re:source Manager. Refunds will not be provided for services already rendered.

14. Certification Location

Certification is issued for individual operators. An operator is considered certified to perform FWD calibrations by AASHTO re:source regardless of location. If an operator leaves a calibration center to work at another, a new on-site evaluation is not required.

While certification is for an individual operator, adequate facilities and calibration equipment are an important component of successful FWD calibration. During the on-site evaluation, operators will be expected to demonstrate competency regarding the condition of the location in which the calibration is performed, as described in AASHTO R 32. The location listed on the certification and on the AASHTO resource website will reflect the location of the center for which the operator typically performs calibrations. A review of the facilities in which the calibration is demonstrated will be a significant component of the on-site evaluation. Delay, denial, or revocation of certification of all operators at a particular location may result if the facilities or equipment used to demonstrate the on-site evaluation are deemed inadequate or unsatisfactory.

15. Conduct and Ethics

AASHTO may choose to revoke certification for any center or individual operator that engages in unethical practices, including, but not limited to, falsification of records and data. AASHTO reserves the right to investigate claims of unethical practices to determine if revocation of certification is necessary. Refunds will not be provided for services already rendered.

AASHTO reserves the right to refuse service to centers or operators that:

- a) Maintain unsafe working conditions for the on-site assessor from AASHTO re:source. Create a hostile working environment for the on-site evaluator or other staff members from AASHTO re:source, or AASHTO.
- b) Behave in a manner that is detrimental to the reputation of the AASHTO FWD Calibration

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The right to refuse service must be approved by the AASHTO re:source Administrative Task Group. This decision may be appealed according to the procedures identified in *Section 10*.

16. Confidentiality Policy

The only information shared by AASHTO re:source regarding FWD calibration centers and operators is that which can be found on the calibration certificate and online directory as described in *Section 11* and *Section 12*. All other information obtained during on-site evaluations, as well as all other correspondence with AASHTO re:source, will not be shared with any third party without explicit written permission from the calibration center or operator, as applicable.