Documented Procedures Make Projects Better

Documented procedures help AISC Certified Fabricators build quality into their projects.

By Dan Kaufman

In the construction industry, we rely on two very different means of ensuring project quality: inspection and contractor certification. Certification stresses the importance of processes and procedures over inspection, with the belief that if the right procedures are in place there is a better chance of producing a high-quality end product. This distinction is of particular importance for our industry, where every project is different. Even in industries where thousands of purportedly identical widgets are being produced, manufacturers are finding that inspection alone does not make them high-quality producers.

Of course, we are often asked, "Which is better—certification or inspection?" The answer is that given the inherent differences between the two, one cannot serve as a replacement for the other. In fact, they can complement each other depending on the project requirements.

AISC's *Certification Standard for Steel Building Structures* requires participating fabricators to have nearly 20 procedures in place, including contract review, detailing, document control, welding, inspection, calibration, control of nonconformances, and corrective action. They are intended to be a direct reflection of a fabricator's operations—the types of projects they work on, the size of their shop, etc. No two shops are alike, and consequently no two procedures are alike. On-site auditors review these procedures and through the audit process verify they are being implemented.

So what does a procedure look like? And what purpose does it serve? We've put together a sample procedure (at right) and provided some insight and "translations" to help answer these questions and better illustrate the value that proper procedures can bring to a project. ★

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Special thanks to Terry Logan, Lead Auditor for QMC, for help with this month's article.

What does a procedure look like? Take a look at this sample.

Who is responsible for making sure the procedure is implemented and effective? Accountability makes a difference!

One of approximately 18 procedures required for certification to the Standard for Steel Building Structures.

How do you know that the job you're doing will have the same quality (in measurements) from one project to the next? Repeatability is essential. A procedure assures that your dimensional measurements have the same repeatability from project to project. As a specifier, you can rely on the accuracy of the work without sending in an inspector.

Standards are important. You want to know that you are measuring the same way as everyone else.

Calibrations don't last forever.

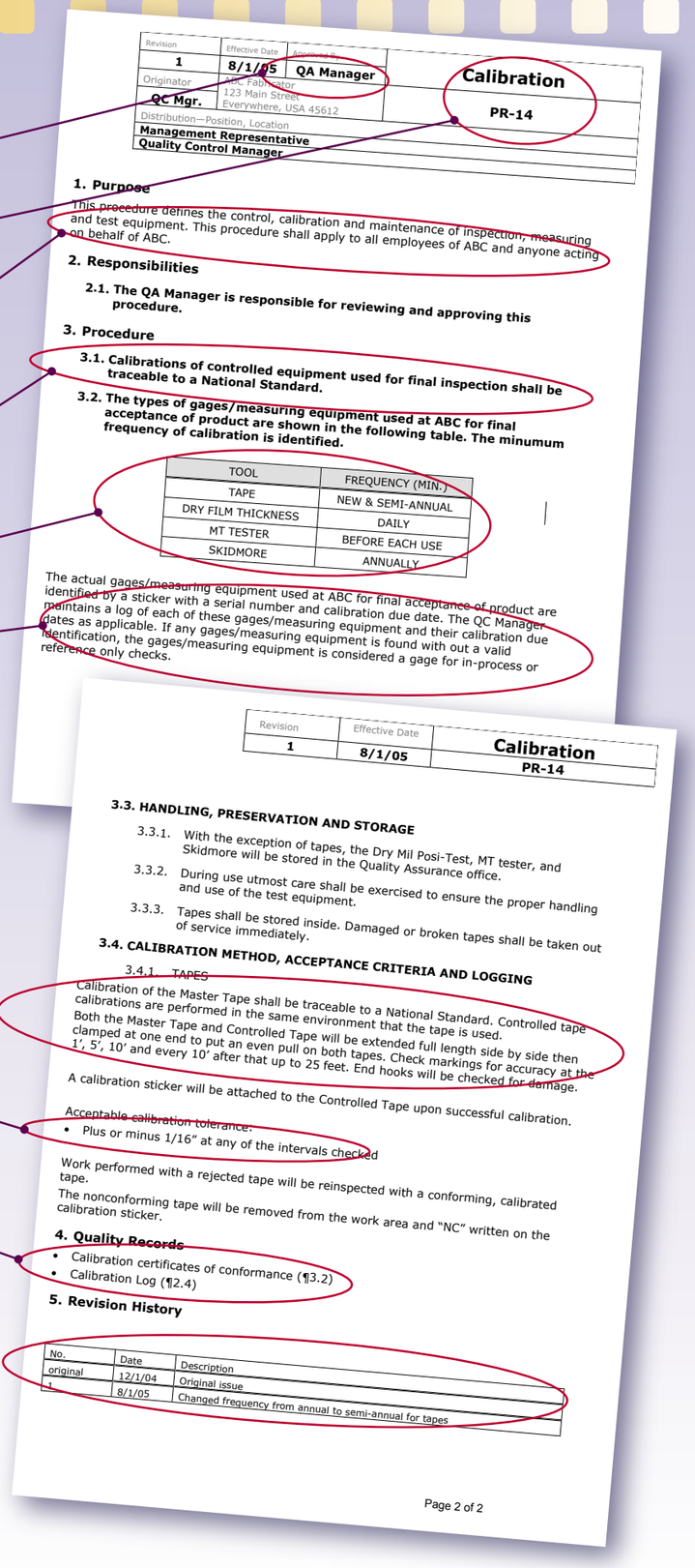
It may seem like a lot of work, but remember the alternative is having a piece delivered to the site and then finding out the holes are off by a half inch.

How much accuracy is required for gages? Determining the gage accuracy level shows that consideration has been given for projects that require cumulative tolerances—especially for extended lengths.

How good is good enough?

Is it documented? How can you verify that the gage was checked? The procedure requires that a person be assigned to this step to assure that the task is completed. Tasks typically have decisions, measurements, or results of an event—therefore a record is required.

How old is this procedure? How much time has passed since it was updated?



Revision	Effective Date	Approved By
1	8/1/05	QA Manager

Originator: QC Mgr.

ABC Fabricator
123 Main Street
Everywhere, USA 45612

Distribution—Position, Location
Management Representative
Quality Control Manager

Calibration
PR-14

1. Purpose

This procedure defines the control, calibration and maintenance of inspection, measuring and test equipment. This procedure shall apply to all employees of ABC and anyone acting on behalf of ABC.

2. Responsibilities

2.1. The QA Manager is responsible for reviewing and approving this procedure.

3. Procedure

3.1. Calibrations of controlled equipment used for final inspection shall be traceable to a National Standard.

3.2. The types of gages/measuring equipment used at ABC for final acceptance of product are shown in the following table. The minumum frequency of calibration is identified.

TOOL	FREQUENCY (MIN.)
TAPE	NEW & SEMI-ANNUAL
DRY FILM THICKNESS	DAILY
MT TESTER	BEFORE EACH USE
SKIDMORE	ANNUALLY

The actual gages/measuring equipment used at ABC for final acceptance of product are identified by a sticker with a serial number and calibration due date. The QC Manager maintains a log of each of these gages/measuring equipment and their calibration due dates as applicable. If any gages/measuring equipment is found with out a valid identification, the gages/measuring equipment is considered a gage for in-process or reference only checks.

Revision	Effective Date	Calibration
1	8/1/05	PR-14

3.3. HANDLING, PRESERVATION AND STORAGE

3.3.1. With the exception of tapes, the Dry Mil Posi-Test, MT tester, and Skidmore will be stored in the Quality Assurance office.

3.3.2. During use utmost care shall be exercised to ensure the proper handling and use of the test equipment.

3.3.3. Tapes shall be stored inside. Damaged or broken tapes shall be taken out of service immediately.

3.4. CALIBRATION METHOD, ACCEPTANCE CRITERIA AND LOGGING

3.4.1. TAPES

Calibration of the Master Tape shall be traceable to a National Standard. Controlled tape calibrations are performed in the same environment that the tape is used.

Both the Master Tape and Controlled Tape will be extended full length side by side then clamped at one end to put an even pull on both tapes. Check markings for accuracy at the 1', 5', 10' and every 10' after that up to 25 feet. End hooks will be checked for damage.

A calibration sticker will be attached to the Controlled Tape upon successful calibration.

Acceptable calibration tolerance:

- Plus or minus 1/16" at any of the intervals checked

Work performed with a rejected tape will be reinspected with a conforming, calibrated tape.

The nonconforming tape will be removed from the work area and "NC" written on the calibration sticker.

4. Quality Records

- Calibration certificates of conformance (¶3.2)
- Calibration Log (¶2.4)

5. Revision History

No.	Date	Description
original	12/1/04	Original issue
1	8/1/05	Changed frequency from annual to semi-annual for tapes

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