DeFelsko®

Management Procedure 2575
Revision: C
Date Issued: July 21, 2004
Date Revised: October 30, 2017

Calibration Procedure

DeFelsko Corporation

PosiTest DFTC-B, DFTC-C, DFTF-B & DFTF-C

Coating Thickness Gages

Table of Contents

1 Introduction and UUC Performance Requirements

1.1 This procedure describes the calibration of DeFelsko Corporation PosiTest DFTC-B, DFTC-C, DFTF-B & DFTF-C Gages. All gages have the following ranges:

Table 1-1 Measurement Ranges

Model	Measurement Range
DFTC-B DFTC-C DFTF-B DFTF-C	0-1000 microns (0-40 mils)

1.2 The unit being calibrated will be referred to as the UUC (unit-under-calibration).

2 Measurement Standards and Support Equipment Performance Requirements

2.1 The UUC accuracy requirements are based upon the published UUC performance specifications.

2.2 The test uncertainty ratio applied in this Calibration Procedure is 4:1 unless otherwise stated.

2.3 The Minimum-Use-Specifications are the minimum test equipment specifications required to meet all the UUC accuracy requirements and the test uncertainty ratio applied.

Table 2-1 UUC Accuracy Requirements and Calibration Description

Model	Range	Performance Specifications	Test Method
DFTC-B DFTC-C DFTF-B DFTF-C	0 - 1000 microns (0 - 40 mils)	± (2 μm + 3% of reading) ± (0.1 mils + 3% of reading)	Compared to Reference Standards

Table 2-2 Minimum Use Specification

Range	Accuracy
0 - 1000 microns (0 - 40 mils)	± 0.50 microns (± 0.025 mils)

Table 2-3 Actual Equipment Specification

Equipment Generic Name	Range	Accuracy	Manufacturer/Model #'s Applicable
Coating Thickness Reference Standards	0 - 1000 microns (0 - 40 mils)	± 0.43 microns (± 0.017 mils)	DeFelsko Corporation, STD-S2
	0 - 500 microns (0 - 20 mils)	± 0.43 microns (± 0.017 mils)	DeFelsko Corporation, STD-A2

***Caution*:** The instructions in this Calibration Procedure relate specifically to the equipment and conditions listed in Section 2. If other equipment is substituted, the information and instructions must be interpreted accordingly.

Table 2-4 Calibration Environmental and Warm-up Requirements

Measurement Standards & Support Equipment Environmental Requirements:	Temperature: 23 ± 5° C. Relative Humidity: Less than 95%
Measurement Standards & Support Equipment Warm-up and Stabilization Requirements:	Not Required

3 Preliminary Operations

Note: Review the entire document before starting the calibration process.

3.1 Visually inspect the UUC for:

- Damaged LCD readout
- Probe wear or coating
- Cracked or broken case
- Missing battery door or other parts
- Proper identification

3.2 Damage or excess wear shall be repaired prior to beginning the calibration process.

3.3 Gage Reset:

3.3.1 For –B version gages: Turn gage on by depressing the probe. Perform a Reset by pressing and releasing both buttons simultaneously 3 times.

3.3.2 For –C version gages: Turn on the gage by pressing either button. Enter the menu by pressing both buttons simultaneously. Use the "-" or "+" buttons to select the reset symbol (curled yellow arrow) and then press both buttons simultaneously to reset the gage.

Caution: Be sure to keep the probe well away from any metal surface during the RESET process.

3.4 Gage Zero

3.4.1 For –B version gages: Perform a Zeroing operation by pressing and releasing both buttons simultaneously. When the display blinks "0" measure the ferrous (steel) uncoated Reference Standard. Re-measure the uncoated Reference Standard and verify the reading is within ± 2 microns (0.1 mils)

3.4.2 For –C version gages: Enter the menu by pressing both buttons simultaneously. Use the "-" or "+" buttons to select the "0" symbol and then press both buttons simultaneously. Follow the screen prompt to measure the ferrous (steel) uncoated Reference Standard. Re-measure the uncoated Reference Standard and verify the reading is within ± 2 microns (0.1 mils).

3.4.3 For DFTC-* products, repeat step 3.4.1 or 3.4.2 for the non-ferrous (Aluminum) uncoated Reference Standard.

4 Calibration Process

Note: Whenever the test requirement is not met, verify the results of each test and take corrective action before proceeding.

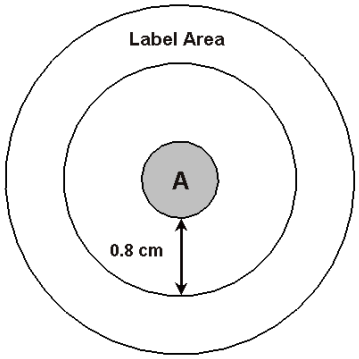
4.1 Review the Performance Requirements Table 5-1.

4.2 Record the thickness of the Reference Standards being used and determine the allowed range of readings for the UUC using the calculation methods shown in Table 5-1.

4.3 Use the UUC to take readings of all the reference standards. Verify that the readings are within the allowable limits determined in table 5-1. Record the readings.

Note: In taking readings the probe tip shall be centered on point A of the Reference Standard as shown below. Record all digits displayed on the LCD.

Figure 4-1 Measurement Area for Reference Standards



5 Performance Requirements

Table 5-1 Performance Requirements and Calibration Data
for PosiTest DFTC-B, DFTC-C, DFTF-B & DFTF-C

Thickness on Standard Label (microns)	Min. Reading Allowed❶ (microns)	Max. Reading Allowed❷ (microns)	Gage Measurement (microns)
A	Ferrous		
A	Non-Ferrous		

❶Calculation: (A times 0.97) - 2. Round up to the nearest 1 micron.
❷Calculation: (A times 1.03) + 2. Round down to the nearest 1 micron.

* For imperial/metric readings convert using 1 mil = 25.4 microns

Management Procedure Change Notice

Procedure Number: 2575
Revision Level: C
Date of Change: October 30, 2017
Title: Calibration Procedure for PosiTest DFTC-B, DFTC-C, DFTF-B & DFTF-C

Reason for Change:

- New version product

Description of Change:

- Changed DFT Ferrous and Combo references to DFTC-B, DFTC-C, DFTF-B & DFTF-C
- Made sections 3.3.1 and 3.3.1 for B version products
- Added section 3.3.2 and 3.4.2 for C version products
- Figure 4-1 removed reference to square reference standard

I confirm I have read and understand the procedure and the change described above.

Printed Name	Signature	Date

Management Form 0010.02-05/1998