DeFelsko®

Management Procedure 2577
Revision: A
Date Issued: June 12, 2018
Date Revised:

Calibration Procedure

DeFelsko PosiTector BHI Barcol Hardness Impressor Probes

Table of Contents

1 Introduction and UUC Performance Requirements

1.1 This procedure describes the calibration of the DeFelsko PosiTector BHI Barcol Hardness Impressor probes with the following specifications:

Table 1-1 Measurement Ranges

Measurement Range	Resolution
20 to 100 Barcol	0.1

1.2 The unit being calibrated will be referred to as the UUC (Unit-Under-Calibration).

2 Calibration Traceability Discussion

2.1 Reference Barcol hardness standards traceable to an internationally recognized standard are not available. However, the ASTM B648-10 standard does refer to an interlaboratory study that was conducted on a number of aluminum samples. DeFelsko uses the average value reported in the study as the nominal value during calibration. Additionally, the materials used during calibration are tested to ensure compliance with the relevant AMS and ASTM standards for chemical composition and mechanical properties.

3 Calibration Environment

Table 3-1 Calibration Environment 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:	none

4 Preliminary Operations

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

4.1 Visual Inspection

4.1.1 Damage or excess wear must be repaired prior to beginning the calibration process.

4.1.2 Visually inspect the UUC for:

- Damage to the probe body or tip
- Missing parts
- Proper identification

4.2 Gage Reset

4.2.1 For bodies with serial numbers after 700000; when the unit is powered down, simultaneously hold the "+" and middle buttons until the reset symbol (2 arrows) appears.

5 Hardness Calibration Process

Refer to UUC and equipment instruction manual(s) for menu navigation instructions, details on features and operating instructions.

Note: Whenever a test requirement is not met as indicated in table 6-1, verify the results of the test and take corrective action before proceeding.

5.1 Place the UUC on the material to be tested, making sure the feet and the probe tip are at the same height. Press down onto the material until the indentor foot is flat and hold steady against the surface until the test timer reaches zero and the gage beeps.

5.2 Lift the UUC and move to an untested area of the material at least 3mm (1/8") away from any previous test marks and take another reading. Repeat until three measurements are obtained for the material. Record the average of the three readings in column A of table 6-1.

5.3 Repeat steps 5.1 -5.2 for the remaining materials.

6 Performance Requirements

Note: The technician will collect the data needed to complete column A. The technician shall then calculate the values for Column B and record all information as shown in table 6-1. Do not write in this procedure.

Table 6-1 Requirements and Calibration Data for DeFelsko PosiTector BHI Probes

Reference	Nominal (Barcol)	Test Equipment Reading (A)	Probe Measurement Accuracy (B)	Allowable Tolerance
5052-H32	74			± 2.0
6061-T651	83			± 2.0
7075-T651	92			± 2.0

Probe Measurement Accuracy (B) = Test Equipment Reading (A) - Nominal

Management Procedure Change Notice

Procedure Number: MP 2577
Revision Level: A
Date of Change: June 12, 2018
Title: Calibration Procedure for DeFelsko PosiTector BHI Barcol Hardness Impressor Probes

Reason for Change: • New product
Description of Change: • New procedure

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

Printed Name	Signature	Date

Management Form 0010.02-05/1998