

## NAV 04 CALIBRATION AND USE OF MEASURING AND TEST EQUIPMENT

### Applicable Standards

ANSI Z540.1 / ISO 9001-2000 / ISO 10012-2003

1. Does the supplier have a documented system to control the use and calibration of measuring and test equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
2. Are employees of the supplier trained in the use of calibrated Measuring and Test Equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
a. Does the supplier maintain records of this training?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
3. Are tools, gauges and test equipment identified in a manner to indicate calibration status? Does this include:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
a. Date calibrated/inspected and/or date due for calibration/inspection?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
b. Item identity or serial number that is traceable to a detailed calibration record?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
c. Tamper resistant seals used to protect operator accessible adjustments that would invalidate calibration.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
d. Are items which are not calibrated to their full capability or which require functional check only labeled to indicate the applicable condition?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
4. Does the supplier have the necessary gauges and measuring devices to permit reliable inspections to meet the procedural acceptance criteria?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
5. Are employee-owned tools and gauges used for product acceptance subject to the same controls as company-owned equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
6. Are customer-furnished tools, gauges and test equipment adequately controlled?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
7. Is calibrated M&TE used in a controlled environment to limit the affects on the results of measurements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
a. Where this is not possible are the environmental affects monitored and recorded to correct measurement results?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
8. Are adequate facilities used for transportation, storage and calibration of all tools, gauges and test equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
9. Does each piece of measuring and test equipment used to determine compliance with customer technical specifications have a calibration/inspection record?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

10. Do these calibration/inspection records reflect:			
a. Item identity number and name?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
b. Frequency of calibration?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
c. Procedure used for calibration/inspection?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
d. Date calibrated/inspected and due date for next calibration/inspection?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
e. Personnel performing calibration/inspection?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
f. Calibration actions taken (adjustments, repairs, etc)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
g. Actual measurements/values documented before and after calibration actions?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
h. Standard used (traceable to NIST)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
11. When M&TE is found to be out of calibration does the supplier have a method for determining the impact on previously accepted products?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
12. When M&TE is found to be out of calibration does the supplier have a method for notifying customers who may have received affected product?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
13. Does the supplier use outside calibration laboratories?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
a. Are outside laboratories evaluated for acceptability?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b. If a third party performs these evaluations record the accreditation organization used and the standard accredited to.	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c. Are these laboratories on an approved subcontractor list?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
14. List Calibration Labs used			
15. Does the supplier have a documented system to manage and perform calibration of M&TE?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
a. Are calibration/recall procedures readily available to the calibrating personnel?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
b. Are personnel involved in calibrating M&TE trained to local calibration procedures and the appropriate higher level requirements?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
c. Are records of this training maintained?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

16. Do these procedures provide for:		
a. Adjustment of calibration frequency?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
b. Determining the adequacy of measuring/test equipment and procedures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
c. Identification and prevention of use of any equipment which does not perform satisfactorily?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
d. Definition of significant out-of-tolerance conditions?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
e. Written notification by calibration activity to the user or a designated organization of significant out-of-tolerance conditions?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
f. Corrective action by supplier on affected product?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
g. A checkout and accountability system to assist in locating M&TE equipment for recall purposes?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
17. Are calibration intervals for measuring and test equipment and measurement standards established to assure that M&TE will remain in tolerance throughout the calibration interval?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
a. Does the supplier have a system to recall of all calibrated items at the end of their calibration interval?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
b. Are items returned for calibration as scheduled and/or when found to have broken calibration seals, damaged, or malfunctioning?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
c. Does the calibration lab or calibration contractor provide the end user notification of any out of tolerance conditions?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
18. Are applicable tools, gauges and test equipment used in the calibration of M&TE traceable to a National Institute of Standards Technology Standard or Intrinsic Standard?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
19. Is all equipment that can affect the results of calibrations calibrated and/or verified before being used to calibrate M&TE?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
20. Are inactive standards identified as "inactive" or "calibration not required"?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
21. Does the Calibration Lab maintain cleanliness and provide for protection of test equipment?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

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22. Does the Calibration Lab monitor and control environmental factors in order to mitigate their effects on the calibration process or provide appropriate adjustments when necessary?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
23. Are the standards utilized of a sufficient accuracy level to attain a 4 to 1 test accuracy ratio for the characteristic being calibrated?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
a. If other test accuracy ratios less than 4 to 1 are maintained or are they limited by the state of the art or allowed by contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
24. Review and record a sample of measuring and test equipment serial/traceability numbers: Sample Size: Serial/Traceability Numbers: Are all calibration labels attached as required and current? Do calibration records exist for all items in the sample?		

Additional concerns/comments: