

The following tables contain a list of upcoming retroactive, nonretroactive, and recently enacted enforcement dates for NIST Handbook 44 code requirements, which may require action by device manufacturers, owners/operators, or regulatory officials. This information is provided to alert interested parties on upcoming Handbook 44 requirements. Requirements in the tables are paraphrased; therefore, it is recommended that the latest edition of Handbook 44 be consulted for the complete text. Codes that were amended to provide greater clarity or make other editorial changes are not included in this information. A complete report of changes to the handbook is published annually in the Report of the National Conference on Weights and Measures. It is recommended that you contact the statutory authority in your weights and measures jurisdiction for specific details on the enforcement of these code requirements.

Retroactive requirements apply to *all* equipment in commercial service prior to, and in use at any time on or after, the enforcement date. Nonretroactive requirements are enforceable for equipment: (1) manufactured, (2) new and used brought into a jurisdiction, and (3) previously in noncommercial use, then placed into commercial use *after* the effective date.

Upcoming NIST Handbook 44 Code Enforcement Dates (Retroactive and Nonretroactive)			
Code Section	Paragraph	Enforcement Date	Requirement
1.10. General	G-S.1.(c) Identification; Model Designation	Nonretroactive as of January 1, 2003	The model designation shall be prefaced by the term “Model,” “Type,” or “Pattern” and may be followed by the term “Number” or the minimum abbreviation of those words. The abbreviation for the term “Model” shall be “Mod” or “Mod.” The prefix lettering may be initial capitals, all capitals, or all lower case.
	G-S.1.(g) Identification; National Type Evaluation Program (NTEP) Certificate of Conformance Number	Nonretroactive as of January 1, 2003	Devices holding an NTEP Certificate of Conformance (CC) Number shall be marked with the CC Number or corresponding CC addendum number. The NTEP CC Number shall be prefaced by the terms “NTEP CC,” “CC,” or “Approval.” The terms may include the term “Number.”
	G-S.1. 1. Remanufactured Devices and Remanufactured Main Element	Nonretroactive as of January 1, 2002	Remanufactured devices and remanufactured main elements shall be permanently marked with the name, initials, or trademark of the last remanufacturer or distributor, and model designation if different than the original model designation.
2.20. Scales	S.1.4.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.

**Upcoming NIST Handbook 44 Code Enforcement Dates
(Retroactive and Nonretroactive)**

Code Section	Paragraph	Enforcement Date	Requirement
2.20. Scales (continued)	S.6.4. Railway Track Scales	Nonretroactive as of January 1, 2002 (see italics text for requirements with a 1/1/02 enforcement date)	A railway track scale shall be marked with maximum capacity of each section. <i>The nominal capacity of a scale with more than two sections shall not exceed twice the rated section capacity. The nominal capacity of a two-section scale shall not exceed its rated section capacity.</i>
	T.N.3.8. Dynamic Monorail Weighing System	Nonretroactive as of January 1, 2002 (see italics text for requirements with a 1/1/02 enforcement date)	Acceptance tolerance is the same as maintenance tolerance in Table 6. For tests of 20 or more individual test loads, 10 percent may be in error, each not to exceed two times the tolerance. Error of the total individual test loads shall not exceed ± 0.2 percent. <i>For devices undergoing type evaluation a tolerance equal to one-half the maintenance tolerance values shown in Table 6. shall apply.</i>
3.30. Liquid-Measuring Devices	S.1.5.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be wider than the width of the narrowest graduation.
	Table S.2.2. Categories of Device and Methods of Sealing	Nonretroactive as of January 1, 2005	Manufacture of a Category 2 devices is permissible up to January 1, 2005; <i>after</i> January 1, 2005 all <u>new</u> devices with remote communication capability must meet sealing requirements for Category 3.
3.31. Vehicle-Tank Meters	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
3.32 Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
3.33. Hydrocarbon Gas Vapor-Measuring Devices	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.

3.34. Cryogenic Liquid-Measuring Devices	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
3.35. Milk Meters	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
3.36. Water Meters	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
3.37. Mass Flow Meters	Table S.3.5. Categories of Device and Methods of Sealing	Nonretroactive as of January 1, 2005	Manufacture of a Category 2 devices is permissible up to January 1, 2005; <u>after</u> January 1, 2005 all <u>new</u> devices with remote communication capability must meet sealing requirements for Category 3.
3.38. Carbon Dioxide Liquid-Measuring Devices - Tentative Code	S.1.3.3.(a) Width	Nonretroactive as of January 1, 2002	The width of the index of an indicator shall not be greater than the width of the narrowest graduation.
5.54. Taximeters	S.1.10. Non-fare Information	Nonretroactive as of January 1, 2002	The fare and extra displays may be used to display auxiliary information when the taximeter is in the vacant condition and such information is displayed for ten seconds or less.
	S.6.(b) Power Interruption, Electronic Taximeters	Nonretroactive as of January 1, 2002	After restoration of power following an interruption exceeding 3 seconds, the previously displayed fare shall be displayed for a maximum of 1 minute, at which time the fare shall automatically clear and the taximeter return to the vacant condition.
5.57. Near-Infrared Grain Analyzers - Tentative Code	See the entire code for specific paragraphs with enforcement dates	Nonretroactive and effective as of January 1, 2002	NOTE: The enforcement date for all nonretroactive requirements is January 1, 2002.

**New or Modified 2002 NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements
for Weighing and Measuring Devices**

Code Section	Paragraph	Enforcement Date	Requirement
2.20. Scales	Table S.6.3.a. Marking Requirements	Applies to all equipment on January 1, 2002	Definitive guidelines for determining which weighing elements are permanently attached that have specific marking requirements listed in Table S.6.3.a.
2.20. Scales (continued)	N.1.3.4.(a) Vehicle Scales, Axle-Load Scales, and Livestock Scales With More Than Two Sections; Prescribed Test Pattern	Applies to all equipment on January 1, 2002	The normal prescribed test pattern shall be an area 1.2 m in length and 3.0 m in width or the width of the scale platform, whichever is less.
2.21. Belt-Conveyor Scale Systems	UR.2.2. (l) Conveyor Installation; Belt Composition and Maintenance	Applies to all equipment on January 1, 2002	Conveyor belting shall be no heavier than required. In a loaded and unloaded condition, the belt shall make constant contact with the horizontal and wing rollers of the idlers in the scale area.
2.24. Automatic Weighing Systems	T.7.3.1. (a) Power Supply, Voltage and Frequency; Alternating Current	Applies to all equipment on January 1, 2002	Devices that operate using an alternating currents must perform within the conditions defined in paragraphs T.3. through T.7. over the line voltage range of 100V to 130V or 200V to 250V and over the frequency range of 59.5 Hz to 60.5 Hz. This applies only to metrologically significant voltage supplies.
3.30. Liquid-Measuring Devices	N.4.1.2. Repeatability Tests	Applies to all equipment on January 1, 2002	Tests should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions, where factors such as temperature, pressure, and flow rate will not affect the results.

	T.2.1.3. Repeatability; Retail Devices	Applies to all equipment on January 1, 2002	Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance.
3.30. Liquid-Measuring Devices (continued)	T.2.3.2. Measurement of Asphalt	Applies to all equipment on January 1, 2002	Maintenance, acceptance, and special tests tolerances for meters delivering asphalt at 50 °C, or asphalt below and above 50 °C.
	T.2.3.4. Repeatability; Wholesale Devices	Applies to all equipment on January 1, 2002	Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance. This tolerance does not apply to tests of the automatic temperature compensation system.
	UR.3.4. Printed Ticket	Applies to all equipment on January 1, 2002	Total price, total delivered volume, and price per gallon/liter shall be shown in print or clear hand script on any ticket issued by the device that contains any one of these values.
3.31. Vehicle-Tank Meters	N.4.1.2. Repeatability Tests	Applies to all equipment on January 1, 2002	Tests should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions, where factors such as temperature, pressure, and flow rate will not affect the results.
	T.4. Repeatability	Applies to all equipment on January 1, 2002	Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance.

<p>3.32. LPG and Anhydrous Ammonia Liquid-Measuring Devices (continued)</p>	<p>N.4.1.2. Repeatability Tests</p>	<p>Applies to all equipment on January 1, 2002</p>	<p>Tests should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions, where factors such as temperature, pressure, and flow rate will not affect the results.</p>
	<p>T.3. Repeatability</p>	<p>Applies to all equipment on January 1, 2002</p>	<p>Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance. This tolerance does not apply to test of the automatic temperature compensation system.</p>
<p>3.34. Cryogenic Liquid-Measuring Devices</p>	<p>N.5.1.1. Repeatability Tests</p>	<p>Applies to all equipment on January 1, 2002</p>	<p>Tests should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions, where factors such as temperature, pressure, and flow rate will not affect the results.</p>
	<p>T.4. Repeatability</p>	<p>Applies to all equipment on January 1, 2002</p>	<p>Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance.</p>

3.37. Mass Flow Meters	N.6.1.1. Repeatability Tests	Applies to all equipment on January 1, 2002	Tests should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions, where factors such as temperature, pressure, and flow rate will not affect the results.
3.37. Mass Flow Meters (continued)	Table T.2. Accuracy Classes for Mass Flow Meter Applications: Asphalt at 50 °C	Applies to all equipment on January 1, 2002	Maintenance, acceptance, and special tests tolerances for various mass flow meter accuracy classes and applications that include deliveries of asphalt at 50 °C, or asphalt below and above 50 °C.
	T.3. Repeatability	Applies to all equipment on January 1, 2002	Tests are conducted at the same flow rate and draft size. The range of the test results shall not exceed 40 percent of the absolute value of the maintenance tolerance and the results of each test shall be within the applicable tolerance.
4.42. Farm Milk Tanks	N.5.1. Verification of Master Metering Systems	Applies to all equipment on January 1, 2002	Master metering systems used to gauge milk tanks shall be verified before and after the gauging process. Master metering systems used to calibrate a milk tank shall be verified before the calibration process and reverified at least every quarter of tank capacity or every 2000 L, which ever is greater.
	N.5.2. Temperature Changes in Water Supply	Applies to all equipment on January 1, 2002	When using a master metering systems to gauge or calibrate milk tanks, the official shall monitor the temperature of the water before and after the supply source changes. If the new water source temperature changes by more than 2.8 °C from the old source reverify the master meter system accuracy.

5.54. Taximeters	S.7. Anti-fraud Provisions, Electronic Taximeters	Applies to all equipment on January 1, 2002	Electronic taximeters may have provisions to detect and eliminate input that is inconsistent with the output of the distance sensor, the meter shall; (1) filter out inconsistent distance signal or cease to increment fare based on distance, (2) provide a signal when detection occurs, and (3) record the occurrence in an event logger.
5.56.(a) Grain Moisture Meters	N.1.1. Air Oven Reference Method Transfer Standards	Applies to all equipment on January 1, 2002	<p>Official grain samples shall be used as the official transfer standard. The reference method for assigning moisture content values shall be oven drying methods as specified by USDA GIPSA. Tolerances shall be applied to the average of at least three measurements on each official grain sample.</p> <p>NOTE: The code recognizes that the NTEP on-going calibration program provides the level of calibration support required to permit states to develop a viable meter to like-type meter field testing program. The code no longer references the USDA GIPSA official meter as the transfer standard.</p>
	N.1.2. Minimum Test	Applies to all equipment on January 1, 2002	NOTE: The minimum test for a grain moisture meter no longer reference the USDA GIPSA official meter as the transfer standard.
	<p>Recognize Meter to Like-Type Meter Method Transfer Standards:</p> <ul style="list-style-type: none"> · N.1. Testing Procedures, · N.1.1. Air Oven Reference Method, · N.1.3. Meter to Like-Type Meter Method Transfer Standards, · T.2. Tolerances, · T.2. Air Oven Reference Method, · Table T.2.1. Acceptance and Maintenance Tolerances Air Oven Reference Method, 	Applies to all equipment on January 1, 2002	Code recognizes Air Oven and Meter to Like-Type Meter Method for Official Test of Grain Moisture Meters. (See specific code paragraphs for details.)

	<ul style="list-style-type: none"> · T.2.2. Meter to Like-Type Meter Method, and · Table T.2.2. Acceptance and Maintenance Tolerances Meter to Like-Type Meter Method 		
5.56.(b) Grain Moisture Meters	N.1.1. Transfer Standards	Applies to all equipment on January 1, 2002	The code no longer references the USDA GIPSA official meter as the transfer standard.
5.57. Near-Infrared Grain Analyzers (NIR) - Tentative Code	NIR Indication of Additional Constituent Values see paragraphs: <ul style="list-style-type: none"> · A.3.1. Dual Type Evaluations, · A.3.2. Calibrations, · S.1.1. (c), (e), and (g) Digital Indications and Recording Elements, · Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations, · S.1.3. (b) Operating Range, · S.2.5.2. Calibration Version, · Table N.1.1. Constant Moisture Basis for Type Evaluation and Field Inspection, · N.1.1. Field Inspection, · N.1.2. Standard Reference Samples, · T.1. To Underregistration and to Overregistration, · Table T.2. Acceptance and Maintenance Tolerances for NIR Grain Analyzers, · UR. 2. 1. Operating Instructions, · UR.2.3. Printed Tickets, and · UR.2.5. Sampling 	Applies to all equipment on January 1, 2002	The code now includes requirements for additional constituents; corn protein, oil, and starch; barley protein; soybeans protein and oil; and issues of moisture bases. (See specific code paragraphs for details.)

Definitions-Appendix D	belt-conveyor scale systems area	Applies to all equipment on January 1, 2002	The scale area refers to the scale suspension, weigh idlers attached to the scale suspension, 5 approach (-) idlers, and 5 retreat (+) idlers.
Definitions-Appendix D	electronic link	Applies to all equipment on January 1, 2002	An electronic link is an electronic connection between weighing/load receiving elements or other sensing elements and indicating element where one recognizes the other and neither can be replaced without calibration.
Definitions-Appendix D	manufactured device, remanufactured device, remanufactured element, repaired device, and repaired element	Applies to all equipment on January 1, 2002	<p>A manufactured device is any commercial weighing or measuring device shipped as new from the original equipment manufacturer.</p> <p>A remanufactured device/element is a device/an element that is disassembled, checked for wear, parts replaced or fixed, reassembled and made to operate like a new device/element of the same type.</p> <p>A repaired device/element is a device/element to which work is performed that brings the device/element back into proper operating condition.</p>
Definitions-Appendix D	section capacity	Applies to all equipment on January 1, 2002	A section capacity of a scale is the maximum live load that may be divided equally on the load pivots or load cells of a section.