Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices

as adopted by the 98th National Conference on Weights and Measures 2013

Editors:

Tina Butcher
Linda Crown
Rick Harshman
Juana Williams

Carol Hockert, Chief
Office of Weights and Measures
Physical Measurement Laboratory

U. S. Department of Commerce
Penny Pritzker, Secretary

National Institute of Standards and Technology
Patrick D. Gallagher, Under Secretary of Commerce for Standards and Technology and Director

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Foreword

Handbook 44 was first published in 1949, having been preceded by similar handbooks of various designations and in several forms, beginning in 1918.

Handbook 44 is published in its entirety each year following the Annual Meeting of the National Conference on Weights and Measures (NCWM). The Committee on Specifications and Tolerances of the NCWM developed the 2014 Edition with the assistance of the Weights and Measures Division (WMD) of the National Institute of Standards and Technology (NIST). This handbook includes amendments endorsed by the 98th National Conference on Weights and Measures during its Annual Meeting in 2013.

NIST has a statutory responsibility for "cooperation with the states in securing uniformity of weights and measures laws and methods of inspection." In partial fulfillment of this responsibility, NIST is pleased to publish these recommendations of the NCWM.

This handbook conforms to the concept of primary use of SI (metric) measurements recommended in the Omnibus Trade and Competitiveness Act of 1988 by citing SI units before inch-pound units where both units appear together and placing separate sections containing requirements in SI units before corresponding sections containing requirements in inch-pound units. In some cases, however, trade practice is currently restricted to the use of inch-pound units; therefore, some requirements in this handbook will continue to specify only inch-pound units until the NCWM achieves a broad consensus on the permitted SI units.

In accord with NIST policy, the meter/liter spellings are used in this document. However, the metre/litre spellings are acceptable, and are preferred by the NCWM.

It should be noted that a space has been inserted instead of commas in all numerical values greater than 9999 in this document, following a growing practice, originating in tabular work, to use spaces to separate large numbers into groups of three digits. This avoids conflict with the practice in many countries to use the comma as a decimal marker.

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2013 Amendments

The following table lists the codes, paragraphs, and pages in which the 98th National Conference on Weights and Measures made amendments. In the column headed "Action," changes are noted as "added," "amended," "deleted," or "renumbered." Each code, section, or paragraph that has been changed will be noted as "Added 2013" or "Amended 2013."

SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
Introduction	L. Classifications for Agenda Items	BOD Item 120-4	L. Classification for Agenda Items	Amended	4 to 5
			M. Developing Items	Deleted and renumbered remaining items	5 to 7
2.20.	Scales	320-1	S.6.4.	Amended	2-25
			Table S.6.4.M.	Added	2-26
			Table S.6.4.	Added	2-26
2.21.	Belt-Conveyor Scale Systems	321-1	UR.1.2.(h)	Deleted and renumbered remaining subparagraphs	2-69 to 2-70
3.30.	Liquid Measuring Devices	330-2	Table T.2.	Amended	3-21
3.31.	Vehicle-Tank Meters	331-1	Table 1.	Amended	3-40
		331-2	T.4.	Amended	3-41
			Table T.4.	Deleted	3-42
3.37.	Mass Flow Meters	337-3	Table T.2.	Amended	3-112
5.56.(a)	Grain Moisture Meters	356-1	Table S.2.5.	Amended	5-45
		356-2	UR.3.4.	Amended	5-49
Appendix C	General Tables of Units of Measurement	320-4	Units of Mass	Established uniform abbreviation for "short ton" and added footnote regarding effective dates.	C-6
			Avoirdupois Units of Mass	Established uniform abbreviation for "short ton" and added footnote regarding effective dates.	C-20
Appendix D	Definitions	320-1	weigh module	Added	D-29
		321-2	belt load	Added	D-7
			belt revolution	Added	D-7
			integrator	Added	D-15
			loading point	Amended	D-16
			master weight totalizer	Amended	D-17

2013 Editorial Changes

SECTION	CODE	PARAGRAPH	ACTION	PAGE
2.21.	Belt-Conveyor Scales	N.2.3.	Replaced "(a)" and "(b)" in the latter section of the paragraph with "1." and "2." as in earlier editions of the handbook.	2-65
Appendix C	General Tables of Units of Measurement	Units of Capacity or Volume – Liquid Volume Measurement	Corrected milliliter equivalent of one gallon by deleting 3785.41 784 and replacing it with the correct value of 3785.411 784 milliliters.	C-12