

2021 Revision Index

See the 2020 changes to NIST Handbooks 44, 130 and 133

On December 16, 2019, the Office of Administrative Law approved the proposed amendments to the Electric Vehicle Fueling Systems Specifications in the CCR Title 4, §§ 4001 and 4002.11. These changes became effective January 1, 2020.

§ 4001. Exceptions. See [Barclays](#) for Actual Text

3.40. Electric Vehicle Fueling Systems - Tentative Code.

A.4. Type Evaluation.

S.1.3.2. EVSE Value of Smallest Unit.

S.2.4.1. Unit Price.

S.2.4.2. Equipment Capacity and Type of Voltage.

S.2.7. Indication of Delivery.

S.3.5. Temperature Range for System Components.

S.5.2. EVSE Identification and Marking Requirements.

N.2. Starting Load Test.

T.2. Load Test Tolerances.

T.2.1. EVSE Load Test Tolerances.

Appendix D. Definitions for: Electricity as Vehicle Fuel.

§ 4002. Additional Language. See [Barclays](#) for Actual Text

§ 4002.11. Electric Vehicle Fueling Systems.

3.40. Electric Vehicle Fueling Systems (Title)

A.4. Type Evaluation.

S.1.3.2. EVSE Value of Smallest Unit.

S.2.4.1. Unit Price.

S.2.4.2. Equipment Capacity and Type of Voltage.

S.2.7. Indication of Delivery.

S.3.5. Temperature Range for System Components.

S.5.2. EVSE Identification and Marking Requirements.

N.2. Starting Load Test.

T.2. Load Test Tolerances.

T.2.1. EVSE Load Test Tolerances.

Amendments/Editorial Changes

On January 23, 2020, the Office of Administrative Law (OAL) approved the proposed amendments to the Hydrogen Gas-Measuring Devices Regulation in CCR Title 4, Sections 4001 and 4002.9.

§ 4001. Exceptions. See [Barclays](#) for Actual Text

3.39 Hydrogen Gas-Measuring Devices - Tentative Code

A.2. Exceptions. (c). Devices used for dispensing a hydrogen gas with a hydrogen fuel index lower than 99.97 % and concentrations of specified impurities that exceed level limits.

A.4. Type Evaluation.

T.2. Tolerances.

Table T.2.

§ 4002. Additional Language. See [Barclays](#) for Actual Text

§ 3.39. 4002.9. Hydrogen Gas-Measuring Devices Hydrogen Gas-Measuring Devices

A.4. Type Evaluation.

S.5.2. Location of Accuracy Class 2.0, 3.0, 5.0, 7.0, and 10.0.

T.2. Tolerances.

On May 4, 2020, the Office of Administrative Law (OAL) approved the proposed amendments to the Fireplace and Stove Wood in CCR Title 4, Sections 4530 through 4536.2. These changes are effective upon filing on July 1, 2020.

Article 3. Fireplace and Stove Wood - See [Barclays](#) for Actual Text

§ 4530. Method of Sale.

§ 4531. Additional Requirements for Kindling.

Repealed §§ 4533. Kindling. through § 4536.2. Bundles and Bags of Firewood.

Note: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code; and *California Hotwood, Inc. v. Henry Voss*, et al. (Super. Ct. San Joaquin County, 1991, No. 234613).

NIST Handbooks - Amendments and Editorial Changes:

[NIST HB 44, 2020 Edition](#): Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices

Amendments/Editorial Changes [DOC](#) | [PDF](#)

[NIST HB 130, 2020 Edition](#) - Uniform Packaging and Labeling Regulation – Chapter 4, Uniform Regulations

Amendments/Editorial Changes [PDF](#)

[NIST HB 133, 2020 Edition](#) - Checking the Net Contents of Packaged Goods

Amendments/Editorial Changes [DOC](#) | [PDF](#)

The following tables lists the codes, paragraphs, and pages in which the 104th 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 2019” or “Amended 2019.”

2019 HB 44 Amendments to the 2020 Edition					
SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
1.10.	General	GEN-2	G-S.8.2.	Added	1-9
2.20.	Scales	SCL-1	S.1.1.1.(c)	Added	2-7
			UR.2.10.	Added	2-49
		SCL-5	S.1.11.	Amended	2-13
			S.1.11.1., S.1.11.2.	Added	2-13
2.21.	Belt-Conveyor Scale Systems	BCS-1	S.1.3.1.	Amended	2-59
			S.1.3.3.	Added	2-60
			S.1.9.	Amended	2-61
			S.4.	Added. Subsequent paragraphs renumbered	2-62
			S.5.	Renumbered from S.4. and Amended	2-62
			S.6. and Table S.6.	Renumbered from S.5. and Table S.5.and updated to reflect the revised Table number	2-63

Amendments/Editorial Changes

2019 HB 44 Amendments to the 2020 Edition					
SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
			N.1.	Amended	2-63
			N.2.1.	Amended	2-64
			N.2.2.	Amended	2-64
			N.2.3.1. and N.2.3.2.	Amended	2-65
			N.3.1.2. and N.3.1.3.	Amended	2-66
			N.3.2.	Amended	2-66
			N.3.2.1.	Amended	2-67
			T.1., T.1.1.	Amended	2-68
			T.2.1.	Amended	2-69
			T.2.2.	Added	2-69
			UR.3.(a), Table UR.3.	Amended	2-72
2.22.	Automatic Bulk Weighing Systems	ABW-2	S.1.6.	Amended	2-78
2.24.	Automatic Weighing Systems	AWS-2	S.1.3.	Amended	2-97
		AWS-3	S.3.2.	Amended	2-99
3.30.	Liquid- Measuring Devices	LMD-1	S.2.2.	Amended	3-12
		LMD-2	N.4.6.	Renumbered from N.4.1.2. and Amended	3-20
			T.3.	Amended	3-21
		LMD-3	A.1., S.1.6.10., S.2.5., S.4.4.1., S.4.4.2., S.5., N.4.4.2., UR.2.4., UR.2.5.	Amended	3-5 to 3-43
LMD-5	UR.3.4.	Amended	3-24		
3.31.	Vehicle-Tank Meters	VTM-2	S.2.2.	Amended	3-34
		VTM-3	N.4.7.	Renumbered from	3-40

2019 HB 44 Amendments to the 2020 Edition

SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
				N.4.1.2. and Amended	
			N.4.1.2.	Renumbered from N.4.1.3.	3-39
			T.3.	Amended	3-42
3.32.	LPG and Anhydrous Ammonia Liquid- Measuring Devices	LPG-1	S.2.2.	Amended	3-52
		LPG-2	S.2.5.	Amended	3-53
		LPG-4	N.4.4.	Renumbered from N.4.1.2. and Amended	3-57
			T.3.	Amended	3-57
3.33.	Hydrocarbon Gas Vapor- Measuring Devices	HGV-1	S.2.2.	Amended	3-65
		HGV-2	N.4.3.	Renumbered from N.4.1.2. and Amended	3-67
			T.2.	Amended	3-68
3.34.	Cryogenic Liquid- Measuring Devices	CLM-2	S.2.5.	Amended	3-78
		CLM-3	N.5.3.	Renumbered from N.5.1.1. and Amended	3-81
			T.4.	Amended	3-82
3.35.	Milk Meters	MLK-1	S.2.3.	Amended	3-89
		MLK-2	N.4.4.	Renumbered from N.4.1.1. and Amended	3-92
			T.3.	Amended	3-92
3.36.	Water Meters	WTR-1	S.2.1.	Amended	3-99
		WTR-2	N.4.4.	Renumbered from N.4.1.1. and Amended	3-102
3.37.	Mass Flow Meters	MFM-2	S.1.3.3.	Amended	3-108
		MFM-3	S.2.9.	Added	3-110
		MFM-1	S.3.5.	Amended	3-111
		MFM-4	S.5.1.	Amended	3-114

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2019 HB 44 Amendments to the 2020 Edition					
SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
		MFM-6	N.6.3.	Renumbered from N.6.1.1. and Amended	3-116
			T.3.	Amended	3-117
3.38.	Carbon Dioxide Liquid- Measuring Devices	CDL-3	S.2.5.	Amended	3-125
		CDL-4	N.4.5.	Renumbered from N.4.1.1. and Amended	3-134
			T.2.1.	Amended	3-134
3.39.	Hydrogen Gas- Measuring Devices	HGM-4	S.2.8.	Added	3-141
		HGM-3	S.3.3.	Amended	3-141
		HGM-5	N.6.2.	Renumbered from N.6.1.1. and Amended	3-145
			T.3.	Amended	3-146
		HGM-6	Preamble	Deleted references to the “tentative” status and designated the Code as “permanent”	3-139
			A.2.(c).	Amended	3-139
			N.2., N.3., N.4.2., N.4.3.	Amended	3-145
3.40.	Electric Vehicle Fueling Systems	EVF-2	S.2.8	Added	3-156
		EVF-1	S.3.3.	Amended	3-157
		EVF-4	Definition for “power factor”	Amended	3-166
5.55.	Timing Devices	TIM-1	S.4.	Amended	5-43

2019 HB 44 Amendments to the 2020 Edition

SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
5.54.	Taximeters	TXI-1	N.1.3.2.1.	Deleted and renumbered subsequent paragraph.	5-35
5.56.(a)	Grain Moisture Meters	GMA-1	S.2.5.	Amended	5-52
		GMA-2	Table S.2.5.	Amended	5-53
5.58.	Multiple Dimension Measuring Devices	MDM-1	S.1.11.	Amended	5-86
Appendix D	Definitions	HGM-6	audit trail	Amended to include references to 3.39. and other relevant codes	D-5
			calibration parameter		D-8
			configuration parameter		D-9
			discharge hose		D-11
			discharge line		D-11
			equipment, commercial		D-12
			event counter		D-12
			event logger		D-12
			point-of-sale system		D-22
			remote configuration capability		D-24
			retail device		D-24
			wet hose		D-30
		wet hose-type	D-30		
		HGM-6	automatic temperature or density compensation	Amended to add a reference to "hydrogen gas"	D-6

Amendments/Editorial Changes

2019 HB 44 Amendments to the 2020 Edition					
SECTION	CODE	S&T ITEM NO.	PARAGRAPH	ACTION	PAGE
		HGM-6	minimum measured quantity	Added	D-18
			non-resettable totalizer	Added	D-20

2019 HB 44 Editorial Changes to the 2020 Edition					
SECTION	CODE	PARAGRAPH	ACTION	PAGE	
3.30	Liquid-Measuring Devices	Table 1. Money-Value Divisions and Maximum Allowable Variations for Money-Value Computations on Mechanical Analog Computers	Reformatted the first two columns of the last two rows addressing unit prices from \$0.75/liter (or \$3.00/gal) to \$2.50/liter (or \$10.00/gal) for clarity of application.	3-9	
		T.4.	Delete “for results” and make “error” plural to clarify the application of the tolerance.	3-21	
3.31	Vehicle-Tank Meters	T.2.	Updated the reference to Table 1 to reflect the change in its title.	3-40	
		Table 1, T.2.	Add “Other Than Vehicle-Mounted Milk Meters” to the title of Table 1 to distinguish its scope from that of Table 2.	3-40 and 3-41	
		T.2.1.	Delete “for results” and make “error” plural to clarify the application of the tolerance.	3-42	
3.32	LPG & Anhydrous Ammonia	T.4.	Delete “for results” and make “error” plural to clarify the application of	3-58	

2019 HB 44 Editorial Changes to the 2020 Edition

SECTION	CODE	PARAGRAPH	ACTION	PAGE
	Liquid-Measuring Devices		the tolerance.	
		Table 1. Money-Value Divisions and Maximum Allowable Variations for Money-Value Computations on Mechanical Analog Computers	Reformatted the first two columns of the last two rows addressing unit prices from \$0.75/liter (or \$3.00/gal) to \$2.50/liter (or \$10.00/gal) for clarity of application.	3-50
Appendix B	Units and Systems of Measurement	Multiple sections, including: <ul style="list-style-type: none"> • 2.1. Origin and Early History of Units and Standards • 2.2. The Metric System • 3.2. Standards of Mass 	Revisions made throughout the Appendix to: (1) reference 2019 actions in the U.S. and internationally to redefine the traceability of mass measurements based on Planck's constant; and (2) clarify the use and definitions of the International System of Units.	B-3 through B-10
Appendix C	General Table of Units of Measurement	Footnote 9 and 10	Added notice regarding deprecation of U.S. survey foot.	C-8 and C-10
Appendix D	Definitions	unit price	Updated Code References to include 3.39 Hydrogen Gas-Measuring Devices.	D-28

2019 HB 130 Amendments to the 2020 Edition

2.15. SI or SI Units. – SI or SI Units means the International System of Units as established in 1960 by the General Conference on Weights and Measures (CGPM) and interpreted or modified for the United States by the Secretary of Commerce. See the “Interpretation of the International System of Units for the United States” in the “Federal Register” (Volume 73, No. 96, pages 28432 to 28433) for May 16, 2008, and 15 United States Code, Section 205a - 2051 “Metric Conversion.” See also NIST Special Publication 330, *The International System of Units (SI), 2019 edition* and NIST Special Publication 811, *Guide for the Use of the International System of Units (SI)*, 2008 edition that are available at www.nist.gov/pml/weights-and-measures/publications/metric-publications or by contacting **TheSI@nist.gov**.

(Added 1993) (Revised 2019)

6.3.2. Use of “Net Contents” – When stating the net quantity of contents in terms of fluid measure or numerical count, a quantity declaration may stand alone [e.g., “177 mL (6 fl oz)”] or may include the term “net” or “net contents” either preceding or following the declaration.

(Amended 2019)

11.25. Pillows, Cushions, Comforters, Mattress Pads, Sleeping Bags, and Similar Products. – Those products including pillows, cushions, comforters, mattress pads, and sleeping bags that bear a permanent label as designated by the International Association of Bedding and Furniture Law Officials (**iabflo.org**) or the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS) (**bhgs.dca.ca.gov**) shall be exempt from the requirements for location (Section 8.1.1. Location), size of letters or numbers (Sections 8.2.1. Minimum Height of Numbers and Letters and 8.2.2. Numbers and Letters: Proportion), free area (Section 8.1.4. Free Area), and the declarations of identity and responsibility (Sections 3.1. Declaration of Identity and 5. Declaration of Responsibility: Consumer and Non-Consumer Packages), provided declarations of identity, quantity, and responsibility are presented on a permanently attached label and satisfy the other requirements of this Regulation, and further provided the information on such permanently attached label be fully observable to the purchaser.

(Added 1973) (Amended 2019)

The following items were deemed editorial in nature based on the following criteria: 1) the modified text did not change the meaning or procedure outlined, 2) modified text corrected an omission or clarified how the text was written, or 3) the item itself was reformatted and relocated in the text to make the organization of the content more meaningful.

Note: For the purposes of this table, the **bold, underscored** text indicates new language added and **bold, strikeout** text indicates deleted text.

2019 HB 133 Editorial Changes for the 2020 Edition			
Chapter	Section	Action	HB 133 Page
Introduction	A. Source	Updated URL and E-mail	1
	C. Amendments	Updated URL's	1
	H. The International System of Units	Updated acronym for General Conference on Weights and Measures (GIPM CGPM)	2
Chapter 1. General Information	1.3. Sampling Plans	Clarified the instruction to read acceptable lots a 9795 % probability of passing.	9
Chapter 2. Test Procedures – Packages Labeled by Weight	2.2.5. Other Test Equipment Requirements	1. Mass Standards – Use NIST Handbook 105-1, “Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures – Field Standard Weights (NIST Class F)” (1990) (2019)	17
Chapter 3. Test Procedures – For Packages Labeled by Volume	Table 3-1	Added acronym to title. Code of Federal Regulation (CFR) Reference*	46
	Table 3-8. Test Measures for Animal Bedding	Corrected title: Rectangular and Square Test Measures	101
		(its internal radius is 151. 77515 mm and its height is 610 mm)	106

Amendments/Editorial Changes

2019 HB 133 Editorial Changes for the 2020 Edition			
Chapter	Section	Action	HB 133 Page
	Table 3-9. Illustrations of Depth Determinations with Cylindrical Test Measures	The volume was calculated using: $Volume\ in\ liters = (\pi r^2 h \text{ Pi})\ 3.14159265 \text{ (Pi)} \times 23035.69\ mm \times 130.12\ mm = 9.41\ L^*$	106
	3.15.3. Evaluation of the Test Results and Determination of Pass or Fail	2. If the Average Error is a negative value go to Step 43 . on the Inspection Worksheet.	113
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	4.9. Procedure for Checking the contents of Specific Agriculture Seed Packages Labeled by Count	4.2.3. 4.9.3. Evaluation of Results	137
Appendix C. Model Inspection Report Forms	Measurement Grid and Package Error Worksheet for Cylindrical and Square or Rectangular Test Measures	Editorial change: C. Average Depth (Sum of Measurements \div 269):	185
Appendix E. General Tables of Units of Measurement	Footnote 9 and 10	Added notice regarding deprecation of U.S. survey foot.	219 and 221
Appendix F. Glossary	Sample Correction Factor	The factor as computed is the ratio of the 97.5 95th quantile of the student's t distribution (one-sided) with (n - 1) degrees of freedom and the square root of n where n is the sample size.	240

2019 HB 133 Editorial Changes for the 2020 Edition

Chapter	Section	Action	HB 133 Page
	Sample Error Limit (SEL)	The SEL value allows for the uncertainty between the average error of the sample and the average error of the inspection lot with an approximately 97.5 <u>95</u> % level of confidence.	240