

2023 Amendments

The following table lists the codes, paragraphs, and pages in which the 108th National Conference on Weights and Measures adopted 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 2023” or “Amended 2023.”

Section	Code	S&T Item No.	Paragraph	Action	Page
1.10.	General	B4: GEN-21.2	G-S.5.6. Recorded Representations.	Amended	1-8
		GEN-23.1	G-N.3. Test Methods.	Amended	1-11
		B8: GEN-19.1	G-T.5. Tolerances on Tests When Type 2 Transfer Standards Are Used.	Added	1-11
2.20.	Scales	SCL-22.1	S.1.15. Recorded Representations, Multi-Independent Platform Vehicle Scale Systems.	Added	2-15
		SCL-23.2	Table S.6.3.b. Notes for Table S.6.3.a. Marking Requirements Note 28. Weigh-in-Motion Vehicle Scales; Vehicle Restriction	Added	2-24
3.30.	Liquid-Measuring Devices	B4: LMD-21.2	S.1.6.5.6.(d) Display of Quantity of Total Price, Aviation Refueling Applications	Amended	3-10
			S.1.6.7. Recorded Representations.	Amended	3-11
			S.1.6.8. Recorded Representations for Transactions Where a Post-Delivery Discounts(s) is Provided.	Amended	3-11
		LMD-23.2	N.3.5. Wholesale Devices	Amended (Adopted language moved to new paragraph N.3.5.1. by LMD-23.4)	3-17
		LMD-23.4	N.3.5. Wholesale Devices	Amended	3-17
		B1: LMD-23.1	N.3.5.3. Field Standard Meter Test.	Added	3-18
		B4: LMD-21.2	UR.3.3.(b)(1) Computing Device	Amended	3-23
		B4: LMD-21.2	UR.3.4. Recorded Representations.	Amended	3-24

3.31.	Vehicle-Tank Meters	B4: VTM-21.1	S.1.1.1. General.	Amended	3-31
			S.1.1.1. General; Note	Deleted	3-31
			S.1.4.2. Recorded Representation.	Amended	3-33
		VTM-18.1	S.3.1.(b)(2) Diversion of Measured Liquid.	Amended	3-36
			S.3.1.1.(f),(g) Means for Clearing the Discharge Hose, Multi-Product, Single Product, Single-Discharge Hose Metering Systems	Amended	3-36
		B5: VTM-23.2	N.3. Test Drafts.	Amended	3-39
		B1: VTM-23.1	N.3.1. Field Standard Meter Test.	Added	3-39
		B4: VTM-21.1	UR.2.2. Recording Element.	Amended	3-42
		VTM-18.1	UR.2.6.1. Clearing the Discharge Hose, General	Added	3-43
			UR.2.6.2. Minimizing Cross Contamination.	Added	3-43
			UR.2.6.3. Records	Renumbered from UR.2.6.1.	3-43
		3.32.	Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices	B4: LPG-21.1	S.1.1.1. General, Note
S.1.1.6. Recorded Representation	Amended				3-51
S.1.5.5. Recorded Representations for Transactions Where a Post-Delivery Discount(s) is Provided.	Amended				3-54
LPG-23.2	S.2.6.1. Electronic Stationary (Other than Stationary Retail Motor-Fuel Dispensers).			Amended	3-54
	S.2.6.3. Electronic Vehicle-Mounted Meters.			Added	3-54
LPG-15.1	N.3.1. Minimum Test.			Amended	3-56
	N.3.2. Field Standard Meter Test.			Added	3-56
B4: LPG-21.1	UR.2.6. Recorded Representation			Amended	3-59
	UR.2.7.2.(b)(1) Computing Device.			Amended	3-60

3.34	Cryogenic Liquid-Measuring Devices	B4: CLM-21.1	S.1.4.1. Recorded Representation	Amended	3-79
		B7: CLM-22.1	T.3. On Tests Using Type 2 Transfer Standards	Amended	3-84
		B4: CLM-21.1	UR.2.6.2. Recorded Representation Based on Automatic Compensator Readings	Amended	3-86
			UR.2.6.3. Recorded Representation for Computing Devices	Amended	3-86
3.35.	Milk Meters	B4: MLK-21.1	S.1.4.2. Recorded Representation	Amended	3-91
		B1: MLK-23.1	N.3.1. Test Drafts.	Amended	3-93
			N.3.2. Field Standard Meter Test.	Added	3-94
		B4: MLK-21.1	UR2.2. Recorded Representation	Amended	3-95
3.37.	Mass Flow Meters	B4: MFM-21.2	S.6.(b), (c), (e), and (f) Recording Element	Amended	3-117
			S.6.1. Recorded Representation	Amended	3-117
		MFM-15.1	N.3.1. Minimum Test.	Amended	3-117
			N.3.2. Field Standard Meter Test.	Added	3-117
		B4: MFM-21.2	UR.3.3. Recorded Representation, Vehicle-Mounted Measuring Systems	Amended	3-121
			UR.3.4. Recorded Representation for Computing Devices	Amended	3-121
3.38.	Carbon Dioxide Liquid-Measuring Devices	B4: CDL-21.1	S.1.4.1. Recorded Representation.	Amended	3-127
			UR.2.4.2. Recorded Representation.	Amended	3-137
		B7: CDL-22.1	T.3. On Tests Using Type 2 Transfer Standards.	Amended	3-136
3.39.	Hydrogen Gas-Measuring Devices	B4: HGM-21.1	S.2.6. Recorded Representations, Point of Sale Systems	Amended	3-143
			S.6. Recording Element	Amended	3-146

			S.6.1. Recorded Representation.	Amended	3-146
		B7: HGH-22.1	T.4. Tolerance Application on Tests Using Type 2 Transfer Standard Test Method.	Amended	3-148
		B4: HGM-21.1	UR.3.2. Vehicle-Mounted Measuring Systems Recording Element	Amended	3-150
			UR.3.2.1. Recording Element	Amended	3-150
			UR.3.3. Recorded Representation.	Amended	3-150
3.40.	Electric Vehicle Fueling Systems	EVF-23.1	S.2.5.1. Money-Value Division Digital	Amended	3-155
			S.5.2.(b) EVSE Identification and Marking Information; maximum current deliverable	Amended	3-159
			S.5.3.(d) Abbreviations and Symbols; joule	Amended	3-159
			S.8. Minimum Measured Quantity (MMQ)	Amended	3-160
			N.1. No Load Test	Deleted	3-160
			N.2. Starting Load Test	Deleted	3-160
			T.5. No Load Test	Deleted	3-161
			T.6. Starting Load	Deleted	3-161
5.56.(a)	Grain Moisture Meters	GMA-23.1	N.1.3. Meter to Like-Type Meter Method Transfer Standards.	Amended	5-55
			T.2.2. Note	Added	5-56
Appendix A.	Fundamental Considerations	B8: OTH-22.1	3.1.1. Essential Elements of Traceability	Added	A-4
			3.1.2. Specifications for Standards.	Added	A-5
			3.1.3. Authority for Approving Field Test Standards and/or Equipment	Added	A-5
			3.2. Tolerances for Standards.	Amended	A-5
			3.3. Accuracy of Field Standards	Amended	A-6
			Footnote 2; Recommendation for Suitable Field Standards	Deleted	A-6

		B8: GEN-19.1	field standard	Added	D-15
Appendix D.	Definitions	EVF-23.1	megajoule (MJ)	Deleted	D-20
		B4: OTH-21.2	recorded representation.	Amended	D-27
			recording element.	Amended	D-27
		B8: GEN-19.1	standard, transfer, Type 1 and Type 2	Added	D-30

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2023 Editorial Changes

Section	Code	Paragraph	Action	Page
Introduction		A. Source	Updated NCWM street address and zip code	1
		Form 15	updated	4
1.10	User Requirements	U.R.3.4.	Recorded Representations.	1-13
2.23	Weights	N.1. Testing Procedures	Updated text because of a modification to the title of Appendix A, Fundamental Considerations' paragraph 3.3. Accuracy of Field Standards as a result of the adoption of B8: OTH-22.1.	2-94
3.30	Specifications	S.1.6.7. Recorded Representation	In 2018, subparagraph (e) <i>the dispenser designation by either an alphabetical or numerical description.</i> ** **[Nonretroactive as of January 1, 2021] was adopted and appeared in HB44 (2019). In error, it did not appear in HB44 editions 2019 and 2021.	3-11
		S.1.6.8. Recorded Representations for Transactions Where a Post-Delivery Discount(s) is Provided	In 2018, subparagraph (e) <i>the dispenser designation by either an alphabetical or numerical description.</i> [Nonretroactive as of January 1, 2021] was adopted and appeared in HB44 (2019). In error, it did not appear in HB44 editions 2019 and 2021.	3-11
		N.4.1. Normal Tests.	For clarity added a formula <u>As a formula, this is stated as:</u> $\frac{MDFR + RMDFR}{2}$ <u>= minimum discharge flow rate for additional tests</u>	3-18
3.31	Specifications	S.1.1.1. General	Note: Vehicle-mounted metering systems shall be equipped with a primary recording element as required by paragraph UR.2.6. <u>Recorded Representations.</u>	3-31
3.34	User Requirements	UR.2.5. Conversion Factors	All sales of cryogenics shall be based on either kilograms or pounds, liters or gallons of liquid at <u>Normal Boiling Point (NBP)</u> , cubic meters of gas or cubic feet of gas at <u>Normal Temperature and Pressure (NTP)</u> .	3-85
3.35	Specifications	S.1.4.2.	Recorded Representations.	3-91
	User Requirements	UR.2.2.	Recorded Representations. – Any recorded representation <u>created issued</u> by a device of the computing type which includes the total computed price, the total quantity, or the price per unit of quantity, shall also include the other two values and shall comply with G-S.5.6. Recorded Representations.	3-95

Section	Code	Paragraph	Action	Page
3.37	Specifications	S.6.1.	Recorded Representations.	3-117
	User Requirements	UR.3.4.	Recorded Representations.	3-121
3.38	User Requirements	UR.2.4.3.	Recorded Representations.	3-137
3.39	Specifications	S.6.1.	Recorded Representations.	3-146
5.56.(a)		Note below the title.	Section 5.56. was reorganized into two sections beginning with the 1997 Edition of NIST Handbook 44. This Section, 5.56.(a), applies to all NTEP grain moisture meters. It also applies to any grain moisture meter manufactured or placed into service on or after January 1, 1998.	5-49
Appendix D	Definitions	recorded representation	recorded representation, EVSE . – The printed, electronically recorded, or other representation that retains a copy of the quantity and any other required information generated by a weighing or measuring device. [3.40]	D-28
		recording element	recording element, EVSE . – An element incorporated, connected to, or associated with a weighing or measuring device by means of which its performance relative to quantity or money value is permanently recorded in a printed or electronic form. [3.40]	D-28