2022 Amendments

The following table indicates the items amended by the 107th (2022) National Conference on Weights and Measures (NCWM). As appropriate, the text on the cited pages indicates the changes to a Handbook 133 section, or paragraph as "Added 2022" or "Amended 2022." Unless otherwise noted, the effective date of the regulations added or amended in 2022 is January 1, 2023.

Chapter	L&R Committee Item No.	Section	Action	Page
Chapter 1. General Information	NET-19.1	Section 1.2.4. Maximum Allowable Variation	Amended	7
		1.2.4.1. Total Quantity MAV for Multiunit and Variety Packages	Added	8
Chapter 2. Test Procedures for Packages Labeled by Weight – Gravimetric Testing	NET-19.2	Section 2.1. Scope	Note added	13
		Section 2.3.7.1 Maximum Allowable Variation (MAV) Requirement	Note added	25
		Section 2.7.3. Evaluation of Results – Compliance Determinations	Note added	41
Chapter 3. Test Procedures – For Packages Labeled by Volume	NET-19.2	Section 3.1. Scope	Note added	45
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	NET-19.2	Section 4.1. Scope	Note added	113
Chapter 5. Specialized Test Procedures	NET-19.3	Chapter 5	Added	149 - 154
Appendix F. Glossary	NET-19.4	Multiunit package	Added	249
		Total quantity MAV	Added	252
		Variety package	Added	233

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2022 Editorial Changes

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.

Chapter	Section	Action	Page
Chapter 2. Test Procedures – Packages Labeled by Weight - Gravimetric Testing	Table 2-3 Notes	The notes were included within the content of the table as opposed to after the table.	27
Chapter 3. Test Procedures – For Packages Labeled by Volume	3.2. Gravimetric Test Procedure for Non-Viscous Liquids	Example content updated and format switched to a table layout.	47
		~~**A p**~~**P**artial immersion thermometer ~~**(**~~or equivalent~~**)**~~ with ~~**a range of − 35 °C to + 50 °C (30 °F to 120 °F), at least**~~ 1 °C (~~**1**~~**2** °F) graduations~~**,**~~ and ~~**with**~~ a ~~**tolerance of**~~ **− 35 °C to + 50 °C (− 30 °F to + 120 °F) accurate to** ± 1 °C (± 2 °F).	47
	Example for Determining Scale Suitability	Formatted and clarified example content in a table	49
	3.3. Volumetric Test Procedure for Non-Viscous Liquids	~~**A p**~~**P**artial immersion thermometer ~~**(**~~or equivalent~~**)**~~ with ~~**a range of − 35 °C to + 50 °C (30 °F to 120 °F), at least**~~ 1 °C (~~**1**~~**2** °F) graduations~~**,**~~ and ~~**with**~~ a ~~**tolerance of**~~ **− 35 °C to + 50 °C (− 30 °F to + 120 °F) accurate to** ± 1 °C (± 2 °F).	52
	3.11.1. Test Equipment	~~**A p**~~**P**artial immersion thermometer ~~**(**~~or equivalent~~**)**~~ with ~~**a range of − 35 °C to + 50 °C (30 °F to 120 °F), at least**~~ 1 °C (~~**1**~~**2** °F) graduations~~**,**~~ and ~~**with**~~ a ~~**tolerance of**~~ **− 35 °C to + 50 °C (− 30 °F to + 120 °F) accurate to** ± 1 °C (± 2 °F).	74
	3.14.2.b. Stacked Firewood	Clarified calculation Width of Stack. This dimension is calculated by averaging the	92

Chapter	Section	Action	Page
		length of individual pieces of wood in the stack **and multiplying it by the number of rows**. ***Width of Stack = Average Piece Length (APL) × Number of Rows***	
	3.14.3. Field Audit Procedure – Bundled and Bagged Firewood	After the bundle or bag is secured, use a flexible measuring tape to measure the circumference near each end of the bundle or bag of firewood ~~as shown in~~ **(see** Figure 3-13a. "Strapping the Ends of a Bundle"**).** Using one movement, extend the measuring tape around the end of the bundle or bag to obtain its circumference **(see Figure 3-13b. "Measuring the Circumference of the Bundle").**	94
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	4.8.1.2. Audit Test Procedure	**Note:** Graph paper of an appropriate size that allows for tracing of the entire chamois shall be used. However, if a single sheet of appropriate-sized graph paper is not available, it may be necessary to tape sheets of graph paper together to create an area sufficient in size to measure the area for a chamois (e.g., chamois greater than 23.22 dm^2 **[**2.5 ft^2**]**).	134
	4.8.2.2. Test Procedure	6. Calculate the area of the rectangle cut from the pattern by multiplying the length by width and record as Area (A) in **square** centimeters or square inches**.**	134
Appendix E. General Tables of Units of Measurement	Units of Capacity or Volume – Dry Volume Measure	Correct the equivalent for dry pint ~~1.12~~ **33.600 312 5** cubic inches"	224
	General Tables of Units	• Information was expanded to fully describe the retirement of the U.S. survey foot, including three new tables that present U.S. survey unit conversion factors in terms of the International foot. Section 2 surveying length and area tables were reformatted to	197–225

Chapter	Section	Action	Page
		align with the U.S. survey foot retirement FRN. • Several NIST publications, Federal Register Notices, and federal statutes and code of regulations references were updated in the footnotes. Website URLs were verified and updated. • Unit symbols and abbreviations were added to the "starting units" column to improve usability. • Removed the ångström unit to align with the latest edition of the BIPM SI Brochure and NIST SP 330, as it was eliminated in 2019. • Added footnote guidance for users to consult federal/state laws and regulations and industry documentary standards to confirm the barrel quantity used for a specific application.	
Appendix G. Table of Acronyms		Added	251