

SWMA Laws and Regulations Committee 2015 Annual Meeting Report

Mr. Jason Glass, Chair
Kentucky

October 25-28, 2015
Biloxi, Mississippi

200 INTRODUCTION

The Laws and Regulations (L&R) Committee (hereinafter referred to as “Committee”) submits its Report to the Southern Weights and Measures Association (SWMA). The Report consists of the SWMA Agenda (NCWM Carryover and NEW items) and this Addendum. Page numbers in the tables below refer to pages in this Addendum. Suggested revisions to the handbook are shown in **bold face print** by ~~striking out~~ information to be deleted and underlining information to be added. Requirements that are proposed to be nonretroactive are printed in **bold-faced italics**.

Presented below is a list of agenda items considered by the SWMA and its recommendations to the NCWM Laws and Regulations Committee.

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Table B
Glossary of Acronyms and Terms

Acronym	Term	Acronym	Term
AAFCO	Association of American Feed Control Officials	IRS	Internal Revenue Service
AKI	Minimum Antiknock Index	LNG	Liquefied Natural Gas
ASTM	ASTM International	MATG	Moisture Allowance Task Group
ATC	Automatic Temperature Compensation	MON	Motor Octane Number
BTU	British Thermal Unit	MAV	Maximum Allowable Variation
CFR	Code of Federal Regulations	NFPA	National Fire Protection Association
CNG	Compressed Natural Gas	NGSC	Natural Gas Steering Committee
CRC	Coordinating Research Council	OIML	International Organization of Legal Metrology
CVEF	Clean Vehicle Education Foundation	NCWM	National Conference on Weights and Measures
CWMA	Central Weights and Measures Association	NEWMA	Northeastern Weights and Measures Association
		NIST	National Institute of Standards and Technology
DGE	Diesel Gallon Equivalent	OWM	Office of Weights and Measures
DLE	Diesel Liter Equivalent	PALS	Packaging and Labeling Subcommittee
DOE	Department of Energy	RMFD	Retail Motor Fuel Dispenser
EPA	Environmental Protection Agency	S&T	Specifications and Tolerances
FALS	Fuels and Lubricants Subcommittee		
FDA	Food and Drug Administration		
FPLA	Fair Packaging and Labeling Act	SP	Special Publication
FSIS	Food Safety and Inspection Service	SWMA	Southern Weights and Measures
FTC	Federal Trade Commission	TG	Task Group
GGE	Gasoline Gallon Equivalent	UPLR	Uniform Packaging and Labeling Regulation
GLE	Gasoline Liter Equivalent	USNWG	U.S. National Work Group
GM	General Motors	WG	Work Group
L&R	Laws and Regulations	WWMA	Western Weights and Measures Association
HB 133	NIST Handbook 133, <i>Checking the Net Contents of Packaged Goods</i>		
HB 44	NIST Handbook 44, <i>Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices</i>		

Details of All Items
(In order by Reference Key)

**231 NIST HANDBOOK 130 – UNIFORM PACKAGING AND LABELING
REGULATION**

New Item 5 This Item as Withdrawn by Submitter

**232 NIST HANDBOOK 130 – UNIFORM REGULATION FOR THE METHOD OF
SALE COMMODITIES**

New Item 8 Section 1. Food Products and Section 2 Non-Food Products

Source:

Los Angeles County, California (2016)

Purpose:

Clarify and formalize the long-standing, fundamental, core tenet of legal metrology and weights and measures regulation that the sale of any commodity, in any form or by any method, be according to legally-recognized, traceable units of measure.

Item under Consideration:

Amend NIST Handbook 130 Uniform Regulation for the Method of Sale of Commodities as follows:

Section 1. Food Products [NOTE 1, page 109]

1.A. Any food product, whether sold from bulk or in packaged form, shall be sold only in a unit of measure or weight that meets all of the following criteria:

- i. Is recognized and defined by NIST as legal for use in commerce**
- ii. Has been published in the Federal Register**
- iii. Has metrological traceability to a national standard**

“Metrological traceability” means: the property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty.

NOTE: Sale of a product or commodity according to count, where appropriate to be fully informative to facilitate value comparison, is permissible as a method of sale.

1.A.1. Only the following commodities may be exempted from the method of sale limitations set forth in Section 1.A. and permitted to be sold according to “head” or “bunch,” as appropriate:

- (a) Asparagus**
- (b) Brussels Sprouts (on stalk)**
- (c) Rhubarb**
- (d) Edible Bulbs (onions [spring or green], garlic, leeks, etc.)**

- (e) Flower Vegetables (broccoli, cauliflower, brussel sprouts, etc.)
- (f) Leaf Vegetables (lettuce, cabbage, celery, parsley, herbs, loose greens, etc.)
- (g) Root Vegetables (turnips, carrots, radishes, etc.)

And

Section 2. Non-food Products [NOTE 1, page 109]

2.A. Any non-food product, whether sold from bulk or in packaged form, shall be sold only in a unit of measure or weight that meets all of the following criteria:

- i. Is recognized and defined by NIST as legal for use in commerce**
- ii. Has been published in the Federal Register**
- iii. Has metrological traceability to a national standard**

“Metrological traceability” means: the property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty.

NOTE: Sale of a product or commodity according to count, where appropriate to be fully informative to facilitate value comparison, is permissible as a method of sale.

2.A.1. The only exemption from the method of sale limitations set forth in Section 2.A. shall be retail sales of compressed natural gas sold as a vehicle fuel, which are permitted to be sold in terms of gasoline liter equivalent (GLE) or gasoline gallon equivalent (GGE) as defined in Section 2.27.1.

Background/Discussion:

Much discussion and debate has been undertaken within NCWM over the past two years regarding proposals for methods of sale of commodities (specifically, liquefied natural gas and compressed natural gas as vehicle fuels) based upon “equivalencies” to other methods of sale for different commodities (in these recent cases, based upon calculated average energy content comparisons to gasoline or diesel fuel). With the exception of a singular commodity, compressed natural gas, for which gasoline-liter-equivalent and gasoline-gallon-equivalent methods of sale were permitted some 20 years ago, the methods of sale for all other commodities have historically and consistently been established based upon legally-recognized units of weight or measure that are traceable to national standards maintained by NIST, the sole exceptions (found in interpretations and guidelines) being specific fresh vegetable commodities permitted to be sold by “head” or “bunch.” Discussions surrounding considerations of “equivalency” units have raised the potential for untold similar proposals to establish methods of sale for countless competing products in the marketplace claiming comparisons of performance, quality, energy or nutritional content, or other factors that can be subjective, widely varying due to inconsistent chemical or biological makeup, or a host of other influences that are, or may be, based upon little to no scientific or metrologically-sound and traceable determinations or calculations.

While a core tenet of weights and measures regulation and legal metrology – whether regarding design and function of weighing and measuring devices or sales of commodities - has always been widely recognized to require employment of units of measure that are recognized and published as legal for use and having metrological traceability, clear language in model laws and regulations developed by NCWM and published in NIST Handbooks is absent, likely never heretofore being deemed necessary due to the well-established, long-held tenet. This proposal serves to codify, memorialize, and specifically clarify that tenet as a formal adoption in the Uniform Regulation for the Method of Sale of Commodities to ensure against potentially misleading, confusing, or unclear business practices in commerce, whether in sales from bulk or in labeling of packaged commodities, that may be based upon observations, calculations, assumptions, or other considerations that may be subjective and not metrologically traceable.

SWMA Action: New Item 8	
Summary of comments considered by the regional committee (in writing or during the open hearings):	
A state official stated that the proposed language is possibly in conflict with the other sections within the CNG/LNG	

proposed items.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region: <input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee recommends that all sections within the proposed CNG/LNG items be reviewed to determine if additional exemptions are required to avoid language conflicts with this proposed language.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status: <input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee recommends that all sections within the proposed CNG/LNG items be reviewed to determine if additional exemptions are required to avoid language conflicts with this proposed language.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

232-1 Section 1.5. Meat, Poultry, Fish, and Seafood.

Source:

Massachusetts Division of Standards (2015)

Purpose:

To allow the retail sale of meat, poultry and fish by count with adequate consumer information.

Item under Consideration:

Amend NIST Handbook 130 Uniform Regulation for the Method of Sale of Commodities as follows:

1.5. Meat, Poultry, Fish, and Seafood. ^[NOTE 3, page 110] – Shall be sold by weight or count, except that whole shellfish in the shell may also be sold by ~~weight, measure, and/or count~~. Shellfish are aquatic animals having a shell, such as mollusks (for example, scallops) or crustaceans (for example, lobster or shrimp). **If sold by count, the net weight and the corresponding unit price shall be displayed on the principal display panel of the product. The unit price when sold by count shall also be advertised or displayed in terms of whole weight units of kilograms, pounds or ounces only, not in common or decimal fractions.**

(Amended 20XX)

Background/Discussion:

Several jurisdictions have reported that meat and meat products are routinely being sold by count both with and without a net weight declaration or unit price, many times alongside meat products that are being sold by weight. This approach does not give the consumer enough information to make value comparisons and may be misleading; however it is believed this amendment will remedy this. Retailers will benefit from this amendment by having more options for the method of sale of these products; consumers will benefit from this amendment because they will be able to make informed value comparisons; and weights and measures officials will be able to ensure accuracy of net weight declarations and unit price calculations.

At the 2015 NCWM Interim Meeting a regulator remarked that the regulations are clearly defined in the handbook and any changes would cause confusion. Several states opposed this item as written. The NIST Technical Advisor remarked that this item was posted on the NIST State Director List Server and several states expressed concern on labeling issues in the marketplace. The state of Florida commented that they had an issue in their marketplace but worked directly with the grocers to clarify. The NIST Technical Advisor presented the following to the Committee for review:

1.5. Meat, Poultry, Fish, and Seafood. ^[NOTE 3, page 110] – Shall be sold by weight, except that whole shellfish in the shell may be sold by weight, measure, and/or count. Shellfish are aquatic animals having a shell, such as mollusks (for example, scallops) or crustaceans (for example, lobster or shrimp). The net weight declaration for meat, poultry, fish and seafood shall be by the kilogram, gram or pound and not by portion or piece except as permitted below:

(Amended 20XX)

- (a) If meat, poultry, fish, and seafood is kept, offered or exposed for sale or sold at the retail store level in standard weight packages (refer to the Uniform Packaging and Labeling Regulation (UPLR), Section 6.16., Random Packages) the net weight, total price and unit price must appear on the principal display panel of each package and must conform to all of the applicable requirements of the UPLR. This section does not apply to packages of meat or poultry that bear a USDA Inspection Seal and plant identity and a label that conform to the net weight labeling requirements of the USDA Food Safety and Inspection Service (FSIS).
- (b) If meat, poultry, fish, and seafood is kept, offered or exposed for sale from bulk (e.g., direct service counters) by the portion or piece the product identity and net weight shall be displayed along with the unit price at which it is offered for sale. This information shall appear on a label or sign adjacent to the meat, poultry, fish or seafood and must be presented in an easy-to-read type style and color and must appear on a single-color contrasting background.
- (c) The unit prices required under Sections 1.5.(a) and 1.5.(b) shall be in terms of the unit price-per-kilogram; or unit price-per-100 grams; or unit price-per-pound, and not in any other unit or denomination or in common or decimal fractions of the permitted units.

(Added 20XX)

The traditional method of sale for meat and poultry at retail has been to sell by the pound in decimal units (i.e., 1.59 lbs). In NIST HB 44, S.1.8.4., Customer Indications in the scale code it requires the display of the whole units of weight but permits unit pricing for metric units to appear as price per kilogram or price per 100 grams. Any proposal in the method of sale should be consistent with the scale code or retailers will not have the equipment they need to do the job.

NIST, OWM understands the problem trying to be solved, is that retailers are attempting to shift from the traditional method of sale of decimal pounds over to the sale of meat by the piece, but still by weight (but in ounces). This is currently acceptable, however as this practice is emerging in many states it appears to hinder or frustrate the consumer ability to make value comparisons between packaged meat and sales from bulk.

At least one state has obtained a court ruling that prohibits the sale of the same product by different methods of sale within the same retail location, specifically because it hinders value comparison.

In the example given below the consumer will have to divide the price by ounces to obtain a price per ounce and multiply that value by 16 to obtain a price per pound, to compare the unit price offered in the bulk sales counter to the unit price of the same identical type of meat offered for sale in a random weight prepackage by the decimal pound.

For example: $\$5.99 \div 5 = \$1.198 \text{ per ounce} \times 16 = \19.16 per pound

It appears that to maintain the traditional method of sale and pricing (i.e., offered by sale by decimal pounds and unit pricing by the pound) the Method of Sale Regulation (and, because not all states adopt the method of sale regulation, perhaps the UPLR should be amended to limit the unit pricing to the same units) should be revised to only permit sales by the decimal pound or kilogram, and unit prices be revised to only appear in terms of price per pound or kilogram (or price per 100 grams [per HB 44]). For sales of food from bulk unit price advertising by the ounce should be prohibited in Section 1.9.2. and include that prohibition to Section 1.9.1.

Another suggestion provided by NIST, OWM is to change the title of Section 1.9., Advertising and Price Computing of Bulk Food Commodities to read:

1.9. Advertising and Price Computing of Bulk ~~Food~~ and Prepackaged Food Commodities

1.9.1. Total Price Computing. – The total price of food commodities sold from bulk and in packages shall be by weight and the total price shall be computed in terms of whole units of weight (i.e., price per 100 grams, or price per kilogram, or price per pound, ~~ounces~~, etc.) and not in common or decimal fractions.

1.9.2. Unit Price Advertising. – The unit price of food commodities sold from bulk and in packages shall be advertised or displayed in terms of whole units of weight of kilograms, (or price per 100 grams) or pounds only, not in common or decimal fractions. ~~or in ounces~~. A supplemental declaration is permitted in print no larger than the whole unit price. This supplemental declaration may be expressed in common or decimal fractions. ~~or in ounces~~.

1.9.3. Individual Piece Advertising. – The unit price and net weight of food commodities offered or exposed for sale by the each from bulk shall include a declaration of the individual item price, a unit price in terms of decimal kilograms or pounds or price per 100 grams and net weight in terms of decimal kilograms or pounds. The net weight and unit price declaration shall be presented adjacent to the item price in type size no less than one-half the height of the item price and shall be displayed as clear and conspicuous as the item price.

For example: **TUNA STEAKS**
 \$5.99 EACH

NET WT 0.31 LB
\$19.16 PER LB

Various pricing schemes found in the marketplace by the States:



Being sold by each



Identifier on the label states “5 oz bnls pork chops”. The random pack label has a net weight that differs from package to package

At the NCWM 2015 Interim Meeting the Committee heard comments to withdraw this item. The Committee would like to receive additional feedback from all the Regional. For these reasons, the Committee is recommending this as an Informational item.

At the NCWM 2015 Annual Meeting the NIST Technical Advisor remarked that states have different interpretations for Section 1.5. Meat Poultry, Fish and Seafood. Some states believe this is a non-issue and does not need to be addressed through the conference. Some states were able to work directly with retailers in resolving any issues. A primary concern is there needs to be uniformity in the marketplace. There are two separate issues; one being the method of sale on prepackaged products and the second being the method of sale when sold by bulk. NIST Handbook 130 does not provide guidance for some of the marketing practices that are being seen in today’s marketplace. NIST also has been in contact with a state that is having issues with markdowns labels. If the NCWM approved the Committee’s request that a work group be formed, NIST will facilitate a workgroup that has consist of regulatory officials and retailers working together to review this item and provide a recommendation at the NCWM 2016 Interim.

Regional Associations Comments:

During the 2014 NEWMA Interim Meeting the submitter of this item commented that cuts of meat, poultry and fish are being sold by count rather than the weight. He believes the pound comparison should be required so consumers can make educated price comparisons. Another regulator agreed. An industry representative from a Supermarket asked if cuts could still be sold individually for a fixed amount if both the cost per pound and the cost per item are posted. The submitter explained that in his state, the price per pound should be the primary price listing. However, a supplemental statement would not be prohibited. The Chairman proposed alternative language to avoid a conflict with the Federal Packaging and Labeling Act (FPLA). The submitter asked the Chairman to confirm whether or not the new language would be in violation. An industry representative asked what the package labeling had to contain. The submitter answered that all packaging for meat, poultry, fish and seafood in his state has to include the net weight, total price and price per pound. NEWMA forwarded the item as submitted to NCWM and recommended that this be an Informational item. During the 2015 NEWMA Annual Meeting a NIST Technical Advisor commented that this item came from regulators in Massachusetts and Florida. States have concerns there is not adequate regulation in addressing this Section and the National L&R is seeking comments from Regions. NEWMA is recommending that it be an Informational pending comments from the states.

At the 2015 CWMA Annual Meeting several regulators commented that products are being sold by “each,” but they also require the weight to be posted on the item. A NIST representative rose to provide clarification on the item for consideration and discussed that retailers are selling product by random weight, standard pack, and by bulk as count alone or by fixed weight. This item should be considered if states believe there is a need for a consistent pricing method (sold by pound only). CWMA agrees this item has merit, and should be kept as Informational.

SWMA Action: Item 232-1
Summary of comments considered by the regional committee (in writing or during the open hearings):
A NIST representative stated that a work group has been formed and plans to have a recommendation prepared by the interim conference in January 2016.
A state official stated that he supports the language that is currently under consideration.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee recommends waiting for the recommendation of the workgroup.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee recommends waiting for the recommendation of the workgroup.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 15 **Section 1.12. Ready-to-Eat Food.**

This item was not submitted to your region.

New Item 2 **Section 2.4. Fireplace and Stove Wood (See Related New Items 3 & 4)**

Source:

NIST Office of Weights and Measures (2016)

Purpose:

Recognize traditional industry labeling practice and eliminate language that appears to conflict with the requirements of the packaging and labeling regulation regarding quantity statements.

Item under Consideration:

Amend the NIST Handbook 130, Method of Sale Regulation as follows:

2.4.3. Quantity. – Fireplace and stove wood shall be advertised, offered for sale, and sold only by measure, using the term “cord” and fractional parts of a cord or the cubic meter, except that:

(a) **Packaged natural wood.** – Natural wood offered for sale in packaged form in quantities less than 0.45 m³ (1/8 Cord or 16 ft³) shall display the quantity in terms of:

(1) liters, to include fractions of liters; and may also include a declaration of quantity in terms of:
~~or~~

(2) ~~— cubic inches, if less than one cubic foot; or~~

(2 ~~3~~) cubic foot, feet, if one cubic foot or greater, to include fractions of a cubic foot; or cubic feet
to include fractions of a cubic foot.

Note: Implementation for the requirement for use of the liter in (1): packages may continue to show the dm³ instead of the liter (L) for 3 years after the effective date of this regulation to allow for the use of current packaging inventories.

(b) **Artificial compressed or processed logs.** – A single fireplace log shall be sold by weight, and packages of such individual logs shall be sold by weight plus count.

(c) **Stove wood pellets or chips.** – Pellets or chips not greater than 15 cm (6 in) in any dimension shall be sold by weight. This requirement does not apply to flavoring chips.
(Amended 1976 and 1991)

(d) **Flavoring chips.** – Flavoring chips offered for sale in packaged form in quantities less than 0.45 m³ (1/8 cord or 16 ft³) shall display the quantity in terms of:

(1) liters, to include fractions of liters; **and may also include a declaration of quantity in terms of:**
~~or~~

~~(2) cubic inches, if less than one cubic foot; or~~

~~(2) cubic foot, feet, if one cubic foot or greater, to include fractions of a cubic foot; or cubic feet~~
 to include fractions of a cubic foot.

Note: Implementation for the requirement for use of the liter in (1): packages may continue to show the dm³ instead of the liter (L) for 3 years after the effective date of this regulation to allow for the use of current packaging inventories.

(Added 1998)(Amended 2010, ~~20XX~~)

Background/Discussion:

The submitter states that the adoption of the proposed amendments to the method of sale is needed to recognize the widespread use of the method of sale that a large number of packers use which conflicts with existing requirements. If the current method of sale requirement is rigidly enforced tens of thousands of packages of firewood in many states that adopt the Uniform Method of Sale of Commodity Regulation would likely be found in violation of that regulation.

There is a sector of the firewood industry which sells chunks and split firewood from many types of trees for use in restaurants and homes for smoking and flavoring foods. Currently Section 2.4.3.(c) Quantity, requires “stove wood pellets or chips” no larger than 15 cm (6 in) to be sold by net weight but the wording specifically excludes flavoring chips.

The types of “chunk” wood may include apple, cherry, mesquite, pecan, oak, chunks of “BBQ wood” and used whisky barrels. Some online sellers offer packages of these varied products for sale by net weight and “approximate” net weight but others sell by volume. Some sites also offer split logs by volume and “wood chunks” by net weight. The variations in the sizes and shapes of the wood being sold for flavoring and cooking are significant (in some advertisements the chunk sizes range from 2 to 4.5 inches) so that may be why some sellers have switched to net weight, perhaps believing they fall under Section 2.4.3.(c). It must be determined if, under Section 2.4. Fireplace and Stove Wood, “cooking wood” and “chunks” are included under the terms “flavoring chips” and if the method of sale for those products, which, according to Section 2.4.3.(d) must be sold by volume is appropriate, or if they fall under Section 2.4.3.(c) which permits sales by net weight. If the latter is preferred, then the subsection should be amended to allow flavoring “chunks” to be sold by net weight.

Based on information from several industry sources and weights and measures officials, the current labeling on packaged firewood has the quantity declared in fractions of a cubic foot (e.g., 0.6, 0.7 and 0.75 cubic feet) and by cubic decimeters (dm³). The use of these units on these package sizes does not comply with the method of sale requirements in Section 2.4.3. Quantity.

Section 2.4.3. Quantity, requires that packages of firewood and flavoring chips less than 1 cubic foot to be sold by cubic inches and liters. Sale of packaged natural wood by the cubic foot instead of the required cubic inches appears to be a nationwide traditional sales practice. The labeling by the cubic foot appears to provide consumers with quantity information in a unit of measure they understand and that they can use in making value comparisons against firewood offered for sale by the Cord or fractions of a Cord. The OWM recommends that the method of sale be revised to require natural wood to be sold by the cubic foot or fractions thereof, in order to recognize traditional industry sales practice. No change to the method of sale for flavoring chips and kindling is proposed at this time except to request the interpretation regarding cooking wood and flavoring chunks discussed above.

In 1994 the requirement that packages subject to the UPLR include metric units in their quantity declarations was adopted. At that time, the consensus of the NCWM working group that developed the metric revisions to the UPLR was due to consumers being familiar with the term liter (symbols: l or L) rather than the terms cubic decimeter and

its symbol (dm³) even though the quantities are exactly the same. At that time the methods of sale for peat moss, pine bark mulch, and other products were revised to require the use of the liter instead of cubic decimeter (dm³) to facilitate consumer understanding of metric units and quantities by requiring a more familiar metric unit to appear on a wide range of packages and quantities. Today, some 21 years after mandatory use of the liter was first implemented, consumer acceptance and understanding of what a liter is and the amount of product it represents is greater than it was in 1994, so the requirement that metric volumes must appear on labels in terms of the liter should not be changed.

Packages subject solely to the UPLR (i.e., they are not subject to the Federal Fair Packaging and Labeling Act) may be offered for sale only in metric units (customary units may also appear on the principal display panel at the option of the packer.) As currently written in the Method of Sale, Section 2.4.3., subsections (a)(1) and (d)(1) require packages be labeled in “liters, to include fractions of liters; or” which may confuse readers by making it appear that liters are only one option for how quantities must be shown. That wording is inconsistent with the declaration of quantity requirement in the UPLR, Section 6.1. General that requires all packages to bear a declaration of quantity in both metric and customary units (an exemption in Section 11.33. of the UPLR makes customary units optional). An editorial change must be made to Section 2.4.3. for both natural wood and flavoring chips to clarify that a packer must provide a declaration of quantity in metric units in terms of the liter and that customary units may appear on the package but that they are optional.

If adopted, the amendment to allow sales of packaged natural firewood by the cubic foot will go into effect on January 1 of the year following NCWM adoption. However, since it will take time for packers to learn of the changes and to add metric units to their packaging or change cubic decimeter to liters, a period of 3 years from the effective date of the revised regulation should be allowed for the changeover.

SWMA Action: New Item 2
Summary of comments considered by the regional committee (in writing or during the open hearings):
A representative from NIST explained the proposed changes to the method of sale.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
A NIST representative requested input regarding the method of sale of “chunk wood”, the committee recommends that a note be added to sections 2.4.3 (c) and (d) to the effect that “ chunk wood shorter than 12 inches being sold in volumes of 1 cubic foot or less be sold by weight. With the addition of this statement the committee recommendation is that this becomes item be moved to voting.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports

from your region on this item.

A NIST representative requested input regarding the method of sale of “chunk wood”, the committee recommends that a note be added to sections 2.4.3 (c) and (d) to the effect that “ chunk wood shorter than 12 inches being sold in volumes of 1 cubic foot or less be sold by weight. With the addition of this statement the committee recommendation is that this becomes item be moved to voting.

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 7 Section 2.10. Softwood Lumber**Source:**

NIST Office of Weights and Measures (2016)

Purpose:

Correct the treatment of nominal dimension of softwood lumber and to make consistent with NIST Voluntary Product Standard PS 20.

Item under Consideration:

Amend NIST Handbook 130, Uniform Method of Sale of Commodities as follows:

2.10. Softwood Lumber. – Applies to softwood boards, timbers, and dimension lumber that have been surfaced, ~~but shall not apply to rough lumber, to lumber that has been matched, patterned, or shiplapped; to other products set forth in Tables 1-4 of the Department of Commerce Voluntary Product Standard PS 20-15 “American Softwood Lumber Standard,” or latest edition; but shall not apply or to rough lumber or lumber (other than products in the Tables)~~ remanufactured or joined so as to have changed the form or identity, such as individually assembled or packaged millwork items. “Nominal sizes” ~~are for U.S.~~ customary dimensions ~~are size designations used for convenience in describing to describe~~ approximate, rather than actual, sizes of lumber. “Nominal sizes” were originally derived from the dimensions of rough lumber before surfacing and are always greater than the actual ~~or minimum dressed~~ dimensions; thus a dry “2 x 4” is surfaced to actual dimensions of 1½ in x 3½ in (38 mm x 89 mm). The requirements in ~~this section~~ **Section 2.10.1** refer to actual sizes of lumber; ~~for Examples of nominal sizes and minimum dressed sizes for board and dimension lumber are shown in (see Table 1. To this section, Softwood Lumber Sizes). A more complete listing of nominal size categories are found in the referenced Tables from The nominal sizes used in this section follow Department of Commerce Voluntary Product Standard PS 20-10, “American Softwood Lumber Standard,” or latest edition. SI equivalents are included for actual measurements only.~~

2.10.1. Definitions.

2.10.1.1. Surfaced (dressed) Lumber. – Lumber that has been surfaced by a machine (to attain smoothness of surface and uniformity of size) on one side (S1S), on two sides (S2S), one edge (S1E), two edges (S2E), or a combination of sides and edges (S1S1E, S1S2E, S2S1E, S4S).

2.10.1.2. Boards. – Lumber 38 mm (1½ in) or less in actual thickness and 38 mm (1½ in) or more in actual width. Lumber less than ~~139~~**140** mm (5½ in) in actual width may be classified as strips.

2.10.1.3. Timbers. – Lumber 114 mm (4½ in) or more in smallest dimension. Timbers may be designated as beams, stringers, posts, caps, sills, girders, or purlins.

2.10.1.4. Dimension Lumber. – Lumber from 38 mm (1½ in) to, but not including, 114 mm (4½ in) in actual thickness, and 38 mm (1½ in) or more in actual width. Dimension lumber may be designated as framing, joists, planks, rafters, or studs.

2.10.1.5. Rough Lumber. – Lumber that has not been dressedsurfaced, but that has been sawed, edged, and trimmed at least to the extent of showing saw marks, or other primary manufacturing marks in the wood, on the four longitudinal surfaces of each piece for its overall length.

2.10.1.6. Matched Lumber. – Lumber that has been worked with a tongue on one edge of each piece and a groove on the opposite edge to provide a close tongue and groove joint by fitting two pieces together; when end-matched, the tongue and groove are worked in the ends also.

2.10.1.7. Patterned Lumber. – Lumber that is shaped to a pattern or a molded form, in addition to being dressed, matched, or shiplapped, or any combination of these workings.

2.10.1.8. Shiplapped Lumber. – Lumber that has been worked or rabbeted on both edges of each piece to provide a closelapped joint by fitting two pieces together.

2.10.1.9. Grade. – The commercial designation assigned to lumber meeting specifications established by a nationally recognized grade rule writing organization.

2.10.1.10. Species. – The commercial name assigned to a species of trees.

2.10.1.11. Species Group. – The commercial name assigned to two or more individual species having similar characteristics.

2.10.1.12. Representation. – A “representation” shall be construed to mean any advertisement, offering, invoice, or the like that pertains to the sale of lumber.

2.10.1.13. Minimum Dressed Sizes (width and thickness). – The standardized width and thickness at which lumber is dressed when manufactured in accordance with the U.S. Department of Commerce Voluntary Product Standard PS 20-~~1510~~, “American Softwood Lumber Standard,” or latest edition, and regional grading rules conforming to PS 20-~~1510~~ or latest edition. (See Table 1. Softwood Lumber Sizes containing examples of some minimum dressed sizes.)

2.10.2. Identity. – Representations shall include a declaration of identity that specifies the grade or grades, species or species group, and whether the lumber is unseasoned (green) or dry.

2.10.3. Quantity. – Representations shall be in terms of:

(a) the number of pieces;

(b) the minimum dressedsurfaced width and thickness; ~~and or actual width and thickness, except that the use of nominal dimensions shall be allowed as long as:~~

(1) The term “nominal” or “nom” is also used, and

(2) The actual or minimum dressed sizes are prominently displayed to the customer either by means of a table or label; and

(c) either the length of individual pieces or the lineal footage, ~~except that the use of nominal dimensions shall be allowed as long as a table of minimum surfaced sizes is displayed prominently or the actual dimensions are prominently displayed to the customer and the term “nominal” or “nom” is also used in conjunction with any representation of dimensions.~~

Table 1. Softwood Lumber Sizes

Examples of minimum dressed standard-surfaced sizes at the time of manufacture for both unseasoned (green) and dry lumber as published by the U.S. Department of Commerce in Voluntary Product Standard PS 20-~~15~~ **14**-or latest edition.

Product Classification (Nominal Size)	Minimum Dressed Sizes**			
	Unseasoned		Dry	
Inches	Inches	Millimeters	Inches	Millimeters
Surfaced Lumber*				
2 x 2	1 ⁹ / ₁₆ X 1 ⁹ / ₁₆	40 x 40	1½ x 1½	38 x 38
2 x 2½	1 ⁹ / ₁₆ x 2 ¹ / ₁₆	40 x 52	1½ x 2	38 x 51
2 x 3	1 ⁹ / ₁₆ x 2 ⁹ / ₁₆	40 x 65	1½ x 2½	38 x 64
2 x 4	1 ⁹ / ₁₆ x 3 ⁹ / ₁₆	40 x 90	1½ x 3½	38 x 89
2 x 6	1 ⁹ / ₁₆ x 5 ⁵ / ₈	40 x 143	1½ x 5½	38 x 140
2 x 8	1 ⁹ / ₁₆ x 7½	40 x 190	1½ x 7¼	38 x 184
2 x 10	1 ⁹ / ₁₆ x 9½	40 x 241	1½ x 9¼	38 x 235
2 x 12	1 ⁹ / ₁₆ x 11½	40 x 292	1½ x 11¼	38 x 286
Board Lumber				
1 x 2	²⁵ / ₃₂ x 1 ⁹ / ₁₆	20 x 40	¾ x 1½	19 x 38
1 x 3	²⁵ / ₃₂ x 2 ⁹ / ₁₆	20 x 65	¾ x 2½	19 x 64
1 x 4	²⁵ / ₃₂ x 3 ⁹ / ₁₆	20 x 90	¾ x 3½	19 x 89
1 x 6	²⁵ / ₃₂ x 5 ⁵ / ₈	20 x 143	¾ x 5½	19 x 140
1 x 8	²⁵ / ₃₂ x 7½	20 x 190	¾ x 7¼	19 x 184
1 x 10	²⁵ / ₃₂ x 9½	20 x 241	¾ x 9¼	19 x 235
1 x 12	²⁵ / ₃₂ x 11½	20 x 292	¾ x 11¼	19 x 286

*The dry thicknesses of nominal 3 in and 4 in lumber are 2½ in (64 mm) and 3½ in (89 mm); unseasoned thicknesses are 2⁹/₁₆ in (65 mm) and 3⁹/₁₆ (90 mm). Widths for these thicknesses are the same as shown above.

****PS 20-~~1510~~** defines dry lumber as being 19 % or less in moisture content and unseasoned lumber as being over 19 % moisture content. The size of lumber changes approximately 1 % for each 4 % change in moisture content. Lumber stabilizes at approximately 15 % moisture content under normal use conditions.

(Added 1971)

Background/Discussion:

The American Lumber Standard Committee, the Standing Committee for maintenance of the American Softwood Lumber Standard, Voluntary Product Standard 20 (“P.S. 20”), recommends that certain clarifications be made to the Uniform Regulation for the Method of Sale of Commodities, Section 2.10 and the Table on page 121 in NIST Handbook 130.

Background

For some time there has been confusion in the regulated community as to the specific requirements for the display and advertising of quantity measure for the widths and thicknesses of softwood lumber, particularly when nominal measure is used. This has led to inconsistent labeling in the market and, in some cases, enforcement actions by various state and local weights and measures authorities. These suggested changes would provide greater clarity and make the language internally consistent and consistent with industry terminology. No changes are suggested in the underlying concepts, substantive requirements or practical applications (as we understand them).

Explanation of Specific Changes

1. P.S. 20 contains four tables with nominal dimensions of different products. It is our understanding that nominal dimensions for these products are accepted by Weights & Measures officials. NIST 130 does not include these products in the description of product scope (and indeed even excludes some) and contains information from only one of the P.S. 20 Tables. The change would make clear that the products in all of the P.S. 20 Tables are all covered.
2. The current section 2.10 indicates that SI equivalents are only used for actual dimensions. In fact, the Table includes metric dimensions for nominal sizes. Other legal authorities require metric. We suggest the sentence be deleted.
3. There is a statement in Section 2.10 that the “...requirements of this section refer to actual sizes of lumber.” We suggest clarifying that this reference is only to the definitions in Section 2.10.1. The section as a whole does include nominal dimensions where indicated.
4. Repositioning the nominal dimension provisions. The nominal dimension provisions are currently in subsection 2.10.3 (c) on length. These dimensions relate to width and thickness. We recommend placing them in subsection 2.10.3(b).
5. Reformatting of the width and thickness provision -- Subsection 2.10.3(b) (as changed) is altered to make clear that the requirement of displaying the term “nom” or “nominal” when nominal measure is used is applicable with either the disclosure of actual or minimum dressed sizes. The current language with its multiple conjunctions could be read in two different ways.
6. Adding the option for labeling. The current language provides for the use of a “table of minimum surfaced sizes is displayed prominently.” In the marketplace, many producers label each piece of lumber. Alternatively, sellers might choose to prominently display a label, rather than a table, to more effectively convey the information to consumers.

7. Consistent use of the term “dressed sizes” rather than “surfaced sizes.” Subsection 2.10.1.13 appropriately contains a definition of “Minimum dressed sizes (width and thickness)” and refers to P.S. 20 as a source for this information. P.S. 20 similarly uses that term.¹ However, there is inconsistency in other parts of Section 2.10. For example, Subsection 2.10.1.1 defines the term “Surfaced (dressed) lumber.” Subsection 2.10.3(b) refers to “minimum surfaced width and thickness.” Subsection 2.10.3(c) uses “minimum surfaced sizes.” Table 1 on page 121 of the Handbook introduces yet another variation with reference to “minimum standard surfaced sizes.” We urge that one term “dressed” consistently be used throughout.
8. Table 1 of the section sets forth some, but not all, of the nominal and minimum dressed sizes from P.S. 20. It is recommended that both Section 2.10 and the Table be revised to indicate that the Table contains examples. Alternatively, all four tables from P.S. 20-15 could be included.

Section 2.10.1.2 Boards. The dimension for width of dry 1x6 board lumber is changed from 139mm to 140 mm to be consistent with P.S. 20. (The actual conversion is 139.7mm.)

¹ See, P.S. 20, Sections 3.3.1, 3.3.1.1, 3.3.1.2, 3.3.2, 3.3.3, 3.4.4, and Tables 1-4. Although Section 3.3.2 is titled Dressed (surfaced) lumber, “dressed” is used alone in all of the other sections

SWMA Action: New Item 7
Summary of comments considered by the regional committee (in writing or during the open hearings):
Brock Landry, representing the American Lumber Standards Committee made a presentation that included editorial changes that clarifies, but does not change the content of this section and also aligns it with the Voluntary Product Standard (NIST PS20-2015).
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes that the item is fully developed.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.

The committee believes that the item is fully developed.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 17 Section 2.17. Precious Metals

Source:

Florida (2016)

Purpose:

Provide critical information consumers should have when deciding to sell items containing precious metals.

Item under Consideration:

Amend the NIST Handbook 130, Method of Sale Regulation as follows:

2.17. Precious Metals.

2.17.1. Definition.

2.17.1.1. Precious Metals. – Gold, silver, platinum, or any item composed partly or completely of these metals or their alloys and in which the market value of the metal in the item is principally the gold, silver, or platinum component.

2.17.2. Quantity. – The unit of measure and the method of sale of precious metals, if the price is based in part or wholly on a weight determination, shall be either troy weight or SI units. **To facilitate price comparison and provide information allowing consumers to make an informed decision a chart must be prominently displayed and present in proximity to the purchasing scale being used for the transaction. The chart must be clearly visible to the seller and contain at a minimum the following information: When the measurement or method of sale is expressed in SI units of mass, a conversion chart to troy units shall be prominently displayed so as to facilitate price comparison. The conversion chart shall also display a table of troy weights indicating grains, pennyweights, and troy ounces.**

(a) A table of troy weights indicating grains, pennyweights, and troy ounces.

(b) The percentages as noted below of precious metals contained in common mixtures found in the marketplace.

(1) Gold:

- a. "10 karat = 41.7% gold";**
- b. "14 karat = 58.3% gold";**
- c. "18 karat = 75.0% gold";**
- d. "24 karat = 100% gold".**

(2) Silver: "Sterling = 92.5% silver".

(3) Platinum:

- a. "900 Platinum = 90% Platinum";**
- b. "950 Platinum = 95% Platinum".**
- (c) If buying precious metals based on weight the chart shall also state the minimum percentage of the current melt value being used to calculate**

the buying price and the minimum melt value on which the buying price is based.

(d) If buying precious metals based on weight the following formula: "(Item weight x Percentage in decimal form of precious metal contained in the item) X (Melt value being used x Percentage in decimal form being paid of melt value being used) = Potential Monetary Offer".

(e) When the measurement or method of sale is expressed in SI units of mass, a conversion chart to troy units must also be present on the chart.

(Added 1982; **Amended 2017**)

Background/Discussion:

The accurate and fair purchase of precious metals by retailers from the general public is dependent on two primary factors. The first factor being the accuracy of the scale, which is well covered in Section 2.20 of NIST HB 44. The second factor has not been addressed, but it involves the calculation or method used by buyers to make an offer to the seller (the general public). It is probably fair to say that the average consumer is unaware of how to calculate market value for their precious metal containing items (e.g. gold and silver jewelry, etc.) and thus, creates the potential for an inequitable or uninformed transaction; despite an accurate scale. The weights and measures community routinely refers to the quintessential (and justified) need for "equitable transactions" and if the general public elects to sell precious metals in a time of need or for whatever reason they should have sufficient information to ensure value comparison and be able to engage in an equitable transaction. We believe this additional information will further ensure equitable transactions occur in the precious metal buying market (from the general public).

Florida officials have become aware of scenarios where persons were paid as low as 10% of melt value. Their suspicion is that they were unaware they were being paid such a low percentage of the melt value for their property. The officials believe it is difficult for consumers to discern whether they are being offered a fair price for their items and the proposed information will help make it less difficult. Second hand dealers and pawn shops may not be in favor of the additional declarations, but there is no additional cost or requirement to these businesses. Pursuant to existing language (since 1982) charts are already required.

SWMA Action: New Item 17
Summary of comments considered by the regional committee (in writing or during the open hearings):
A state official stated that this additional language gives the consumer information that is needed to make a value comparison.
A state official was concerned about the size of the chart however it was explained that the information could be included on the weight conversion chart that is already required.
A state official was concerned that enforcement of this requirement might not be within the prevue of the weights and measures official.
.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes this item has merit and would like feedback from the other regional weights and measures associations.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)

Regional recommendation to NCWM for item status:

- ☐ Voting Item on the NCWM Agenda
☒ Information Item on the NCWM Agenda
☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
☐ Developing Item on the NCWM Agenda (*To be developed by source*)
☐ Unable to consider at this time (*Provide explanation in the "Additional Comments" section below*)

Regional Report to NCWM:

Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. **This will replace any previous reports from your region on this item.**

The committee believes this item has merit and would like feedback from the other regional weights and measures associations.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

232-2 Section 2.23. Animal Bedding

Source:

NIST Office of Weights and Measures (2015)

Purpose:

Provide a uniform method of sale for animal bedding that will enhance the ability of consumers to make value comparisons and will ensure fair competition.

Item under Consideration:

Amend the NIST Handbook 130, Method of Sale Regulation as follows:

2.23. Animal Bedding. ~~—Packaged animal bedding of all kinds, except for baled straw, shall be sold by volume, that is, by the cubic meter, liter, or milliliter and by the cubic yard, cubic foot, or cubic inch. If the commodity is packaged in a compressed state, the quantity declaration shall include both the quantity in the compressed state and the usable quantity that can be recovered. Compressed animal bedding packages shall not include pre-compression volume statements.~~

Example:

250 mL expands to 500 mL (500 in³ expands to 1000 in³).
(Added 1990)(Amended 2012 and 20XX)

2.23.1. Definitions.

(a) **Animal Bedding – Packaged animal bedding of all kinds, except for baled straw.**

(b) **Usable Volume – the volume of the product that can be recovered from the package by the consumer after it is unwrapped and uncompressed.**

(Added 20XX)

2.23.2. Method of Sale.

- (a) **Packaged animal bedding shall be advertised, labeled, offered and exposed for sale and sold on the basis of the usable volume. If unit pricing is offered to retail consumers, it shall be in terms of the price per liter.**
- (b) **The quantity declaration shall include the terms “Usable Volume” or wording of similar import that expresses the facts, and shall be in terms of the largest whole unit of the milliliter, liter or cubic meter. A declaration may also include the quantity in terms of largest whole unit of cubic inches, cubic foot, or cubic yard only.**

Examples:**Usable Volume 41 Liters (1.4 Cubic Feet)****Usable Volume 1.4 Cubic Feet (41 Liters)****Usable Volume 27.9 Liters (1700 Cubic Inches)****Usable Volume 113 L (4 Cubic Feet)****Usable Volume 8 Cubic Feet (226 L)**

- (c) **The display of pre-compression volume, compressed volume or supplementary dry measure units (e.g., dry quart, bushel) anywhere on the package is prohibited.**

(Added 20XX)

2.23.4.3. Exemption - Non-Consumer Packages of Animal Bedding Sold to Laboratory Animal Research Industry. – Packaged Animal Bedding consisting of granular corncobs and other dry (8 % or less moisture), pelleted, and/or non-compressible Bedding materials that are sold to commercial (non-retail) end users in the laboratory animal research industry (government, medical, university, preclinical, pharmaceutical, research, biotech, and research institutions) may be sold on the basis of weight.

(Added 1990) (Amended 2012 **and 20XX**)**Note: This method of sale for animal bedding shall be enforceable after January 1, 20XX.****(Added 20XX)****Background/Discussion:**

This proposal provides amendments to NIST HB130, Uniform Method of Sale, Section 2.23. Animal Bedding. These changes were determined when a proposal was drafted to revise the test procedures within NIST Handbook 133, Chapter 3. Section 3.9. **Dimensional Test Procedure for Verifying the Compressed Quantity Declaration on Packages of** Peat Moss **and Animal Bedding** and a new proposal was created to add **Section 3.15. Test Procedure for Verifying the Expanded Volume Declaration on Packages of Animal Bedding** (refer to Items 260-2 and 260-3).

At the 2015 NCWM Interim Meeting support was heard in favor for this proposal. It was agreed that the compressed statement is meaningless to the end users. The NIST Technical Advisor noted that if this Item moved forward to remove the term compressed it would impact the language in Item 260-2, NIST Handbook 133, Section 3.9. **Dimensional Test Procedure for Verifying the Compressed Quantity Declaration on Packages of** Peat Moss **and Animal Bedding**. The NIST Technical Advisor remarked that the background information is being reviewed by the office publication coordinator and advised that no technical changes were being made and would be resubmitted with Publication 16 (2015). The Committee agreed to move this forward as a Voting Item.

NCWM 2015 Annual Meeting: The NIST Technical Advisor submitted the following changes to the Item under Consideration:

- 2.23.1.(a) added the language: **including pet or stall bedding, cat or pet litter, or simply bedding.**
- Change the term “expanded volume” to read “usable volume”
- Moved the examples in 2.23.2.(c) to 2.23.2.(b)
- Section 2.23.2.(c) add the term **or weight.**
- Add the following: **Note: This method of sale for animal bedding shall be enforceable after January 1, 2018.**

During open hearings it was discussed that adding the term “cat litter” to the definition of animal bedding may not be appropriate. It was suggested that only wood shaving and paper products be used for animal bedding under the method of sale and test procedure. Along with the method of sale for kitty litter there were questions regarding the MAV and the test procedure for cat litter. The Committee modified two areas of the Item Under Consideration:

- **2.23.1. Definitions.**

Animal Bedding – Packaged animal bedding of all kinds, except for baled straw. ~~any material, except for baled straw kept, offered or exposed for sale or sold for primary use as a medium for any companion or livestock animal to nest or eliminate waste, including pet or stall bedding, cat or pet litter, or simply bedding.~~

- Section 2.23.2.(c) strike the term **or weight.**

The Committee changed the status of this item to Informational and is recommending further development of the following:

- Section 2.23.1.b. - Review the definition of “Usable” volume for ALL types of animal bedding, including uncompressed. Substrate type products may not be the correct term for this section.
- Need to define the term “compressed form.”
- Section 2.23.2.(c) add the term “or weight” to supplemental units.
- Does the enforceable date work for manufacturers?
- Review of the test procedure (Item 260-3)

Refer to Appendix C. for the Executive Summary on “Testing Packages of Animal Bedding and Peat Moss with Compressed and Expanded Volume Declarations” and additional background information.

Regional Association Comments:

During the 2014 NEWMA Interim Meeting, the L&R Chairman stated that NIST, OWM had submitted considerable information to the region for review. This is one of a number of proposals that represents a large amount of work done by NIST to provide consistent standards. An industry representative commented that he participated in the development of this proposal, and said industry has had a long-term struggle with various standards for both compressed and non-compressed packaging. He said these new procedures would allow for accurate and easier testing in the field. He indicated that removal of the term “compressed” as a descriptor is important, because a consumer needs to know the usable amount of volume inside the package. These new procedures will minimize destructive testing, and will cover testing of new products in the marketplace. He strongly supports the proposal. A regulator asked if this procedure would include pelletized product. The industry representative indicated it would cover those products. Another regulator asked if compressed product would be broken up or crushed in the compressing process, and would therefore settle out to net a different volume. The industry representative explained that there is a certain amount of destruction, so the usable volume will generally be slightly less than the volume statement. A regulator expressed support for this item to allow for clear and easy understanding by the consumer. Another regulator asked a question about the chute design, use, and handling of various types of products during the test procedure. The industry representative explained that one of the challenges in testing volume is the amount of variability, depending on the raw material you are starting with. He further explained that the chute allowed for consistency among and between products and repeatability when testing. NEWMA forwarded the item to NCWM and recommended that it be a Voting item.

At the 2015 NEWMA Annual Meeting: This item was considered along with Items 260-2 and 260-3 and is considered fully developed with the editorial changes noted; the word “tentative” as it applies to MAV (maximum allowable variation) as stated in the executive summary should be stricken. Under the Method of Sale, Section 2.23.2.(c)., the examples reflected shall be moved to Section 2.23.2.(b). If this is adopted an effective date needs to be determined for when manufacturers must use the new labeling requirements

At the 2014 SWMA Annual Meeting: The Committee heard an overview of the changes being suggested by NIST. The Committee also heard that the requirement to put a compressed statement on a package was unnecessary and not useful to the end user. The recoverable volume was what the customer uses. The changes also further define animal bedding. SWMA forwarded the item to NCWM and recommended that it be a Voting item.

At the 2015 CWMA Annual Meeting: An industry representative from American Wood Fiber (AWF) rose in support of the proposal. The definition change within the proposal is more inclusive and provides better clarification. Cat litter, which has traditionally been sold by weight in the past, would be sold by volume as a quantity declaration if it is not declared an exception. AWF also supports the disallowance of the word “compressed.” The reduction in the number of tests involved is also an improvement. Expanded vessel sizes will increase the accuracy of results, even though it will be a bit more onerous for inspectors. He commented that during their quality analysis testing, they found no correlation between weight and volume, so having a method that is repeatable is reassuring to the industry. CWMA would like clarification as to whether cat litter is exempted, this should move forward as a Voting item.

SWMA Action: Item 232-2	
Summary of comments considered by the regional committee (in writing or during the open hearings):	
A NIST representative presented a revised recommendation and explained the recommended changes.	
Item as proposed by the regional committee: (If different than agenda item)	
The committee agrees with the following recommended changes.	
2.23. Animal Bedding.	
2.23.1. Definition.	
(a)	<u>Compressed Bedding – means that the volume of the bedding was reduced under pressure during the packaging process.</u>
(b)	<u>Useable Volume – the volume of the product that can be recovered from a package by the consumer after it is unwrapped and, if necessary, uncompressed.</u>
2.23.2 Method of Sale.	
(a)	<u>Packaged animal bedding of all kinds, except for baled straw, shall be advertised, labeled, offered for sale and sold by volume in either a compressed or a uncompressed package. A package of compressed animal bedding shall be advertised, labeled, offered and exposed for sale and sold on the basis of the “Useable Volume.” If unit pricing is provided for use by retail customers to make value comparisons it shall be in terms of the price per liter.</u>

(b) A quantity declaration shall be in terms of the largest whole unit of the milliliter, liter, or cubic meter. A declaration may also include the quantity in terms of largest whole unit of the cubic inch, cubic foot, or cubic yard only. The terms “Useable Volume” must appear in the quantity declaration on a package of compressed animal bedding shall include the terms “

(c) The display of a net or gross weight, pre-compression volume, compressed volume, or supplementary dry measure quantities (e.g., dry pint, dry quart, or bushel) anywhere on the package is prohibited.

Example for Uncompressed Animal Bedding:

Volume 41 Liters (1.4 Cubic Feet)

Volume 125 Liters

Examples for Compressed Animal Bedding:

Useable Volume 1.4 Cubic Feet (41 Liters)

Useable Volume 27.9 Liters (1700 Cubic Inches)

Useable Volume 113 L (4 Cubic Feet)

Useable Volume 226 L

2.23.1.3. Exemption - Non-Consumer Packages of Animal Bedding Sold to Laboratory Animal Research Industry. – Packaged Animal Bedding consisting of granular corncobs and other dry (8 % or less moisture), pelleted, and/or non-compressible Bedding materials that are sold to commercial (non-retail) end users in the laboratory animal research industry (government, medical, university, preclinical, pharmaceutical, research, biotech, and research institutions) may be sold on the basis of weight.

Committee recommendation to the region:

- ☒ Voting Item on the NCWM Agenda
- ☐ Information Item on the NCWM Agenda
- ☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
- ☐ Developing Item on the NCWM Agenda (*To be developed by source*)

Reasons for the committee recommendation:

With the proposed changes incorporated the committee recommendation is that this becomes a voting item.

COMPLETE SECTION BELOW FOLLOWING VOTING SESSION

Final updated or revised proposal from the region: (*If different than regional committee recommendation*)

<p>Regional recommendation to NCWM for item status:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>)</p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)</p> <p><input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)</p>
<p>Regional Report to NCWM:</p> <p>Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.</p>
<p>With the proposed changes incorporated the committee recommendation is that this becomes a voting item.</p>

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

232-3 Section 2.27. Retail Sales of Natural Gas Sold as a Vehicle Fuel

Source:

Clean Vehicle Education Foundation (2014)

Purpose:

Since natural gas is sold in the retail market place as compressed natural gas (CNG) to be an alternative fuel to gasoline and diesel fuel and as liquefied natural gas (LNG) to be an alternative fuel to diesel, the proposed additions and edits to Handbook 130 will provide definitions for natural gas equivalents for diesel liters and diesel gallons so that end users can readily compare cost and fuel economy. At present only CNG equivalents for gasoline are included in the handbooks.

Item under Consideration:

Amend the NIST Handbook 130, Method of Sale Regulation as follows:

2.27. Retail Sales of Natural Gas Sold as a Vehicle Fuel.

2.27.1. Definitions.

2.27.1.1. Compressed Natural Gas (CNG). – A gaseous fuel composed primarily of methane that is suitable for compression and dispensing into a fuel storage container(s) for use as an engine fuel.

~~2.27.1.2. Gasoline Liter Equivalent (GLE).~~ – Gasoline liter equivalent (GLE) means 0.678 kg of natural gas.

~~2.27.1.2.3. Gasoline Gallon Equivalent (GGE).~~ – Gasoline gallon equivalent (GGE) means 2.567 kg (5.660 lb) of compressed natural gas.

2.27.1.3. Diesel Gallon Equivalent (DGE). - Diesel gallon equivalent means 6.384 lb of compressed natural gas or 6.059 lb of liquefied natural gas.

2.27.1.4. Liquefied Natural Gas (LNG). – Natural gas which is predominantly methane that has been – 162 °C (– 260 °F) at 14.696 psia and stored in insulated cryogenic fuel storage tanks for use as an engine fuel.

2.27.2. Method of Retail Sale and Dispenser Labeling.

2.27.2.1. Method of Retail Sale. – All compressed natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in terms of mass, and indicated in the gasoline ~~liter~~ equivalent (GLE), or gasoline gallon equivalent (GGE), diesel gallon equivalent (DGE) units or mass.

2.27.2.2. Dispenser Labeling Compressed Natural Gas. – All retail compressed natural gas dispensers shall be labeled with the equivalent conversion factor in terms of ~~kilograms or~~ pounds (lb). The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have ~~either~~ the statement “1 Gasoline Gallon Equivalent (GGE) ~~is equal to means~~ 5.660 lb of Compressed Natural Gas” or “1 Diesel Gallon Equivalent (DGE) means 6.384 lb of Compressed Natural Gas” consistent with the method of sale used.

2.27.2.3. Method of Retail Sale. – All liquefied natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in mass, and indicated in diesel 1 gallon equivalent (DGE) units, or mass.

2.27.2.4. Dispenser Labeling of Retail Liquefied Natural Gas. – All retail liquefied natural gas dispensers shall be labeled with the equivalent conversion factor in terms of pounds (lb). The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have the statement “1 Diesel Gallon Equivalent (DGE) means 6.059 lb of Liquefied Natural Gas”.

(Amended 20XX)

Background/Discussion:

The gasoline gallon equivalent (GGE) unit was defined by NCWM in 1994 to allow users of compressed natural gas (CNG) vehicles to readily compare costs and fuel economy of light-duty natural gas vehicles with equivalent gasoline powered vehicles. For the medium and heavy duty natural gas vehicles in widespread use today, there is a need to officially define a unit for both Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) (already in widespread use) allowing a comparison of cost and fuel economy with diesel powered vehicles. Natural gas is sold as a vehicle fuel as either Compressed Natural Gas (CNG) or Liquefied Natural Gas (LNG) and each method of sale is measured in mass. The submitter stated that the official definition of a DLE and a DGE will likely provide justification for California, Wisconsin and many other states to permit retail sales of LNG for heavy-duty vehicles in these convenient units. (refer to the *Report of the 99th National Conference on Weights and Measures* [SP1193, 2014] for the mathematics justifying the specific quantity (mass) of natural gas in a DLE and DGE.)

NCWM 2014 Interim Meeting: Mr. Mahesh Albuquerque (Chair, National Gas Steering Committee) [NGSC] notified the Committee that this item is being developed by the NGSC. The Committee noted that the factor in 2.27.1.6. Liquefied Natural Gas should not read – 126.1 °C but rather – 162 °C.

The L&R Committee in responding to the NGSC’s June 10, 2014 request to change the NGSC’s March 2014 recommendation for DGE units. The L&R Committee has agreed that the CNG and LNG conversion factors proposed for use in converting these gases to DGE units should be revised in the 2014 Interim Report so that their numerical values are expressed to three decimal places rather than two decimal places. These changes are reflected in the following proposed modifications within Section 2.27. Retail Sales of Natural Gas Sold as Vehicle Fuel to read: 1 Diesel Gallon Equivalent (DGE) is ~~6.380~~ 6.384 pounds of Compressed Natural Gas and 1 Diesel Gallon Equivalent of Liquefied Natural Gas is ~~6.060~~ 6.059 pounds.

NCWM 2014 Annual Meeting: A joint session was held with L&R and S&T to hear this Item. It was noted that if the L&R did not move forward the Item 232-3 then there would be no reason to proceed with Item 237-2 and S&T Item 337-2 as it appeared in the Report of the 98th National Conference on Weights and Measures. There was discussion regarding the term “approximately equal” in Sections 2.27.2.2. and 2.27.2.4. It was noted this term was not a measurement equivalency but equal to in energy content. It was recommended that the Committee give consideration to amend the definition and clarify the meaning. Some spoke in opposition that this Item would cause

consumer confusion in the marketplace, if adopted. Several members questioned where IRS obtained the numbers that are used the IRS tax form. NIST provided an alternative proposal and several members believed this proposal should be taken into consideration. Since the proposal from the NGSC was not released until June 10, 2014, members felt they did not have enough time to vet the modification or the NIST proposal. The Committee reviewed numerous letters in support of all the Items that reflect this issue.

Ethan Bogren, NGSC Chair provided the following write up from their NGSC's meeting on January 14, 2015.

Natural Gas Steering Committee Update Report – January 14, 2015

The NGSC has been working diligently at achieving a compromise proposal regarding the sale of CNG/LNG as an alternative motor fuel. While the group has found success in establishing a consensus opinion in many aspects of the regulations, the group remains divided as to what unit of measure should be used for primary method of sale.

As you all know there has been a proposal submitted urging NCWM to adopt gallon equivalent units (GGE/DGE) as the primary method of sale for natural gas products to be used as an alternative motor fuel. There has been a feeling by many members of NCWM that this would be considered a diversion from the customary units in which commodities are sold in the United States causing concern.

Since a consensus regarding the units used for the primary method of sale for natural gas products was unable to be achieved the NGSC is prepared to submit 2 proposals to the L&R and S&T committees for comment and review. It was agreed by NGSC members that this was the only fair way to represent the group as a whole.

While both proposals have many similarities I would like to summarize the major differences regarding the method of sale as it pertains to each document.

Volume Equivalent Compromise Version: CNG/LNG shall be measured in mass and indicated in gallon equivalent units unless the weights & measures official having jurisdiction mandates otherwise through local regulation. This would make GGE/DGE units the only unit of quantity required to be displayed on the dispenser during a retail transaction.

Mass Compromise Version: CNG/LNG shall be measured in mass and indicated in mass. The display of supplemental information would also be permitted on the dispenser. This would allow GGE/DGE units to be indicated on the dispenser display face as long as it is stated the GGE/DGE units are for value comparison purposes only.

There is a willingness to accept equivalent units for advertising purposes such as street signs.

The NGSC is confident that a compromise will be found with the guidance of the S&T and L&R committees. Along with input coming from the floor during open hearings during the NCWM Interim Meeting a sense of which proposal best represents the body of the National Conference of Weights & Measures may be determined.

NCWM 2015 Interim Meeting: A joint session was held with the L&R and S&T Committees to hear this Item along with Item 237-1 of the L&R report and S&T Item 337-1. (Documentation for the S&T Item 337-1 can be found within the S&T report.) Two proposals were addressed. Proposal One, titled "the Volume Equivalent Compromise" requires natural gas to be measured in mass and indicated in equivalent gallon units or mass. Proposal Two titled, "The Mass Compromise" would require natural gas to be measured and indicated in mass with supplemental equivalent information to be displayed on the dispenser for value comparison.

Proposal One, Volume Equivalent Compromise Version was supported by industry representatives and several weights and measures officials. Some reasons for supporting Proposal One is it will cause less consumer confusion. Having one method of sale that consumers are currently familiar with allows them to make value comparisons at the pump and quickly compare street signage with various stations. It would be costly to manufacturer dispensers that can indicate in both mass and equivalent gallons.

Proposal Two, Mass Compromise Version was supported by numerous weights and measures officials who favor a traceable unit. Equivalent values are not NIST traceable units of measurement. The equipment currently is able to indicate in mass units. Currently there are several products that allow for supplemental information to be posted

(e.g., paint and fertilizer.) Natural gas composition fluctuates and the equivalent values have not been validated. With new fuels being developed the correct decision needs to be made on this matter because it may affect future proposals brought before the conference. The NIST S&T Technical Advisor requested that the FALS review the references and data that was used determine the values on the equivalent units. The FALS has agreed to put together a work group and provide additional feedback on this area.

The L&R Committee agreed to move Proposal One, “Volume Equivalent Compromise” version with revisions as addressed during the NGSC work session and open hearings. The Committee modified the language in Section 2.27.2.1. and 2.27.2.3. to add the language “or mass” to the last sentence in each section and moved this forward as a Voting item.

2.27.2.1. Method of Retail Sale. – All compressed natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in terms of mass, and indicated in the gasoline liter equivalent (GLE), ~~or~~ gasoline gallon equivalent (GGE), diesel liter equivalent (DLE), ~~or~~ diesel gallon equivalent (DGE) units, or mass.

2.27.2.3. Method of Retail Sale. – All liquefied natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in mass, and indicated in diesel liter equivalent (DLE), ~~or~~ diesel gallon equivalent (DGE) units, or mass.

2015 NCWM Annual Meeting: A joint session was held with the L&R and S&T Committees to hear this Item along with Item 237-1 of the L&R report and S&T Item 337-1. (Documentation for the S&T Item 337-1 can be found within the S&T report.) Mr. Matthew Curran (FALS Chair) provided the following modifications to the language as it appeared in Publication 16 (2015):

Under 2.27.1. Definitions (note renumbering of sections will be done editorially by NIST)

- Delete in its entirety Section 2.27.1.2. Gasoline Liter Equivalent (GLE).
- Under 2.27.1.3. remove metric equivalent 2.567 kg.
- Delete in its entirety Section 2.27.1.4. Diesel Liter Equivalent (DLE).

Under 2.27.2. Method of Retail Sale and Dispenser Labeling

- Under this section strike the term “is equal to” and replace with “means”
- Under 2.27.2.1. strike the terms equivalent (GLE) or gasoline. Strike diesel liter equivalent (DLE)
- Under 2.27.2.2. strike the term “kilogram.” Strike “1 Gasoline Liter Equivalent (GLE) is equal to means 0.678 kg of Natural Gas”.
- Under 2.27.2.3. strike the term “liter equivalent (DLE), diesel”
- Under 2.27.2.4. strike the term “kilogram (kg) or”. Strike **“1 Diesel Liter Equivalent (DLE) is equal to means 0.726 kg of Liquefied Natural Gas” or.** In the last sentence strike **“consistent with the method of sale used.”** Change the term and to ‘or’ **Compressed Natural Gas” and or “1 Diesel Gallon Equivalent (DGE).**

The Committee acknowledged receiving letters in support for this proposal and that the majority of comments made during the open hearings were also in support of the proposal. It was noted that measurement principles, value comparisons, traceability (note: equivalents are not traceable) need to be analyzed. It is difficult to work with equivalent values that fluctuate in value. There is a task group under the FALS that is currently looking at the equivalent numbers. It was also questioned whether both proposals were reviewed and considered in detail. A corrected document was received for Appendix A, Background and Justification for Handbook 130, Definition of “Diesel Gallon Equivalent (DGE)” of Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) as a Vehicular Fuel.

A majority of the Committee believe that the changes submitted during open hearings are fully developed and will align with language proposed in S&T 337-1. The language changes support clarifying that two types of natural gas exist as a motor vehicle fuel [compressed and liquefied]. Additionally, the proposal makes it clear that the method of sale for compressed natural gas may be either GGE, DGE, or mass, and for liquefied natural gas the method of sale may be DGE or mass; however all natural gas sold as a vehicle fuel shall be measured in mass. This Item along with 237-1 and S&T Item 337-1 received a split vote, therefore it was returned to the Committee.

Regional Association Comments:

CWMA 2014 Annual Meeting: This received numerous comments from both industry representatives and regulators. No new issues surfaced, and based on the number of comments heard, most of the comments pointed toward the need to keep the method of sale in mass, and that continued utilization of equivalencies is not in keeping with appropriate metrological practices. However, a supplemental marketing statement similar to the proposal developed by NIST would be useful to consumers. Mr. Ronald Hayes, who serves on the NGSC, indicated that the group met via teleconference in the week previous to the CWMA meeting and continues to work through this issue. Constantine Cotsoradis, Flint Hills Resources, presented an amendment to the Method of Sale section, which was forwarded to the steering committee for their consideration. Due to the contentious nature of this issue, further work is merited by the metrological community and industry. The Committee believes there is no evidence that suggests equivalency measures are appropriate for a method of sale. The Committee believes there is merit for consideration in the newly proposed verbiage because retail sales occur in other locations other than a retail dispenser. The Committee also recognizes the importance of consumer understanding and acceptance, and believes this issue needs to continue development through the NGSC.

CWMA 2015 Annual Meeting: Discussions were robust and reflected the same positions and information as prior meetings and dialogue. The Committee believes the item is fully developed. A vote of acclamation was too close to determine, so the Chair opted for a show of hands, followed by a standing vote. The item passed with a vote of 18 for, 17 opposed.

WWMA 2014 Annual Meeting: Mr. Mahesh Albuquerque, Chairman of the NGSC, provided an update from the NGSC September 4, 2014 meeting. The NGSC is reviewing: natural gas dispenser labeling requirements; refining the current proposal based upon feedback including data from the CRC regarding sampling to determine the average natural gas BTU content and data from the American Transportation Research Institute regarding the average BTU content of diesel fuel; and drafting an alternative proposal for the 2015 Interim Meeting.

WWMA recommended that NCWM consider all alternatives, including the NIST alternate proposal. However, if the NCWM determines that DGE/DLE is an appropriate method of sale for natural gas, the WWMA recommended that the sale of CNG at high-flow retail motor fuel dispensers be in units of DGE/DLE only, and at low-flow CNG retail motor fuel dispensers, allow GGE/GLE only. WWMA believed it would be confusing for drivers of light duty CNG vehicles to see prices expressed in both GGE and DGE. Also, WWMA suggested the NCWM consider a customer activated selectable display for indication at the dispenser (GGE/DGE/lb or GLE/DLE/kg). WWMA recommended striking the word “approximately” from Sections 2.27.2.2. and 2.27.2.4. because an approximate amount cannot be conclusively verified. Several regulators offered comments, both in support and in opposition, similar to those received at previous meetings. Five regulators supported the NIST alternative. One regulator commented that other fuel marketers may seek a gallon-equivalent for their fuels, e.g., electricity.

During the WWMA voting session, one regulator noted that the WWMA had previously recommended withdrawing all agenda items relating to DGE/DLE, and requested the L&R Committee poll the voting members to see how many are in support the continued use of equivalent units. The voting results were 23 in opposition to the use of equivalent units, and 12 in support of using equivalent units “going forward”. WWMA recommended this remain an Information item.

NEWMA 2014 Interim Meeting recommended that the NGSC consider that the Method of Sale be changed to mass and that the NIST proposal to modify Section 3.37, Mass Flow Meters in Handbook 44 (2014 edition) be considered. (The draft NIST proposal is on the NEWMA web site as a supporting document.) NEWMA recommended that this item, 237-1 and 337-1 from the S&T agenda be an Informational item pending final language from the NGSC at the NCWM 2015 Interim Meeting.

At the 2015 NEWMA Annual Meeting there was concern that this change further confuses consumers. The Committee believes that consumers are adaptable to the marketplace. The Committee is anxious to learn more about work being done on verifiable equivalency conversion factors that is being worked on by the Natural Gas Conversion WG. A motion was made to continue this as a voting item along with agenda Item 237-1 and S&T agenda item 337-1. At the time of the vote there was no second received on the motion. Therefore, the item was returned to the Committees.

At the 2014 SWMA Meeting, the Committee heard from Dr. Matthew Curran with the Natural Gas Steering Committee that they were working on the issue. The SWMA recommended this be an Informational item.

SWMA Action: Item 232-3
<p>Summary of comments considered by the regional committee (in writing or during the open hearings):</p> <p>This item was batched and heard together with S & T Item 337-1. Dr. Matthew Curran (FL) expressed concerns about the community not being able to get this issue addressed for the industry and marketplace cited four general possible options for this item and its L&R Companion item; adopt mass method of sale; adopt volume equivalent method of sale; adopt a dual/alternating display system; or do nothing (i.e. withdraw the items and leave it up to the individual states). Dr. Curran noted that the issue failed to pass the last two years as members appear to be firmly entrenched in their mass or volume equivalent positions so the first two options are not possible. He felt the item would find the same fate a third time through if we didn't think "outside of the box" and find a solution. He added that the fourth option (to withdraw the items) wasn't a preferred option since it would lead to individual state adoption or boutique markets. Further, he pointed out that the community received a "black eye" for failing to finish this issue as the nation was looking to us for a resolution and when we couldn't get it done in July other agencies went forward with their own resolutions and stopped following our progress. They elected to use other approaches including tax-derived and other values for the equivalencies, thus potentially creating boutique markets. Dr. Curran felt the third option was worth exploring and provided suggested language for a dual/alternating display to use as a jumping off point, but challenged the community to get creative and come up with other ideas to move this item forward if they felt this proposal wasn't acceptable. Absent other ideas, Dr. Curran recommended exploring a dual/alternating display option and provided suggested language. The language would not be effective until 2020, or another date decided by the membership and it would be non-retroactive to prevent industry from having to replace existing devices. One industry member stated prior to the SWMA meeting that they were concerned over potential consumer confusion with a dual/alternating display option. Mr. Gordon Johnson (Gilbarco) replied that it would cost between \$400 and \$600 thousand to redesign the face of the dispensers and asked if a toggle switch would be an option. Mr. Johnson was reminded that the toggle switch option had been suggested when this idea was first brought to the table two years ago. Mr. Johnson also added that all of their resources were occupied with the credit card reader changes. He further stated that some of his customers require NTEP approval, but they can't get NTEP approved dispensers until this issue is resolved. Mr. Johnson did state he would take this idea back and discuss with his company. A representative from Wayne Fueling Systems agreed with Mr. Johnson's comments. Ms. Carol Hockert (NIST) added that they have witnessed testing occurring in the field based on the volume equivalent and not mass (as is read by the instrument). Mr. Mike Cleary (CA-Retired) stated that we as a community have to tackle these tough issues as that is our job and people look to us for this, but to not do anything or walk away from it is not acceptable. Mr. Jerry Bundel (WA) echoed Mr. Cleary's comments and cautioned from any recommendations to withdraw these items.</p>
<p>Item as proposed by the regional committee: <i>(If different than agenda item)</i></p>

The committee recommends the following language:

232-3 Section 2.27. Retail Sales of Natural Gas Sold as a Vehicle Fuel

2.27. Retail Sales of Natural Gas Sold as a Vehicle Fuel.

2.27.1. Definitions.

2.27.1.1. Compressed Natural Gas (CNG). – A gaseous fuel composed primarily of methane that is suitable for compression and dispensing into a fuel storage container(s) for use as an engine fuel.

~~2.27.1.2. Gasoline Liter Equivalent (GLE).~~ – ~~Gasoline liter equivalent (GLE) means 0.678 kg of natural gas.~~

~~2.27.1.2.3. Gasoline Gallon Equivalent (GGE).~~ – Gasoline gallon equivalent (GGE) means 2.567 kg (5.660 lb) of compressed natural gas.

2.27.1.3. Diesel Gallon Equivalent (DGE). - Diesel gallon equivalent means 6.384 lb of compressed natural gas or 6.059 lb of liquefied natural gas.

2.27.1.4. Liquefied Natural Gas (LNG). – Natural gas which is predominantly methane that has been – 162 °C (– 260 °F) at 14.696 psia and stored in insulated cryogenic fuel storage tanks for use as an engine fuel.

2.27.2. Method of Retail Sale and Dispenser Labeling.

2.27.2.1. Method of Retail Sale. – All compressed natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in terms of mass, and indicated in the gasoline ~~liter equivalent (GLE), or gasoline~~ gallon equivalent (GGE), diesel gallon equivalent (DGE) units and ~~or mass.~~ Equivalent and mass units need not be displayed simultaneously, but may be displayed individually through customer activated controls.

(Nonretroactive as of January 1, 2020)

2.27.2.2. Dispenser Labeling Compressed Natural Gas. – All retail compressed natural gas dispensers shall be labeled with the equivalent conversion factor in terms of ~~kilograms or~~ pounds (~~lb~~). The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have ~~either~~ the statement “1 Gasoline Gallon Equivalent (GGE) ~~is equal to means~~ 5.660 lb of Compressed Natural Gas” or “1 Diesel Gallon Equivalent (DGE) means 6.384 lb of Compressed Natural Gas” ~~consistent with the method of sale used.~~

2.27.2.3. Method of Retail Sale. –All liquefied natural gas kept, offered, or exposed for sale and sold at retail as a vehicle fuel shall be measured in mass, and indicated in diesel 1 gallon equivalent (DGE) units,~~and or~~ mass. Equivalent and mass units need not be displayed simultaneously, but may be displayed individually through customer activated controls.

(Nonretroactive as of January 1, 2020)

2.27.2.4. Dispenser Labeling of Retail Liquefied Natural Gas. – All retail liquefied natural gas dispensers shall be labeled with the equivalent conversion factor in terms of pounds (lb). The

<p><u>label shall be permanently and conspicuously displayed on the face of the dispenser and shall have the statement “1 Diesel Gallon Equivalent (DGE) means 6.059 lb of Liquefied Natural Gas”.</u></p> <p><u>(Amended 2016 20XX)</u></p>
<p>Committee recommendation to the region:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>)</p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)</p>
<p>Reasons for the committee recommendation:</p> <p>The committee believes that with the revised language this Item is fully developed.</p>
<p align="center">COMPLETE SECTION BELOW FOLLOWING VOTING SESSION</p>
<p>Final updated or revised proposal from the region: (<i>If different than regional committee recommendation</i>)</p>
<p>Regional recommendation to NCWM for item status:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>)</p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)</p> <p><input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)</p>
<p>Regional Report to NCWM:</p> <p>Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.</p>
<p>The committee believes that with the revised language this item is fully developed.</p>

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 9 Section 2.XX Automatic Transmission Fluid. (See Related New Item 10)

Source:

American Petroleum Institute (2016)

Purpose:

Define how transmission fluids shall be identified in the marketplace on delivery documents and invoices and receipts from service.

Item under Consideration:

Amend NIST Handbook 130, Uniform Regulation for the Method of Sale of Commodities as follows:

2.XX Automatic Transmission Fluid.

2.XX.1 Labeling of Automatic Transmission Fluid. – Automatic transmission fluid shall be labeled.

2.XX.1. Labeling. – The label on a container of automatic transmission fluid ~~or~~, as well as the invoice or receipt from bulk distribution and service on an automatic transmission that includes the installation of automatic transmission fluid dispensed from a receptacle, dispenser, or storage tank shall not contain any information that is false or misleading.

In addition, each packaged container shall be labeled with the following:

- (a) the brand name;**
- (b) the name and place of business of the manufacturer, packer, seller, or distributor;**
- (c) the words “Automatic Transmission Fluid”;**
- (d) ~~the duty type of classification;~~ the performance claim or claims for the fluid; and**
- (e) an accurate statement of the quantity of the contents in terms of liquid measure.**

Each receptacle and/or storage tank of automatic transmission fluid shall be labeled with the following:

- (a) the brand name;**
- (b) the name and place of business of the manufacturer, packer, seller, or distributor; and**
- (c) the performance claim or claims for the fluid; and**
- (d) the words “Automatic Transmission Fluid.”**

2.XX.2. Documentation of Claims Made Upon Product Label. – Any manufacturer, ~~or~~ packer, or distributor of any product subject to this article and sold in this state shall provide, upon request of duly authorized representatives of the Director, documentation of any claim made upon their product label.

Background/Discussion:

Many original equipment manufacturers (OEMs) set their own transmission fluid standards and recommend that consumers use these fluids in their designated applications. However, the current version of Handbook 130 does not adequately define how transmission fluids shall be identified in the marketplace on delivery documents and invoices and receipts from service. Requiring more specific information on invoices and receipts will provide some assurance to consumers that recommended automatic transmission fluids are being installed in their cars and trucks.

The changes proposed are consistent with those approved for gasoline and diesel engine (motor) oils sold in packages or dispensed from bulk containers.

SWMA Action: New Item 9
<p>Summary of comments considered by the regional committee (in writing or during the open hearings):</p> <p>Kevin Ferrick, American Petroleum Institute provided testimony as follows:</p> <p>Mr. Chair, API submitted the changes shown in new items 9 and 10 with the intention of revising the way automatic transmission fluids are identified in the marketplace on delivery documents and invoices and receipts from service.</p> <p>Many original equipment manufacturers (OEMs) set their own transmission fluid standards and recommend that consumers use these fluids in their designated applications. In many cases, these standards are unique to the OEM’s transmissions, and fluids meeting the standards must be used to ensure proper operation. However, the current version of Handbook 130 does not adequately define how transmission fluids are identified in the marketplace on delivery documents and invoices and receipts from service. Requiring more specific information on invoices and receipts will provide some assurance to consumers that recommended automatic transmission fluids are being installed in their cars and trucks. Proper identification will also assist state weights and measures officials in determining performance claims for transmission fluids sold in bulk in their states. Additionally, the changes proposed are consistent with those approved for gasoline and diesel engine (motor) oils sold in packages or dispensed from bulk containers.</p> <p>The proposed language has been shared with the Western, Central and New England regions; API’s Lubricants Group; AOCA; and others. The Western region raised some concerns about the term “performance claim” vs “duty</p>

<p>cycle,” and I agree that we need to find more suitable wording. Our plan is to provide an amended version in time for the NCWM Interim meeting in January. Note that NIST also provided some edits that I will provide to the NIST L&R Advisor for inclusion in the meeting comments.</p> <p>FALS committee chairman, Matthew Curran, stated that the FALS Committee would review the item and have comments for the Interim meeting in January 2016.</p>
<p>Item as proposed by the regional committee: <i>(If different than agenda item)</i></p>
<p>Committee recommendation to the region:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i></p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i></p>
<p>Reasons for the committee recommendation:</p> <p>The committee supports the item with the editorial changes recommended by NIST in New Item 10 and more suitable language for the term “performance claim” which is expected for the interim meeting in January 2016.</p>
<p style="text-align: center;">COMPLETE SECTION BELOW FOLLOWING VOTING SESSION</p>
<p>Final updated or revised proposal from the region: <i>(If different than regional committee recommendation)</i></p>
<p>Regional recommendation to NCWM for item status:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i></p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i></p> <p><input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the “Additional Comments” section below)</i></p>
<p>Regional Report to NCWM:</p> <p>Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.</p>
<p>The committee supports the item with the editorial changes recommended by NIST in New Item 10 and more suitable language for the term “performance claim” which is expected for the interim meeting in January 2016.</p>

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents

New Item 14 Electric Watthour

Source:
NIST OWM (2016)

Purpose:

- 1) Make the weights and measures community aware of work being done within the U.S. National Work Group on Electric Vehicle Fueling and Submetering to develop proposed requirements for electric watt-hour meters used in submeter applications in residences and businesses;
- 2) Encourage participation in this work by interested regulatory officials, manufacturers, and users of electric submeters.
- 3) Allow an opportunity for the USNWG to provide regular updates to the S&T Committee and the weights and measures community on the progress of this work;
- 4) Allow the USNWG to vet specific proposals as input is needed.

Item Under Consideration:

Create a “Developing Item” for inclusion on the NCWM S&T Committee Agenda where progress of the USNWG can be reported as it develops legal metrology requirements for electric watt-hour meters and continues work to develop test procedures and test equipment standards. The following narrative is proposed for this item:

In 2012, NIST OWM formed the U.S. National Working Group on Electric Vehicle Fueling and Submetering to develop proposed requirements for commercial electricity-measuring devices (including those used in sub-metering electricity at residential and business locations and those used to measure and sell electricity dispensed as a vehicle fuel) and to ensure that the prescribed methodologies and standards facilitate measurements that are traceable to the International System of Units (SI).

In 2013, the NCWM adopted changes recommended by the USNWG to the NIST Handbook 130 requirements for the Method of Sale of Commodities to specify the method of sale for electric vehicle refueling. At the 2015 NCWM Annual Meeting, the NCWM adopted NIST Handbook 44 Section 3.40 Electric Vehicle Refueling Systems developed by the USNWG.

This Developing Item is included on the Committee’s agenda (and a corresponding item is proposed for inclusion on the L&R Committee Agenda) to keep the weights and measures community apprised of USNWG current projects, including the following:

- The USNWG continues to develop recommended test procedures for inclusion in a new EPO 30 for Electric Vehicle Refueling Equipment along with proposed requirements for field test standards.
- The USNWG is continuing work to develop a proposed code for electricity-measuring devices used in sub-metering electricity at residential and business locations. This does not include metering systems under the jurisdiction of public utilities. The USNWG hopes to have a draft code for consideration by the community in the 2016-2107 NCWM cycle.

The USNWG will provide regular updates on the progress of this work and welcomes input from the community.

For additional information, contact USNWG Chairman Tina Butcher at tbutcher@nist.gov or 301-975-2196 or Technical Advisor, Juana Williams at Juana.williams@nist.gov or 301-975-3989

Background/Discussion:

The creation of Developing Items on both the L&R and S&T Committee agendas will provide for a venue to allow the USNWG to update the weights and measures community on continued work to develop test procedures and test equipment standards. This item will also provide a forum for reporting on work to develop proposed method of sale requirements for electric watt-hour meters and a tentative device code for electric watt-hour meters in residential and business locations and serve as a placeholder for eventual submission of these proposals for consideration by NCWM.

SWMA Action: New Item 14
Summary of comments considered by the regional committee (in writing or during the open hearings):
No comments were received.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The item is being further developed by the national workgroup.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The item is being further developed by the national workgroup.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

237 NIST HANDBOOK 130 – UNIFORM ENGINE FUELS AND AUTOMOTIVE LUBRICANTS REGULATION

237-1 Section 1. 1.36. Liquefied Natural Gas (LNG) and Section 3.11. Compressed Natural Gas (CNG)

Source:

Clean Vehicle Education Foundation (2013)

Purpose:

Enable consumers to make cost and fuel economy comparisons between diesel fuel and natural gas.

Item under Consideration: Amend NIST Handbook 130, Uniform Engine Fuels and Automotive Lubricants Regulation as follows:

Section 1. Definitions

1.36. Liquefied Natural Gas (LNG). – Natural gas that has been liquefied at – 162 °C (– ~~259~~260 °F) and stored in insulated cryogenic tanks for use as an engine fuel.

Section 3. Classification and Method of Sale of Petroleum Products

3.11. Compressed Natural Gas (CNG).

3.11.1. How Compressed Natural Gas is to be Identified. – For the purposes of this regulation, compressed natural gas shall be identified by the term “Compressed Natural Gas” or “CNG.”

3.11.2. Retail Sales of Compressed Natural Gas Sold as a Vehicle Fuel.

~~**3.11.2.1. Method of Retail Sale.**— All CNG kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be in terms of the gasoline liter equivalent (GLE) gasoline gallon equivalent (GGE).~~

3.11.2.2~~1~~. Retail Dispenser Labeling.

3.11.2.2~~1~~.1 Identification of Product. – Each retail dispenser of CNG shall be labeled as “Compressed Natural Gas.”

~~**3.11.2.2.2. Conversion Factor.**— All retail CNG dispensers shall be labeled with the conversion factor in terms of kilograms or pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have either the statements “1 Gasoline Liter Equivalent (GLE) is equal to 0.678 kg of Natural Gas” “1 Gasoline Gallon Equivalent (GGE) is equal to 5.660 lb of Natural Gas consistent with the method of sale used.~~

3.11.2.2~~1~~.3~~2~~. Pressure. – CNG is dispensed into vehicle fuel containers with working pressures of ~~16 574 kPa~~, 20 684 kPa (**3000 psi**), or 24 821 kPa (**3600 psi**). The dispenser shall be labeled ~~16 574 kPa~~, 20 684 kPa (**3000 psi**), or 24 821 kPa (**3600 psi**) corresponding to the pressure of the CNG dispensed by each fueling hose.

3.11.2.2~~1~~.4~~3~~. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA 52.)

3.11.3. Nozzle Requirements for CNG. – CNG fueling nozzles shall comply with ANSI/AGA/CGA NGV 1.

Background/Discussion:

The gasoline gallon equivalent (GGE) unit was defined by NCWM in 1994 to allow users of natural gas vehicles to readily compare costs and fuel economy of light-duty compressed natural gas vehicles with equivalent gasoline powered vehicles. For the medium and heavy duty natural gas vehicles in widespread use today, there is a need to officially define a unit (already in widespread use) allowing a comparison of cost and fuel economy with diesel powered vehicles. The submitter stated that the official definition of a DLE and a DGE will likely provide justification for California, Wisconsin and many other states to permit retail sales of CNG for heavy-duty vehicles in these convenient units. The mathematics justifying the specific quantity (mass) of compressed natural gas in a DLE and DGE (please refer to the Report of the 99th National Conference on Weights and Measures (SP1193, 2014).

At the 2014 NCWM Interim Meeting Mr. Albuquerque (Chair, National Gas Steering Committee) notified the Committee that this item was actively being developed by the National Gas Steering Committee.

The L&R Committee is responded to the NGSC’s June 10, 2014 request to change the NGSC’s March 2014 recommendation for DGE units. The L&R Committee agreed that the CNG and LNG conversion factors proposed for use in converting these gases to DGE units should be revised in the 2014 Interim Report so that their numerical

values are expressed to three decimal places rather than two decimal places. These changes are reflected in the following proposed modifications to Section 1. Definitions 1.XX, and to the proposed new definition for “diesel gallon equivalent” to read: 1 Diesel Gallon Equivalent (DGE) is ~~6.380~~ 6.384 pounds of Compressed Natural Gas and 1 Diesel Gallon Equivalent of Liquefied Natural Gas is ~~6.060~~ 6.059 pounds.

At the 2014 NCWM Annual Meeting a joint session was held with L&R and S&T to hear this Item. It was noted that if the L&R did not move forward the Item 232-3 then there would be no reason to proceed with Item 237-2 and S&T Item 337-2 as it appeared in the Report of the 98th National Conference on Weights and Measures. There was discussion regarding the term “approximately equal” in Sections 2.27.2.2. and 2.27.2.4. It was noted this term was not a measurement equivalency but equal to in energy content. It was recommended that the Committee give consideration to amend the definition and clarify the meaning. Some spoke in opposition that this Item would cause consumer confusion in the marketplace, if adopted. Several members questioned where IRS obtained the numbers that are used the IRS tax form. NIST provided an alternative proposal and several members believed this proposal should be taken into consideration. Since the proposal from the NGSC was not released until June 10, 2014, members felt they did not have enough time to vet the modification or the NIST proposal. The Committee reviewed numerous letters in support of all the Items that reflect this issue.

March 2014 Natural Gas Steering Committee Report to the L&R and S&T Committees

The Natural Gas Steering Committee (NGSC) was formed in July 2013 to help understand and educate the NCWM membership regarding the technical issues surrounding the proposed changes to Handbook 44 and Handbook 130 submitted by the Clean Vehicle Education Foundation (CVEF), the anticipated impact of the proposed changes, and issues related to implementation requirements when compressed natural gas (CNG) and liquefied natural gas (LNG) are dispensed and sold as a retail engine fuel in gallon equivalent units.

At the NCWM Interim Meeting in January 2014, Mahesh Albuquerque, Chair of the NGSC provided the S&T and L&R Committees with an update from the NGSC, including proposed revisions to the proposals submitted by the CVEF. The NGSC heard comments from the floor related to the proposed revisions and requested additional time to further develop its recommendations. The S&T and L&R Committees agreed to allow the NGSC additional time to meet and develop alternative proposals to those on the S&T and L&R Committees January 2014 agendas, with the expectation that the NGSC recommendations would be ready for inclusion in Publication 16, and moved forward as a Voting Item at the July 2014 NCWM Annual Meeting.

Summary of NGSC Meeting Discussions

The NGSC met weekly following the January 2014 Interim Meeting, and focused on modifying the Clean Vehicle Education Foundation (CVEF) 2013 proposals for the recognition of diesel gallon equivalent (DGE) units for CNG/LNG dispenser indications and the method of sale for these two natural gas alternative engine fuels. The NGSC reviewed multiple modifications to those proposals including:

- limiting sales to a single unit of mass measurement enforceable by 2016;
- requiring indications in mass and gasoline and diesel gallon equivalents, while phasing in mass only units;
- require sale by mass as the primary means, but allow for the simultaneous display of volume equivalent units, so long as the purchaser always had access to the mass (traceable) measurement; and
- a proposal from NIST, OWM which would allow the posting of supplemental information to assist consumers in making value comparisons and for use by taxation/other agencies, but requiring the phase in of indications in mass

The NGSC received:

- input from Department of Energy (DOE) on the latest edition of the DOE TRANSPORTATION ENERGY DATA BOOK: EDITION 32 July 2013 available on the Oak Ridge National Laboratory website at: <http://cta.ornl.gov/data/index.shtml>;
- updates from CNG (3) and LNG (1) dispenser manufacturers indicating their dispensing systems comply with the requirements in the handbooks, and have the capability to indicate a sale in a single unit of measurement, and any further input on adding displays to the cabinet for additional units would require

further cost analysis; while one original equipment manufacturer indicated use of their LNG RMFD in a fleet operation where indications are only in the DGE; and

- feedback from committee members related to the pros and cons of requiring the indication of sale in mass or gallon equivalent units, including traceability, equipment capabilities, marketplace considerations, and units used by state and federal agencies.

Also noted in the NGSC discussions were:

- how a gallon equivalent unit is derived using energy content, and that the gallon equivalent is defined and measured in terms of mass, not volume;
- for the last 20 years, Handbook 44 and Handbook 130 have required all dispensing equipment to indicate deliveries of natural gas in GGE units to consumers, and in mass units for inspection and testing purposes. CNG RMFD equipment in the most states comply with the requirements in the handbooks;
- international practices for indicating CNG and LNG engine fuel deliveries are predominantly mass; Canada requires LNG indications in the kilogram and the corresponding OIML R 139 “Compressed gaseous fuel measuring systems for vehicles” standard requires indication of the measured gas in mass;
- the variations in engine efficiency relative to a single conversion factor based on an averaged energy content for LNG and the primary focus of the driving public and fleets on mileage rather than petroleum products no longer used to fuel their vehicles;
- the work ahead over the next year by ASTM committees to develop current CNG and LNG fuel quality standards which will need to be referenced in Handbook 130;
- differences in the measurement of the gallon and kilogram -- since the gallon is a volume measurement and not an energy measurement, and the Handbook 44 Mass Flow Meters Code includes a requirement for volume-measuring devices with ATC used in natural gas applications to be equipped with an automatic means to make corrections, if the device is affected by changes in the properties of the product; it was also noted that U.S. gasoline and diesel dispensers are not required to have ATC; whereas ATC does occur in sales at the wholesale level;
- how traceability applies to the measurement results at each level of the custody chain (to include the determination of the uncertainty of all calibrations and use of an appropriate unit of measurement); and
- the capabilities of equipment in the marketplace.

A DOE representative supported the use of gallon equivalents, and pointed out that they are used in the DOE Transportation Energy Data Book. The DOE representative also pointed out that other federal agencies including the IRS were requiring use of gallon equivalent units for reporting.

Industry representatives on the NGSC indicated that they are actively campaigning to their state and federal offices, encouraging each government branch to recognize sales of CNG and LNG in gasoline and diesel volume equivalent units. Industry sectors represented on the NGSC indicated that their customers are satisfied with the averaged fuel energy values that correspond to the conversion factors for CNG and LNG, with only one exception. The exception was a truck stop chain indicating their customers would be amenable to a single conversion factor for both fuels. The CVEF also provided a comparison of GTI’s 1992 study results and preliminary data from a 2013 study. The CVEF reported the constituents in natural gas as basically unchanged over 21 years since the NCWM first recognized the GGE. Industry unanimously opposed a recommendation for phasing in mass as the only unit of measurement, noting also that U.S. drivers would be confused by SI units while acknowledging that the U.S. is in the minority of countries whereby delivery and sales are by equivalent units. At the conclusion of the NGSC deliberations NGV America provided the following statement:

“One of the major advantages of the proposal as currently drafted with inclusion of the DGE and GGE units for natural gas is that this is a proposal that the natural gas industry can support. It further recognizes what is already the preferred practice for how natural gas is measured and dispensed. The latest proposal with DGE and GGE units provides a pathway forward toward a national consensus approach. If the proposal were to instead require use of kilograms or even pounds as the primary method of sale, industry would not support that proposal and likely would strongly oppose it this summer if NCWM were to consider it as a voting issue. Also, if NCWM finalizes on a standard that does not include DGE or GGE, industry is committed to pursuing adoption of an alternative standard on a state by state basis, which could lead to different treatment across the country.

Several states have already introduced legislation to recognize the DGE standard (CA, IL, MO, and VA) and I expect more will do so later this year. And you know Colorado and Arkansas already have put in place standards that recognize the DGE units.”

NGSC Recommendations:

After consideration of all of the above, the NGSC recommends alternate proposals to the L&R and S&T Committee Agenda Items which further modify and consolidate the Clean Vehicle Education Foundation 2013 proposals to include:

- 1) requirements for measurement in mass and indication in gallon equivalent units (Handbook 44 paragraphs S.1.3.1.1. and S.1.3.1.2.; and Handbook 130 paragraphs 3.11.2.1. and 3.12.2.1.);
- 2) posting of a label that has both the GGE and DGE or the GLE and DLE for CNG applications (Handbook 44 paragraphs S.5.2., S.5.3., UR.3.1.1., and UR.3.1.2; and Handbook 130 paragraphs 3.11.2.2.2. and 3.12.2.2.2.);
- 3) expression of all equivalent conversion factors expressed in mass units to 3 significant places beyond the decimal point for consistency (Handbook 44 paragraphs S.5.2., S.5.3., UR.3.1.1., and UR.3.1.2 and Appendix D and Handbook 130 Section 1, paragraphs 3.11.2.2.2. and 3.12.2.2.2.);
- 4) correction of the temperatures in the LNG definition (Handbook 130 Section 1);
- 5) addition of 16 CFR Part 309 for CNG automotive fuel rating (Handbook 130 paragraph 3.11.2.2.5.); and
- 6) reference to NFPA 52 (Handbook 130 paragraph 3.12.2.2.4.)

With regards to Handbook 44 the NGSC recommends withdrawing S&T Agenda Items 337-1 and 337-4 and the consolidation of Agenda Items 337-2, 337-3, and 337-5 into a newly revised single Voting Item designated as Item 337-2 as it appeared in the Report of the 98th National Conference on Weights and Measures. The NGSC also recommends further modifications to corresponding Handbook 130 proposals to align the definitions of related terms and method of sale with definitions, indicated delivery and dispenser labeling requirements being proposed for Handbook 44.

With regards to Handbook 44, the NGSC also recommends consideration of new a Developing Item addressing proposed changes to paragraph S.3.6 Automatic Density Correction designated as Item 360-4. This new proposal is consistent with the NGSC decision to encourage further work beyond the current scope of their work on the CVEF’s proposals to fully address all LNG applications.

Representatives of the NGSC and the S&T and L&R Committees met in March 2014, all agreed on the course of action outlined above.

Additional Contacts: Clean Energy, Seal Beach, CA, NGV America, Washington, DC, Clean Vehicle Education Foundation, Acworth, GA. Regional Association Comments: (Fall 2013 Input on the Committee’s 2014 Interim Agenda Items 337-1 through 337-5)

With regards to Handbook 130 the NGSC recommends withdrawing L&R Agenda Items 237-1 and the consolidation of Agenda Items 237-2, 237-3, and 237-5 into newly revised single Voting item designated as 237-1 in the Report of the 98th National Conference on Weights and Measures.

At the 2015 NCWM Interim Meeting a joint session was held with the L&R and S&T Committees to discuss this Item 232-4 of the L&R report. Documentation for the S&T Item 337-1 can be found within the S&T report. Two proposals were addressed. Proposal One, titled “the Volume Equivalent Compromise” requires natural gas to be measured in mass and indicated in equivalent gallon units or mass. The second proposal titled, “The Mass Compromise” would require natural gas to be measured and indicated in mass with supplemental equivalent information to be displayed on the dispenser for value comparison.

Proposal One was supported by industry representatives and several weights and measures officials. Some reasons for supporting Proposal One is it will cause less consumer confusion. Having one method of sale that consumers are currently familiar with allows them to make value comparisons at the pump and quickly compare street signage with

various stations. It would be costly to manufacturer dispensers that can indicate in both mass and equivalent gallons.

The second proposal was supported by numerous weights and measures officials who favor a traceable unit. Equivalent values are not NIST traceable units of measurement. The equipment currently is able to indicate in mass units. Currently there are several products that allow for supplemental information to be posted (ex. paint and fertilizer.) Natural gas composition fluctuates and the equivalent values have not been validated. With new fuels being developed the correct decision needs to be made on this matter because it may affect future proposals brought before the conference. The NIST Technical Advisor requested that the FALS review the references and data that are used for the values on the equivalent units. The FALS has agreed to put together a work group and provide addition feedback on this area. After solicitation for volunteers a mixed workgroup comprised of FALS and NGSC members was formed and is currently functioning under the NGSC. However, should the NGSC dissolve prior to completion of this review, the workgroup would move under FALS.

Ethan Bogren, NGSC Chair provided the following write up from their NGSC's meeting on January 14, 2015.

Natural Gas Steering Committee Update Report – January 14, 2015

The NGSC has been working diligently at achieving a compromise proposal regarding the sale of CNG/LNG as an alternative motor fuel. While the group has found success in establishing a consensus opinion in many aspects of the regulations, the group remains divided as to what unit of measure should be used for primary method of sale.

As you all know there has been a proposal submitted urging NCWM to adopt gallon equivalent units (GGE/DGE) as the primary method of sale for natural gas products to be used as an alternative motor fuel. There has been a feeling by many members of NCWM that this would be considered a diversion from the customary units in which commodities are sold in the United States causing concern.

Since a consensus regarding the units used for the primary method of sale for natural gas products was unable to be achieved the NGSC is prepared to submit 2 proposals to the L&R and S&T committees for comment and review. It was agreed by NGSC members that this was the only fair way to represent the group as a whole.

While both proposals have many similarities I would like to summarize the major differences regarding the method of sale as it pertains to each document.

Volume Equivalent Compromise Version: CNG/LNG shall be measured in mass and indicated in gallon equivalent units unless the weights & measures official having jurisdiction mandates otherwise through local regulation. This would make GGE/DGE units the only unit of quantity required to be displayed on the dispenser during a retail transaction.

Mass Compromise Version: CNG/LNG shall be measured in mass and indicated in mass. The display of supplemental information would also be permitted on the dispenser. This would allow GGE/DGE units to be indicated on the dispenser display face as long as it is stated the GGE/DGE units are for value comparison purposes only.

There is a willingness to accept equivalent units for advertising purposes such as street signs.

The NGSC is confident that a compromise will be found with the guidance of the S&T and L&R committees. Along with input coming from the floor during open hearings during the NCWM Interim Meeting a sense of which proposal best represents the body of the National Conference of Weights & Measures may be determined.

At the 2015 NCWM Interim Meeting a joint session was held with the L&R and S&T Committees to hear this Item along with Item 232-4 of the L&R report. Documentation for the S&T Item 337-1 can be found within the S&T report. Proposal One, titled "The Volume Equivalent Compromise" requires natural gas to be measured in mass and indicated in equivalent gallon units or mass. Proposal One was supported by industry representatives and several weights and measures officials. Reasons for supporting Proposal One is it will cause less consumer confusion. Having one method of sale that consumers are currently familiar with allows them to make value comparisons at the

pump and quickly compare street signage with various stations. It would be costly to manufacturer dispensers that can indicate in both mass and equivalent gallons.

Proposal Two titled, “The Mass Compromise” would require natural gas to be measured and indicated in mass with supplemental equivalent information to be displayed on the dispenser for value comparison. Proposal Two was supported by numerous weights and measures officials who favor a traceable unit. Equivalent values are not NIST traceable units of measurement. The equipment currently is able to indicate in mass units. Currently there are several products that allow for supplemental information to be posted (ex. paint and fertilizer.) Natural gas composition fluctuates and the equivalent values have not been validated. With new fuels being developed the correct decision needs to be made on this matter because it may affect future proposals bought before the conference. A NIST S&T Technical Advisor requested that the FALS review the references and data that are used for the values on the equivalent units. The FALS has agreed to put together a work group and provide addition feedback on this area.

Proposal Two, “The Mass Compromise” recommended the following:

1.XX. Diesel Gallon Equivalent (DGE). – Diesel Gallon Equivalent (DGE) means 6.384 pounds of compressed natural gas or 6.059 pounds of liquefied natural gas.

1.25. Gasoline Gallon Equivalent (GGE). – Gasoline Gallon Equivalent (GGE) means ~~to 2.567 kg~~ (5.660 lb) of compressed natural gas.

~~1.26. Gasoline Liter Equivalent (GLE).~~ ~~Equivalent to 0.678 kg (1.495 lb) of natural gas.~~

1.35. Liquefied Natural Gas (LNG). – Natural gas that has been liquefied at – ~~126.4~~ 162 °C (– ~~259~~ 260 °F) and stored in insulated cryogenic tanks for use as an engine fuel.

3.11. Compressed Natural Gas (CNG).

3.11.1. How Compressed Natural Gas is to be Identified. – For the purposes of this regulation, compressed natural gas shall be identified by the term “Compressed Natural Gas” or “CNG.”

3.11.2. Retail Sales of Compressed Natural Gas Sold as a Vehicle Fuel.

3.11.2.1. Method of Retail Sale. – All CNG kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be either in terms of the gasoline ~~liter equivalent (GLE) or gasoline~~ gallon equivalent (GGE), the diesel gallon equivalent (DGE), or in mass if required by the weights and measures authority having jurisdiction.

3.11.2.2. Retail Dispenser Labeling.

3.11.2.2.1. Identification of Product. – Each retail dispenser of CNG shall be labeled as “Compressed Natural Gas.”

3.11.2.2.2. Conversion Factor. – All retail CNG dispensers shall be labeled with the conversion factor in terms of ~~kilograms or~~ pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have either the statement ~~“1 Gasoline Liter Equivalent (GLE) is equal to 0.678 kg of Natural Gas” or “1 Gasoline Gallon Equivalent (GGE) is equal to means~~ 5.660 lb of Compressed Natural Gas”, or **“1 Diesel Gallon Equivalent (DGE) means 6.384 lb of Compressed Natural Gas”**, consistent with the method of sale used.

3.11.2.2.3. Pressure. – CNG is dispensed into vehicle fuel containers with working pressures of ~~16 574 kPa~~, 20 684 kPa (3,000 psig), or 24 821 kPa (3,600 psig). The dispenser shall be labeled ~~16 574 kPa~~, 20 684 kPa (3,000 psig), or 24 821 kPa (3,600 psig) corresponding to the pressure of the CNG dispensed by each fueling hose.

3.11.2.2.4. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA 52.)

3.11.3. Nozzle Requirements for CNG. – CNG fueling nozzles shall comply with ANSI/AGA/CGA NGV 1.

3.12. Liquefied Natural Gas (LNG).

3.12.1. How Liquefied Natural Gas is to be Identified. – For the purposes of this regulation, liquefied natural gas shall be identified by the term “Liquefied Natural Gas” or “LNG.”

3.12.2. Retail Sales of Liquefied Natural Gas Sold as a Vehicle Fuel.

3.12.2.1. Method of Retail Sale. – All LNG kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be in terms of the diesel gallon equivalent (DGE), or in mass if required by the weights and measures authority having jurisdiction.

3.12.2.3. Labeling of Retail Dispensers of Liquefied Natural Gas Sold as a Vehicle Fuel Labeling.

3.12.2.3.1. Identification of Product. – Each retail dispenser of LNG shall be labeled as “Liquefied Natural Gas.”

3.12.2.3.2. Conversion Factor. – All retail LNG dispensers shall be labeled with the conversion factor in terms of pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have the statement “1 Diesel Gallon Equivalent (DGE) means 6.059 lb of Liquefied Natural Gas”.

3.12.2.3.3. Automotive Fuel Rating. – LNG automotive fuel shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.12.2.3.4. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA ~~57~~52.)

Based upon information from the NGSC and information in Proposal One “Volume Equivalent Compromise Version” the Committee removed the following language that appeared in NCWM Publication 15 (2015) from the Item for Consideration:

Section 1. Definitions

1.XX. Diesel Gallon Equivalent (DGE). – means 6.384 lb of compressed natural gas or 6.059 lb of liquefied natural gas.

1.XX. Diesel Liter Equivalent (DLE). – means 0.765 kg of compressed natural gas or 0.726 kg of liquefied natural gas.

1.26. Gasoline Gallon Equivalent (GGE). – means 2.567 kg (5.660 lb) of compressed natural gas.

1.27. Gasoline Liter Equivalent (GLE). – means 0.678 kg (1.495 lb) of compressed natural gas.

Based upon information from the NGSC the Committee deleted Section 3.11.2.1. Method of Retail Sale and Section 3.11.2.2.2. Conversion Factor, and the entire Section for 3.12. Liquefied Natural Gas (LNG) from the Item Under Consideration in the 2015 NCWM Interim Report. The Committee is recommending it move forward as a Voting Item.

Section 3. Classification and Method of Sale of Petroleum Products

3.11.2.1. Method of Retail Sale. – All CNG kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be measured in terms of mass, and indicated in the gasoline liter equivalent (GLE), gasoline gallon equivalent (GGE), diesel liter equivalent (DLE), or diesel gallon equivalent (DGE) units.

3.11.2.2. Conversion Factor. – All retail CNG dispensers shall be labeled with the equivalent conversion factor in terms of kilograms or pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have either the statements “1 Gasoline Liter Equivalent (GLE) is Approximately Equal to 0.678 kg of Natural Gas” and “1 Diesel Liter Equivalent (DLE) is Approximately Equal to 0.765 kg of Compressed Natural Gas” or the statements “1 Gasoline Gallon Equivalent (GGE) is Approximately Equal to 5.660 lb of Compressed Natural Gas” and “1 Diesel Gallon Equivalent (DGE) is Approximately Equal to 6.384 lb of Compressed Natural Gas” consistent with the method of sale used.

3.11.2.5. Automotive Fuel Rating. – CNG automotive fuel shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 309.

2015 NCWM Annual Meeting: A joint session was held with the L&R and S&T Committees to hear this Item along with Item 232-4 and S&T Item 337-1. (Documentation for the S&T Item 337-1 can be found within the S&T report.) The Committee acknowledged receiving letters in support of these items and that the majority of comments made during the open hearings were also in support of this proposal. It was noted that measurement principles, value comparisons, traceability (note: equivalents are not traceable) need to be analyzed. It is difficult to work with equivalent values that fluctuate in value. There is a task group under the FALS that is currently looking at the equivalent numbers. A corrected document was received for Appendix A., Background and Justification for Handbook 130, Definition of “Diesel Gallon Equivalent (DGE)” of Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) as a Vehicular Fuel.

A majority of the Committee believe that the changes submitted during open hearings are fully developed and will align with language proposed in S&T 337-1. The language changes support clarifying that two types of natural gas exist as a motor vehicle fuel [compressed and liquefied]. Additionally, the proposal makes it clear that the method of sale for compressed natural gas may be either GGE, DGE, or mass, and for liquefied natural gas the method of sale may be DGE or mass; however all natural gas sold as a vehicle fuel shall be measured in mass. This Item along with 232-4 and S&T Item 337-1 received a split vote, therefore it was returned to the Committee.

Regional Association Comments:

CWMA received numerous comments from both industry representatives and regulators. No new issues surfaced, and based on the number of comments heard, most of the comments pointed toward the need to keep the method of sale in mass, and that continued utilization of equivalencies is not in keeping with appropriate metrological practices. However, a supplemental marketing statement similar to the proposal developed by NIST would be useful to consumers. Mr. Ronald Hayes, who serves on the Natural Gas Steering Committee, indicated that the group met via teleconference in the week previous to the CWMA meeting and continues to work through this issue. Constantine Cotsoradis, Flint Hills Resources, presented an amendment to the Method of Sale section, which was forwarded to the steering committee for their consideration. Due to the contentious nature of this issue, further work is merited by the metrological community and industry. The Committee believes there is no evidence that suggests equivalency measures are appropriate for a method of sale. The Committee believes there is merit for consideration in the newly proposed verbiage because retail sales occur in other locations other than a retail dispenser. The Committee also recognizes the importance of consumer understanding and acceptance, and believes this issue needs to continue development through the Natural Gas Steering Committee.

2015 CWMA Annual Meeting: Discussions were robust and reflected the same positions and information as prior meetings and dialogue. The Committee believes the item is fully developed. At the CWMA voting session, a vote of acclamation was too close to determine. The Chair opted for a show of hands, followed by a standing vote. The item passed with a vote of 18 For, 17 Opposed. The item has been fully developed and is ready for Voting status.

WWMA 2014 Annual Meeting: It was heard that the Natural Gas Steering Committee (NGSC) is reviewing: natural gas dispenser labeling requirements; refining the current proposal based upon feedback including data from the CRC regarding sampling to determine the average natural gas BTU content and data from the American Transportation

Research Institute regarding the average BTU content of diesel fuel; and drafting an alternative proposal for the 2015 NCWM Interim Meeting.

WWMA recommended that NCWM consider all alternatives, including the NIST alternate proposal. However, if the NCWM determines that DGE/DLE is an appropriate method of sale for natural gas, the WWMA recommended that the sale of CNG at high-flow retail motor fuel dispensers be in units of DGE/DLE only, and at low-flow CNG retail motor fuel dispensers, allow GGE/GLE only. WWMA felt it would be confusing for drivers of light duty CNG vehicles to see prices expressed in both GGE and DGE. Also, WWMA suggested the NCWM consider a customer activated selectable display for indication at the dispenser (GGE/DGE/lb or GLE/DLE/kg). WWMA recommended striking the word “approximately” from Sections 3.11.2.2.2. and 3.12.2.2.2. because an approximate amount cannot be conclusively verified.

Several regulators offered comments, both in support and in opposition, similar to those received at previous meetings. Five regulators supported the NIST alternative. One regulator commented that other fuel marketers may seek a gallon-equivalent for their fuels, e.g., electricity.

During the WWMA 2014 voting session, one regulator noted that the WWMA had previously recommended withdrawing all agenda items relating to DGE/DLE, and requested the L&R Committee poll the voting members to see how many are in support the continued use of equivalent units. The voting results were 23 in opposition to the use of equivalent units, and 12 in support of using equivalent units “going forward”. WWMA recommended this remain an Information item.

The 2014 NEWMA Interim meeting recommended that the NGSC consider that the Method of Sale be changed to mass and that the NIST proposal to modify Section 3.37, Mass Flow Meters in Handbook 44 (2014 Edition) be considered. (The draft NIST proposal is on the NEWMA web site as a supporting document <http://www.newma.us/meetings/interim/meeting-documents>.) NEWMA recommended that this item, 237-1 and 337-1 from the S&T agenda be Information Items pending final language from the NGSC at the 2015 NCWM 2015 Interim Meeting.

At the 2015 NEWMA Annual Meeting concern that this change further confuses consumers. Consumers are adaptable to the marketplace. The Committee is anxious to learn more about work being done on verifiable equivalency conversion factors that is being worked on by the Natural Gas Conversion WG. A motion was made to continue this as a Voting item along with agenda Item 237-1 and S&T Item 337-1. At the voting session, no second was received on the motion and all Items were returned to the Committee.

At the 2014 SWMA Meeting, the Committee heard from Dr. Matthew Curran, Florida that the NGSC was working on the item and that FALS had deferred the work to the NGSC. SWMA recommended that the item be an Informational item.

SWMA Action: Item 237-1
Summary of comments considered by the regional committee (in writing or during the open hearings):
FALS chairman Matthew Curran stated that this item is now a stand alone item and can be considered by the L&R committee.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The FALS committee has reviewed the item and recommends that it move forward.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)

<p>Regional recommendation to NCWM for item status:</p> <p><input checked="" type="checkbox"/> Voting Item on the NCWM Agenda</p> <p><input type="checkbox"/> Information Item on the NCWM Agenda</p> <p><input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>)</p> <p><input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)</p> <p><input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)</p>
<p>Regional Report to NCWM:</p> <p>Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.</p>
<p>The FALS committee has reviewed the item and recommends that it move forward and the committee agrees.</p>

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 13 Section 2.1.2. Gasoline-Ethanol Blends

Source:

American Petroleum Institute (2016)

Purpose:

Extend the effective date of the 1-psi vapor pressure exception to May 1, 2017 and make the effective date for this change July 28, 2016

Item under Consideration:

Amend the NIST Handbook 130, Engine Fuels and Automotive Lubricants Regulation as follows:

2.1.2. Gasoline-Ethanol Blends. – When gasoline is blended with ethanol, the ethanol shall meet the latest version of ASTM D4806, "Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel," and the blend shall meet the latest version of ASTM D4814, "Standard Specification for Automotive Spark-Ignition Engine Fuel," with the following permissible exceptions:

a. The maximum vapor pressure shall not exceed the ASTM D4814 limits by more than:

- (1) 1.0 psi for blends containing 9 to 10 volume percent ethanol from June 1 through September 15.
- (2) 1.0 psi for blends containing one or more volume percent ethanol for volatility classes A, B, C, D from September 16 through May 31.
- (3) 0.5 psi for blends containing one or more volume percent ethanol for volatility Class E from September 16 through May 31.

The vapor pressure exceptions in subsections 2.1.2. Gasoline-Ethanol Blends will remain in effect until May 1, ~~2016~~ **2017**, or until ASTM incorporates changes to the vapor pressure maximums for ethanol blends, whichever occurs earlier. **This one year extension is effective July 28, 2016.**

NOTE 1: The temperature values (e.g., 54 °C, 50. °C, 41.5 °C) are presented in the format prescribed in ASTM E29 “Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.”

(Added 2009) (Amended 2012, **20XX**)

Background/Discussion:

The exception to the ASTM standard that allowed a 1.0 psi vapor pressure waiver for ethanol blended gasoline (0.5 psi for Class E modified at that time) was allowed to remain in the NIST Handbook 130 until May 1, 2016 or upon completion of the ASTM work to incorporate the “vapor pressure exception” into D4814, whichever occurs first.

However, as explained below, if the issue is not resolved at ASTM prior to the effective date of May 1, 2016, additional time will be needed to pursue the change to the ASTM specification. It is for this reason that API, supported by SIGMA, PMAA, NACS and NATSO, is pursuing this one-year extension to the original effective date.

To generate data in support of a ballot at ASTM for the vapor pressure exception, significant research by the Coordinating Research Council (CRC) has been completed which shows that the driveability of the vehicle is not negatively impacted by the vapor pressure exception (CRC Report No. 668). It is important to note that significant resources were expended to complete this research in an expedient manner so that the research results would be available to the ASTM members. Using the CRC research as background, this year (2015) ASTM conducted a Subcommittee A ballot for the vapor pressure exception that closed with one negative vote which has since been resolved. The document is currently being balloted by the main ASTM committee on fuels and the ballot closed September 17.

The ASTM ballot to incorporate the 1-psi vapor pressure exception into D4814 is scientifically and technically sound. However, there is a possibility that the ballot could be held up from further consideration or even defeated at the Main Committee at this time because of ongoing issues with separate ballots that propose to incorporate 15-volume percent ethanol blends (E15) into D4814. If the RVP ballot does not pass at ASTM, then the vapor pressure exception that is currently available in HB-130, “Uniform Engine Fuels and Automotive Lubricants Regulation,” will expire, removing the exception from many states, largely on the Midwest and East Coast.

The vapor pressure exception is critical to the fungibility of the U.S. gasoline supply during the winter months of September 16 to May 31. As shown in the map below (Attachment 1), 12 states have adopted the vapor pressure exception provided by NIST HB-130 including: ME, NJ, PA, VA, WV, TN, TX, AR, MO, IL, IA, and WA. If the ASTM ballot does not pass the D02 Committee, the states that are served by the Colonial Pipeline and Buckeye Pipeline could also be impacted as they may not have the tank storage necessary to manage the additional products that would be needed in those states that would continue to grant the exception and those that would eliminate the vapor pressure exception. Consequently, the 13 states that would be impacted on May 1, 2016 would be expanded to include an additional 10 states served by Colonial (LA, MS, AL, GA, SC, NC, MD) and by Buckeye (KY, OH and IN) and the District of Columbia. This impact could possibly create fuel shortages in these states putting upwards pressure on the gasoline markets.

When this issue was being debated in 2012 several pipeline companies identified issues with the proposal relating to supply and hose issues are still applicable today. I would refer you to Magellan’s and Colonial’s letters to the FALS that identify the concerns with the loss of the vapor pressure exception:²

“[Magellan is] opposed to the elimination of the [vapor pressure exception] because it would (1) create a boutique fuel in several states (2) reduce pipeline efficiency which would result in supply disruptions (3) reduce gasoline supply by requiring a reduction of RVP and (4) impact the price unsuspecting motorists pay at the pump.” [January 19, 2012]

“It is Colonial’s understanding that all states along our system grant a 1.0 psi waiver for Non-VOC controlled RVP with the exception of Virginia, which adopts the latest version of HB 130. If this proposal were to go into effect, it would create a unique fuel to the State of Virginia markets.” [January 20, 2012]

² <http://www.nist.gov/pml/wmd/pubs/upload/07-lr-appx-d-237-1-12-annual-final.docx>

All efforts are being made to ensure that the vapor pressure exception will be implemented in ASTM D4814 in a timely manner so that the U.S. fuel supply will not be negatively influenced.

The proposal to make the one year extension effective July 28, 2016 will ensure that the vapor pressure exception continues to be available starting September 16, 2016. If the date is effective on January 1 of the following year (2017) then this would translate into a loss of the 1.0 psi (and 0.5 psi) waiver from September 16, 2016 to December 31, 2016 with the resulting consequences identified above.

The Introduction to HB 130 allows for the effective date to be something other than January 1 of the year following adoption. Specifically, Section R of the Introduction, page 6, states, “**Unless otherwise specified**, the new or amended regulations listed in this section are intended to become effective and subject to enforcement on January 1 of the year following adoption by NCWM.” [Emphasis added]. The language, “**unless otherwise specified**” allows the NCWM to set the effective date for changes subject to enforcement to any date in the calendar year. The July 28, 2016, date was chosen as it is hoped that this proposal will be adopted by the Conference on the last day of the 2016 Annual Conference and would then be implemented immediately, which would allow certainty in the market place and assist in limiting supply disruptions that might be seen by the consumer.

During the original debate there was a strong sentiment from a few states that the date should not be extended. Statements at the time supported the argument that ASTM was the proper venue to grant a waiver and that work should be done to ensure that the consumer’s engine would operate properly in the heat and cold (i.e., drivability was not impacted). Since that time, a very significant research project (>\$1MM) was conducted by the CRC that found that drivability was NOT negatively impacted. Drivability is effectively the ability of the vehicle’s ease of start (whether engine is cold or hot), warm up performance, and smooth responsive acceleration.

EPA grants a 1.0 psi RVP exception for non-RFG areas during the summer months (June 1 through September 15). For example, during the summer months gasoline sold in an area with a 9.0 RVP gasoline specification when blended with 10% volume ethanol can have a 10.0 RVP. The NCWM has granted a 1.0 psi RVP exception during the non-summer months and has not had any significant or meaningful impact to the consumer’s drivability.

The vapor pressure exception is critical to the fungibility of the U.S. gasoline supply during the winter months of September 16 to May 31. Without the 1.0 psi (0.5 psi) RVP exception, there is a possibility of reducing supply in nearly all of the states from Iowa to Pennsylvania down to Georgia and back to Texas putting upwards pressure on gasoline markets in those states.

SWMA Action: New Item 13
Summary of comments considered by the regional committee (in writing or during the open hearings):
Russ Lewis, representing the American Petroleum Institute gave a presentation regarding this item. Several comments were heard stating that the item going through ASTM is complicated with much data that needs to be reviewed therefore, the 1 year extension is needed. Chuck Corr stated that he was neutral but reiterated that there is much data that needs to be reviewed by ASTM.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes that this item is fully developed.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)

Regional recommendation to NCWM for item status:

- ☒ Voting Item on the NCWM Agenda
☐ Information Item on the NCWM Agenda
☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
☐ Developing Item on the NCWM Agenda (*To be developed by source*)
☐ Unable to consider at this time (*Provide explanation in the "Additional Comments" section below*)

Regional Report to NCWM:

Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. **This will replace any previous reports from your region on this item.**

The committee believes that this item is fully developed.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

237-2 Sections 2.1.3. Minimum Antiknock Index (AKI), Section 2.1.4. Minimum Motor Octane Number, and Section 3.2.5. Prohibition of Terms – Table 1.

Source:

General Motors (2013)

Purpose:

Remove obsolete Altitude De-rating of Octane practice, establish a National Octane Baseline, and harmonize Octane Labeling from state to state.

Item under Consideration:

Amend the NIST Handbook 130, Engine Fuels and Automotive Lubricants Regulation as follows:

Section 2. Standard Fuel Specification

2.1.3. Minimum Antiknock Index (AKI). – **The AKI of gasoline and gasoline-oxygenate blends shall not be less than 87.** The AKI shall not be less than the AKI posted on the product dispenser or as certified on the invoice, bill of lading, shipping paper, or other documentation;
(Amended 20XX)

2.1.4. Minimum Motor Octane Number. – The minimum motor octane number shall not be less than 82.
~~for gasoline with an AKI of 87 or greater;~~
(Amended 20XX)

Section 3. Classification and Method of Sale of Petroleum Products**3.2. Automotive Gasoline and Automotive Gasoline-Oxygenate Blends**

3.2.5. Prohibition of Terms. – It is prohibited to use specific terms to describe a grade of gasoline or gasoline-oxygenate blend unless it meets the minimum antiknock index requirement shown in Table 1. Minimum Antiknock Index Requirements.

Table 1.	
Minimum Antiknock Index Requirements	
Term	Minimum Antiknock Index

	ASTM D4814 Altitude Reduction Areas IV and V	All Other ASTM D4814 Areas
Premium, Super, Supreme, High Test	90	91
Midgrade, Plus	87	89
Regular Leaded	86	88
Regular, Unleaded (alone)	85	87
Economy	—	86

(Table 1. Amended 1997 and **20XX**)**Background/Discussion:**

These recommended changes to NIST Handbook 130, Engine Fuels and Automotive Lubricants Regulations to the octane will harmonize with an effort underway in the ASTM International (ASTM) Gasoline and Oxygenates Subcommittee to include a minimum motor octane number (MON) performance limit in gasoline. The naming of the various octanes is a function for weights and measures.

Nominally, vehicles manufactured after 1984 include engine computer controls maintaining optimal performance while using gasoline octane of 87-AKI or higher. The practice of altitude de-rating of octane, resulting in octanes below 87-AKI, reduces a vehicle's efficiency and fuel economy. Increasingly, more vehicles are boosted (turbocharged/supercharged) eliminating altitude intake air effects. Additionally, consumers using gasoline with an octane AKI below 87 will void their vehicle owner's warranty. The Coordinating Research Council (CRC) Report No. 660, "*Fuel Anti-knock Quality – Engine Response to RON (Research Octane Number) versus MON*," May 2011 demonstrates the continued need for gasoline MON octane for the large bored, naturally aspirated U.S. engines. Setting an 82-MON minimum maintains the current MON level for today's 87-AKI Regular Unleaded gasoline. A common U.S. octane specification between ASTM, NCWM, and Vehicle Owners Manuals will give states clear direction on how best to enforce proper fuel pump octane labeling and quality levels on behalf of vehicle consumers.

Leaded gasoline is not available at retail and therefore labeling guidance is not needed.

NCWM 2013 Interim Meeting: The FALS could not reach agreement on this item during their Sunday work session. The Committee received and reviewed several letters in support of this proposal. During open hearings Mr. Studzinski (General Motors) provided a presentation. The Committee also received comments in opposition to the proposal citing the lack of consumer complaints with suboctane and it was requested that the Committee wait until the CRC study provides data that can be used by ASTM and NCWM to determine whether or not a change is necessary. The Committee recommends this to be an Informational item.

During the 2013 NCWM Annual Meeting Mr. Hayes, FALS Chair provided a presentation and stated that the CRC study has been expanded and finalized data is expected by year end. It was also noted the ASTM ballot failed. The Committee concurs to await a recommendation from FALS once they have considered all the data. At the 2014 NCWM Interim Meeting Mr. Studzinski (General Motors) provided an update that the CRC study is almost finalized and then a ballot will be prepared for ASTM. Mr. Studzinski will have additional information for the 2015 NCWM Interim.

At the NCWM 2014 Annual Meeting Dr. Matthew Curran, FALS Chair remarked that the FALS is recommending this as an Informational item until the CRC study results complete. Mr. Bill Studzinski provided a briefing that a report should be issued in the fall of 2014.

At the NCWM 2015 Interim Meetings the FALS Chair notified the Committee that the CRC study is still being addressed. The 2015 L&R Committee is designating this as an Informational item.

At the NCWM 2015 Annual Meeting the FALS Chair provided an update that this item was on the ASTM ballot and did not pass at the June 2015 ASTM Meeting. ASTM is evaluating the negative ballots. FALS would like to wait further action within ASTM before changes can be considered by the Conference.

Regional Association Comments:

CWMA 2014 Annual Meeting: It was reported that that Mr. Studzinski (General Motors) provided an update at the 2014 NCWM Annual Meeting and the information is posted on the NCWM website. Mr. Studzinski indicated that this item is waiting on the CRC study final report which is anticipated before the 2015 NCWM Interim Meeting. The CRC study results will provide additional information to determine the future path of this item.

CWMA 2015 Annual Meeting: An industry representative from Marathon indicated there is an ASTM ballot that closes June 12 that requires a minimum 87.0 octane and 82.0 Minimum Octane Number (MON). This issue will be further discussed at the June ASTM meeting. An industry representative from BP commented that negative ballots would be adjudicated in June, and the decision will be made whether or not to move forward to the main D02 Committee at the December meeting. The Committee is recommending this remain Informational until additional information is received.

WWMA 2014 Annual Meeting heard opposition from two regulators. There was support from one regulator, who said that in his state, competing stations in the same city sell regular gas at two different octane levels. Two state directors recommended removing the word “leaded” from Table 1. WWMA recommended that the NCWM consider the data in the CRC study before determining the appropriate status for this item.

During the 2014 NEWMA Interim Meeting the L&R Chairman commented that the CRC study related to this item has not yet been released, but should be by the 2015 NCWM Interim meeting. An industry representative who is a member of the FALS commented that the study will be published before the Interim meeting, and FALS will be in a position by January to give L&R a recommendation as to how this item should move forward. NEWMA recommended that item remain an Informational item. At the 2015 NEWMA Annual Meeting they were informed the CRC study has yet to be released and agree this should remain Informational.

At the SWMA 2014 Annual Meeting, the Committee heard that CRC had finished the study and was evaluating the results. A report should be issued by the end of the year. The Committee was also made aware that FALS was working on the issue. SWMA recommended that the item be an Informational item.

SWMA Action: Item 237-2
Summary of comments considered by the regional committee (in writing or during the open hearings):
The FALS committee chairman, Matthew Curran, stated that this is a contentious item at ASTM and requested that this item continues to be informational.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The chairman of the FALS committee requested that the item remain informational.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your

region's considerations, support or opposition, and recommendations. **This will replace any previous reports from your region on this item.**

The chairman of the FALS committee requested that the item remain informational.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 10 **Section 2.14. Products for Use in Lubricating Automatic Transmission Fluids. And Section 3.14. Automatic Transmission Fluid. (See Related New Item 9)**

Source:

American Petroleum Institute (2016)

Purpose:

Define how transmission fluids shall be identified in the marketplace on delivery documents and invoices and receipts from service.

Item under Consideration:

Amend the NIST Handbook 130, Engine Fuels and Automotive Lubricants Regulation as follows:

2.14. Products for Use in Lubricating Automatic Transmissions. – Any automatic transmission fluid sold without limitation as to type of transmission for which it is intended shall meet all automotive manufacturers' recommended requirements for transmissions in general use in the state. Automatic transmission fluids that are intended for use only in certain transmissions, as disclosed on the label of its container **or on an invoice or receipt when dispensed from a receptacle, dispenser or storage tank**, shall meet the latest automotive manufacturers' recommended requirements for those transmissions. Adherence to automotive manufacturers' recommended requirements shall be based on tests currently available to the lubricants' industry and the state regulatory agency. Any material offered for sale or sold as an additive to automatic transmission fluids shall be compatible with the automatic transmission fluid to which it is added, and shall meet all performance claims as stated on the label **or on an invoice or receipt when dispensed from a receptacle, dispenser or storage tank**. Any manufacturer of any such product sold in this state shall provide, upon request by a duly authorized representative of the Director, documentation of any claims made on their product label **or on an invoice or receipt when dispensed from a receptacle, dispenser or storage tank**.

3.14. Automatic Transmission Fluid.

3.14.1. Labeling. – The label on a container of automatic transmission fluid ~~or~~, **as well as the invoice or receipt from bulk distribution and service on an automatic transmission that includes the installation of automatic transmission fluid dispensed from a receptacle, dispenser, or storage tank** shall not contain any information that is false or misleading.

In addition, each **packaged** container shall be labeled with the following:

- (a) the brand name
- (b) the name and place of business of the manufacturer, packer, seller, or distributor;
- (c) the words "Automatic Transmission Fluid";
- (d) ~~the duty type of classification;~~ **the performance claim or claims for the fluid;** and
- (e) an accurate statement of the quantity of the contents in terms of liquid measure.

Each receptacle and/or storage tank of automatic transmission fluid shall be labeled with the following:

- (a) the brand name;**

(b) the name and place of business of the manufacturer, packer, seller, or distributor; and
(c) the performance claim or claims for the fluid; and
(d) the words “Automatic Transmission Fluid.”

3.14.2. Documentation of Claims Made Upon Product Label. – Any manufacturer, ~~or~~ packer, or distributor of any product subject to this article and sold in this state shall provide, upon request of duly authorized representatives of the Director, documentation of any claim made upon their product label.

Background/Discussion:

Many original equipment manufacturers (OEMs) set their own transmission fluid standards and recommend that consumers use these fluids in their designated applications. However, the current version of Handbook 130 does not adequately define how transmission fluids shall be identified in the marketplace on delivery documents and invoices and receipts from service. Requiring more specific information on invoices and receipts will provide some assurance to consumers that recommended automatic transmission fluids are being installed in their cars and trucks.

The changes proposed are consistent with those approved for gasoline and diesel engine (motor) oils sold in packages or dispensed from bulk containers.

SWMA Action: Item 237-2
Summary of comments considered by the regional committee (in writing or during the open hearings):
The FALS committee chairman, Matthew Curran, stated that this is a contentious item at ASTM and requested that this item continues to be informational.
Item as proposed by the regional committee: <i>(If different than agenda item)</i>
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i>
Reasons for the committee recommendation:
The chairman of the FALS committee requested that the item remain informational.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: <i>(If different than regional committee recommendation)</i>
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input checked="" type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i> <input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the “Additional Comments” section below)</i>
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The chairman of the FALS committee requested that the item remain informational.

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 12 **Section 4.1. Water in Retail Engine Fuel Storage Tanks Gasoline-Alcohol Blends, Biodiesel Blends, Ethanol Flex Fuel, Aviation Gasoline, and Aviation Turbine Fuel. and 4.2. Water in Gasoline, Diesel, Gasoline-Ether, and Other Fuels.**

Source:

Colorado (2016)

Purpose:

Provide a consistent best management practice with regard to managing water in any engine fuel utilizing current detection technology.

Item under Consideration:

Amend NIST Handbook 130, Uniform Engine Fuels and Automotive Lubricants Regulation as follows:

4.1. Water in Retail Engine Fuel Storage Tanks ~~Gasoline-Alcohol Blends, Biodiesel Blends, Ethanol Flex Fuel, Aviation Gasoline, and Aviation Turbine Fuel.~~ No water phase greater than 6 mm (¼ in) as determined by an appropriate detection paste or other acceptable means, is allowed to accumulate in any retail tank utilized in the storage of engine fuels including, gasoline, gasoline-alcohol blend, biodiesel, biodiesel blends, ultra low sulfur diesel, ethanol flex fuel, aviation gasoline, and aviation turbine fuel, gasoline ether blends, kerosene, or any other engine fuels.

(Amended 2008, 2012, and 2014)

4.2. ~~Water in Gasoline, Diesel, Gasoline-Ether, and Other Fuels. Water shall not exceed 25 mm (1 in) in depth when measured with water indicating paste or other acceptable means in any tank utilized in the storage of diesel, gasoline, gasoline-ether blends, and kerosene sold at retail except as required in Section 4.1. Water in Gasoline-Alcohol Blends, Biodiesel Blends, Ethanol Flex Fuel, Aviation Gasoline, and Aviation Turbine Fuel.~~

~~(Amended 2008, 2012, and 2014)~~

Background/Discussion

All engine fuels degrade more rapidly in the presence of water, and can result in off spec product, microbial growth and internal corrosion of tanks and tank equipment. Besides impacting the quality of fuel such as when ethanol dissolves in water causing phase separation, affecting RVP and reducing AKI or octane number, the occurrence of microbial growth and corrosion particulates clog dispenser filters and affect other fuel clarity parameters. The fuels landscape has changed significantly across the country and currently almost all gasoline is blended with ethanol and all diesel is now Ultra Low Sulfur Diesel with up to five percent biodiesel. This proposal provides a consistent best management practice with regard to managing water in any engine fuel utilizing current detection technology (water finding paste or other acceptable means), and also simplifies the handbook by eliminating the necessity for paragraph 4.2.

SWMA Action: New Item 12	
Summary of comments considered by the regional committee (in writing or during the open hearings):	
Walter Huff representing the Mississippi Petroleum Marketers Association spoke in opposition to the item. The committee heard several comments from state officials and industry in support this item.	
Item as proposed by the regional committee: (If different than agenda item)	
Committee recommendation to the region: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)	
Reasons for the committee recommendation:	

The committee believes that this item is fully developed.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: <i>(If different than regional committee recommendation)</i>
Regional recommendation to NCWM for item status: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i> <input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the "Additional Comments" section below)</i>
Regional Report to NCWM: Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee believes that this item is fully developed.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

237-3 Section 4.3. Dispenser Filters

Source:

Missouri Department of Agriculture (2012)

Purpose:

Recognize the need for 10-micron or smaller nominal pore-sized filters for today's diesel engines.

Item under Consideration:

Amend the NIST Handbook 130, Engine Fuels and Automotive Lubricants Regulation as follows:

4.3. Dispenser Filters.

4.3.1. Engine Fuel Dispensers.

- (a) All gasoline, gasoline-alcohol blends, gasoline-ether blends, ethanol flex fuel, and M85 methanol dispensers shall have a 10 micron or smaller nominal pore-sized filter.
- (b) All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a ~~30~~ **10** micron or smaller nominal pore-sized filter **except for dispensers with flow rates greater than 15 gallons per minute which shall have a 30 micron or smaller nominal pore size filter.**

(Added 2008)(Amended 2014 **and 20XX**)

Abnormal dispenser filter plugging at retail will alert the retailer of potential storage tank problems. Requiring 10 micron filters for all products will reduce the inventory and the potential of installing the wrong filter for all products at the same site.

NCWM 2012 Interim Meeting: Mr. Ronald Hayes, FALS Chair, informed the Committee that FALS recommended that this item be Informational because of industry concerns that 10 micron filters would be too restrictive of flow in high-flow systems. One industry representative expressed opposition for the use of 10 micron filters and

recommends this item to be Withdrawn. A representative of an automobile manufacturer claimed diesel passenger vehicles do not have the sophisticated filtration systems commonly found on commercial duty vehicles and 10 micron filters on dispensers are needed for protection from particulate contamination. As proposed, this item could cause clogging of diesel dispenser filters in colder climates. The Committee believes this item has merit but lacks a consensus and also believes that FALS needs to address these concerns. The 2012 L&R Committee designated this item as an Informational item and assigned it to FALS for further development.

NCWM 2012 Interim Meeting: It was apparent to the Committee that there are many unresolved issues related to passenger vehicles. The Committee encourages the FALS to continue developing this item.

NCWM 2012 Annual Meeting: Several stakeholders spoke in opposition on this item. Mr. Ronald Hayes, FALS Chair remarked that the FALS worked on this item in 2007 and believes FALS needs to continue to work on this item. The NCWM L&R Committee agreed that this item is not ready and supports the continued development by FALS.

NCWM 2013 Interim Meeting: Mr. Hayes, FALS Chairperson, remarked that a similar item was brought before the Committee in 2007. FALS did not have enough time in their work session to work on this item. There are several stakeholders and states that are having issues with the terminology and would like it removed from the agenda. Mr. Ronald Hayes (Missouri) remarked that they supported this item because contamination is an issue with cars that do not have filtering systems. The Committee reviewed comments from the Regional Associations however; FALS did not have sufficient time to review and consider recommendation to the Committee. The Committee would like for FALS to continue to work on this item and is proposing this as an Informational item.

NCWM 2013 Annual Meeting: Mr. Hayes, FALS Chair requested that the Committee allow them to continue to work on a recommendation for this item. There was opposition on moving this item forward. In less than two years since this proposal came forward there has been no data developed. The Committee reviewed Regional Association reports, open hearing comments and letters received changed the status of this item to Developing.

NCWM 2014 Interim Meeting: Mr. Hayes (Missouri) who submitted the proposal offered modified language and supporting data to support the flow rate on 10 micron diesel filters. There was considerable discussion in regards to the fill time reduction, burdensome cost for station owners, and equipment and filter maintenance. It was noted that there is work being done within ASTM but at this time that information cannot be shared. The Committee reviewed the Item Under Consideration within NCWM Interim Publication 15 (2014). The Committee moved forward the modified language provided by Mr. Hayes for consideration as a Voting item.

NCWM 2014 Annual Meeting: The Committee reviewed several letters and additional data submitted by the Petroleum Marketers Association of American (PMAA). The FALS recommended this Item move forward for a Vote. During the open hearing there were mixed concerns in regards to this Item. Numerous concerns were expressed concerning the data from PMAA. Several comments were heard that ASTM should be allowed to develop a standard.

NCWM 2015 Interim Meeting: The FALS Chair notified the Committee that this proposal was discussed in their work session and the FALS group is divided on a recommendation. Russ Lewis (Marathon Petroleum Co.) submitted the CRC Report "Diesel Fuel Storage and Handling guide. In addition Prentiss Searles (API) provided the Committee with a listing of the various studies and the findings that support moving this Item forward. The Committee reviewed additional letters and Regional Association recommendations. During open hearing testimony there was discussion as to whether this is a weights and measures issue or a housekeeping issue for the stations. There was lengthy discussion as to the type of particulates and contaminants that a 10 micron could filter. Cost effectiveness was a concern as to who would bear the burden of the cost. With the extensive discussion on this subject matter and new information received the Committee is designating this item as a Voting item.

NCWM 2015 Annual Meeting Mr. Lewis (on behalf of API) provided a presentation on dispenser filters. Mr. Curran (FALS Chair) informed the Committee that FALS is divided on this issue but would like it to proceed with a vote. There were no new comments other than those that have already been provided in this report. The outcome of the voting session was a split vote, therefore it was returned to the Committee.

Regional Association Comments:

CWMA's L&R Committee heard no opposing comments and believes the proposal protects consumer vehicles and alerts retailers of potential product quality problems. Comments from previous meetings included a remark from an official indicating a smaller porosity filter may be acceptable, but for now this is a reasonable start. General Motors (GM) supported this item for passenger vehicles, as these vehicles now have 4-micron filters. Several industry representatives did not support this item during a past meeting because they believe this is a dispenser protection issue rather than a consumer protection issue. A state regulator remarked that it is a fuel quality issue, which impacts consumers' vehicles and fuel systems. Officials clarified that the proposal should only apply to passenger type vehicles, and it would specifically exempt high-flow rate meters such as truck stop meters. CWMA supported the following proposal and recommended it as a Voting item.

1.3. Dispenser Filters.

4.3.1. Engine Fuel Dispensers.

- (a) All gasoline, gasoline-alcohol blends, gasoline-ether blends, E85 fuel ethanol and M85 methanol dispensers shall have a 10 micron or smaller nominal pore-sized filter.
- (b) All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a ~~30~~ 10 micron or smaller nominal pore-sized filter **except for dispensers with flow rates greater than 15 gallons per minute which shall have a 30 micron or smaller nominal pore size filter.**

CWMA 2014 Annual Meeting: A regulator commented this item has been vetted through the regions several times. There is additional data on the NCWM website that was shared with FALS. It was stressed that this item is for retail motor fuel dispensers for passenger vehicles not high-flow meters. The regulator also mentioned the work done by his staff during cold weather to test whether or not flow rates through 10-micron filters were more diminished than fuel flowing through 30-micron filters during sub-zero weather. The regulator stated FALS supports this item. A second regulator commented that he was seeking clarification on whether determination of the flow rate would be made with a marked flow rate or flow rate at the dispenser. Other regulators stated the intent was to have 10 micron filters on passenger vehicle dispensers and light trucks only. This proposal best accomplishes that end. An industry representative asked about the cost between the 10-micron filters and 30-micron filters. A regulator responded costs were the same. The CWMA L&R Committee believes the item has been fully developed and is ready for Voting.

CWMA 2015 Annual Meeting: Mr. Lewis (Marathon Oi) gave a presentation related to this project. He spoke in favor of the proposal. A representative from BP commented that when they owned retail stations, they required 10 micron filters on diesel dispensers. Currently, when they work with jobbers, they still recommend it. He spoke in favor of the proposal. A regulator from Minnesota commented that if a filter is the last line of defense, it is a positive step for consumers, and spoke in favor of the proposal. A regulator from Missouri commented that any state with a fuel quality program should have a dispenser filter requirement of 10 microns. It is even more critical in diesel engines today for the fuel to be as clean as possible due to the high pressure technology in the engines. The Committee moved this forward as a Voting item.

WWMA 2013 Annual Meeting: It was heard from one regulatory official recommending Withdrawal of the item because it is unnecessary. There is concern with the potential negative impact on the speed of fuel delivery. The submitting regulatory official supports the item with the language for Section 4.3.1.(b) as presented above in the CWMA Interim Report. WWMA recommends this item as a Voting item.

WWMA 2014 Annual Meeting heard opposition to this item from two regulators. Mr. Ronald Hayes, Missouri, spoke in favor of the item, saying that it would help protect high-pressure fuel rails in today's diesel engines and that the auto manufacturers and Engine Manufacturers Association (EMA) want this amendment. Mr. Hayes stated that additional data (subsequent to the Petroleum Marketers Association of America study) will be posted on the NCWM website under Publication 15 documents prior to the 2015 Interim Meeting. WWMA recommended this remain an Information Item and that NCWM wait until they receive new additional data and can determine the appropriate status.

NEWMA 2014 Interim Meeting: A regulator commented that the item should be withdrawn from the agenda because weights and measures should not legislate a filter size. Another regulator stated that it was the responsibility

of ASTM to provide a standard that yields fuel fit for purpose fuel. An industry representative from petroleum marketers opposes this item. NEWMA recommended that this Item be Withdrawn.

NEWMA 2015 Annual Meeting a presentation was provided by Mr. Russ Lewis (Marathon Petroleum) on behalf of the American Petroleum Institute (API). Among other topics, Mr. Lewis indicated the EPA is looking more closely at filter issues in general, and their report is due to be released during summer, 2015. After the presentation, a retired official asked what was coming from the terminal that could cause filter plugging. Mr. Lewis indicated that the most effective way to address particulate matter in fuel is to have a robust maintenance system throughout the entire fuel distribution system. A state official asked about Europe's experience with diesel fuel. Part of the more stringent diesel specification in Europe requires a fuel filter with a 5 micron pore size. A regulator asked if there was more frequent filter changing. Mr. Lewis indicated if the only thing you do when a filter is clogged is replace the filter, it will be more frequent. However, if a frequently clogged filter leads to better tank maintenance, once the tanks are cleaned, filter replacements will be less frequent. A PMD Corporation official indicated that they are seeing a lot of problems with filters being damaged, and they would support better fuel housekeeping, and supports 10 micron filters. A state regulator commented that the information in Mr. Lewis's presentation changed his mind to support moving a 10 micron filter. NEWMA feels that this item is fully developed and recommended that it be a Voting item.

SWMA 2011 Annual Meeting is was reported that an industry representative stated that standard retailer dispensers use a 10-micron filter, and high capacity dispensers use 30-micron filters (i.e., diesel dispensed at truck stops). The company's engineers have determined that reducing a 30-micron filter to a 10-micron filter will drastically reduce flow rate to trucks. Another industry representative agreed and re-iterated that truck stops would see a tremendous reduction in flow. The Committee believed this proposal was not practical and would have a negative impact and undue burden on the trucking industry. SWMA did not forward the item to NCWM.

SWMA 2012 Annual Meeting: An industry representative commented that the current technology to put a 10-micron filter on diesel at a truck stop will prohibit fuel from being dispensed in a timely manner and, therefore, opposes this. The Committee recommends the use of 10-micron filters be limited to passenger vehicle meters and specifically exempt high-flow rate meters. SWMA recommended the item be a Voting item but with the changes as described by the Committee.

SWMA 2013 Annual Meeting: The SWMA supported moving this item forward as a Voting item on the NCWM agenda modifying the requirements to read; 10 micron filters on devices delivering 15 gpm or less and 30-micron filters for greater than 15 gpm.

At the 2014 SWMA Meeting, the Committee was given a copy of the CRC Report No. 667, Diesel Fuel and Handling Guide. The Committee heard that a study had been completed on low temperature flow rates and that information was on the FALS section of the NCWM website. The CRC report is available at www.crcao.org. SWMA recommended that the item be Informational.

SWMA Action: Item 237-3
Summary of comments considered by the regional committee (in writing or during the open hearings):
<p>Russ Lewis representing API provided a presentation and provided the following information:</p> <p>All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a 30 10-micron or smaller nominal pore-size filter except for dispensers with flow rates greater than 15 gallons per minute which shall have a 30 micron or smaller nominal pore size filter with the following exceptions:</p> <ol style="list-style-type: none"> 1. Dispensers with flow rates greater than 15 gallons per minute shall use a 30-micron or smaller nominal pore size filter. 2. Dispensers with flow rates less than 15 gallons per minute in the following states may use a 30-micron or smaller nominal pore size filter during the months of December through March. These states include: Nevada, Idaho, Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, Michigan, Illinois, Pennsylvania, New York, Vermont, New Hampshire, and Maine. This exception has a sunset date of April 2019. 3. Dispensers with flow rates less than 15 gallons per minute in North Dakota may use a 30-micron or smaller nominal pore size filter during the months of November through March. This exception has a sunset date of April 2019.

Item as proposed by the regional committee: (If different than agenda item)

The committee recommends the following language:

4.3. Dispenser Filters.**4.3.1. Engine Fuel Dispensers.**

- (a) All gasoline, gasoline-alcohol blends, gasoline-ether blends, ethanol flex fuel, and M85 methanol dispensers shall have a 10 micron or smaller nominal pore-sized filter.
- (b) All biodiesel, biodiesel blends, diesel, and kerosene dispensers shall have a ~~30~~ **10** micron or smaller nominal pore-sized filter ~~except for dispensers with flow rates greater than 15 gallons per minute which shall have a 30 micron or smaller nominal pore size filter, with the following exceptions:~~
 - 1. Dispensers with flow rates greater than 15 gallons per minute shall use a 30-micron or smaller nominal pore size filter.
 - 2. Dispensers with flow rates equal to or less than 15 gallons per minute in the following states may use a 30-micron or smaller nominal pore size filter during the months of December through March. These states include: Nevada, Idaho, Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, Michigan, Illinois, Pennsylvania, New York, Vermont, New Hampshire, and Maine. This exception has a sunset date of April 2020.
 - 3. Dispensers with flow rates equal to or less than 15 gallons per minute in North Dakota may use a 30-micron or smaller nominal pore size filter during the months of November through March. This exception has a sunset date of April 2020.

(Added 2008)(Amended 2014 and 20XX)

Committee recommendation to the region:

- ☒ Voting Item on the NCWM Agenda
- ☐ Information Item on the NCWM Agenda
- ☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
- ☐ Developing Item on the NCWM Agenda (*To be developed by source*)

Reasons for the committee recommendation:

The committee believes this item is fully developed with the above proposed amendment.

COMPLETE SECTION BELOW FOLLOWING VOTING SESSION**Final updated or revised proposal from the region: (If different than regional committee recommendation)****Regional recommendation to NCWM for item status:**

- ☒ Voting Item on the NCWM Agenda
- ☐ Information Item on the NCWM Agenda
- ☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
- ☐ Developing Item on the NCWM Agenda (*To be developed by source*)
- ☐ Unable to consider at this time (*Provide explanation in the "Additional Comments" section below*)

Regional Report to NCWM:

Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your

region's considerations, support or opposition, and recommendations. **This will replace any previous reports from your region on this item.**

The committee believes that this item is fully developed.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

260 HANDBOOK 133

New Item 1 Section 1.2.1. Inspection Lots, Section 1.3.1. Audit Tests, Section 3.10. Mulch and Soils Labeled by Volume

Source:

Mulch & Soil Foundation and NIST OWM (2016)

Purpose:

Clarify test procedures and promote uniform practices.

Item under Consideration:

Amend NIST Handbook 133 as follows:

Chapter 1- General Information

1.2. Package Requirements

1.2.1. Inspection Lot

An "inspection lot" (called a "lot" in this handbook) is defined as a collection of identically labeled (except for quantity or identity in the case of random packages) packages available for inspection at one time. The collection of packages will pass or fail as a whole based on the results of tests on **a statistically valid, randomly drawn** sample ~~drawn from of~~ the lot. This handbook describes procedures to determine if the packages in an "inspection lot" contain the declared net quantity of contents and if the individual packages' variations are within acceptable limits.

1.3. Sampling Plans

This handbook contains two sampling plans used to inspect packages: "Category A" and "Category B." Use the "Category B" Sampling Plans to test meat and poultry products at point-of-pack locations that are subject to U.S. Department of Agriculture Food Safety and Inspection Service (FSIS) requirements. When testing all other packages, use the "Category A" Sampling Plan.

Inspections by weights and measures officials must provide the public with the greatest benefit at the lowest possible cost. Sampling reduces the time to inspect a lot of packages, so a greater number of items can be inspected. Net content inspection, using sampling plans for marketplace surveillance, protects consumers who cannot verify the net quantity of contents. This ensures fair trade practices and maintains a competitive marketplace. It also encourages manufacturers, distributors, and retailers to follow good manufacturing and distribution practices.

Testing a "sample" of packages from a lot instead of every package is efficient, but the test results have a "sampling

variability” that must be corrected before determining if the lot passes or fails. The “Category A” sampling plans give acceptable lots a 97.5 % probability of passing. An “acceptable” lot is defined as one in which the “average” net quantity of contents of the packages equals or exceeds the labeled quantity. The “Category B” sampling plans give acceptable lots at least a 50 % probability of passing. The sampling plans used in this handbook are statistically valid. That means the test acceptance criteria are statistically adjusted, so they are both valid and legally defensible. This handbook does not discuss the statistical basis, risk factors, or provide the operating characteristic curves for the sampling plans. For information on these subjects, see explanations on “acceptance sampling” in statistical reference books.

A randomly selected sample is necessary to ensure statistical validity and reliable data. This is accomplished by using random numbers to determine which packages are chosen for inspection. Improper collection of sample packages can lead to bias and unreliable results.

1.3.1. Audit Tests

Audits may be used to speed the process of detecting possible net content violations. These audit procedures may include:

- using smaller sample sizes;
- using tare lists provided by manufacturers to spot check; or
- selecting samples without collecting a random sample.

These audit procedures allow spot checking of more products than is possible with the more structured techniques, but do not take the place of “Category A” or “Category B” testing.

Do not take enforcement action using audit test results. If, after an audit test, there is suspicion that the package lot is not in compliance, use the appropriate “Category A” or “Category B” sampling plan to determine if the lot complies with the package requirements.

Chapter 3 – Test Procedures – For Packages Labeled by Volume

3.10. Mulch and Soils Labeled by Volume

Mulch is defined as “any product or material except peat or peat moss that is advertised, offered for sale, or sold for primary use as a horticultural, above-ground dressing, for decoration, moisture control, weed control, erosion control, temperature control, or other similar purposes.”

Soil is defined as “any product or material, except peat or peat moss that is advertised or offered for sale, or sold for primary use as a horticultural growing media, soil amendment, and/or soil replacement.”

3.10.1. Test Equipment:

- A test measure appropriate for the package size that meets the specifications for test measures in Table 3-4. “Specifications for Test Measures for Mulch and Soils”
- Drop cloth/polyethylene sheeting for catching overflow of material
- Level (at least 15 cm [6 in] in length)

Table 3-4 Specifications for Test Measures for Mulch and Soils

Nominal Capacity of Test Measure ⁴	Actual Volume of the Measure	Interior Length ¹	Interior Width ¹	Interior Height ²	Marked Intervals on Interior Wall ³	Volume Equivalent of Marked Intervals
30.2 L (1.07 cu ft) for testing packages that contain less than 28.3L (1 cu ft or 25.7 dry qt)	31.9 L (1.13 cu ft)	213.4 mm (8.4 in)	203.2 mm (8.0 in)	736.6 mm (29 in)	12.7 mm ($\frac{1}{2}$ in)	550.6 mL (33.6 cu in)
28.3 L (1 cu ft)	28.3 L (1 cu ft) <u>33.04 L</u> <u>(1.16 cu ft)</u>	304.8 mm (12 in)	304.8 mm (12 in)	304.8 mm (12 in) <u>355.6 mm</u> <u>(14 in)</u>		1179.8 mL (72 cu in)
56.6 L (2 cu ft)	63.7 L (2.25 cu ft) <u>61.3 L</u> <u>(2.16 cu ft)</u>	304.8 mm (12 in)	304.8 mm (12 in)	685.8 mm (27 in) <u>660.4 mm</u> <u>(26 in)</u>		
		406.4 mm (16 in)	228.6 mm (9 in)	685.8 mm (27 in) <u>660.4 mm</u> <u>(26 in)</u>		
84.9 L (3 cu ft)	92 L (3.25 cu ft) <u>89.4 L</u> <u>(3.16 cu ft)</u>	304.8 mm (12 in)	304.8 mm (12 in)	990.6 mm (39 in) <u>965.2 mm</u> <u>(38 in)</u>		
		406.4 mm (16 in)	228.6 mm (9 in)	990.6 mm (39 in) <u>965.2 mm</u> <u>(38 in)</u>		

Measures are typically constructed of 1.27 cm ($\frac{1}{2}$ in) marine plywood. **The measure must accommodate the entire contents of the package being tested, and** a transparent sidewall is useful for determining the level of fill, but must be reinforced if it is not thick enough to resist distortion. If the measure has a clear front, place the level gage at the back (inside) of the measure so that the markings are read over the top of the mulch.

Notes

¹. Other interior dimensions are acceptable if the test measure approximates the configuration of the package under test, **can accommodate the entire contents of the package at one time** and does not exceed a base configuration of the package cross-section.

². The height of the test measure **shall be 355.6 mm (14 in) for a 1 cubic foot package, 660.4 mm (26 in) for a 1.5 - 2 cubic foot package or 965.2 mm (38 in) for a 3 cubic foot package.** ~~may be reduced, but this will limit the volume of the package that can be tested.~~

³. When lines are marked in boxes, they should extend to all four sides of the measure if possible to improve readability. It is recommended that a line indicating the MAV level also be marked to reduce the possibility of reading errors when the level of the mulch is at or near the MAV.

⁴. The Nominal Capacity is given to identify the size of packages that can be tested in a single measurement using the dry measure with the listed dimensions. It is based on the most common package sizes of mulch in the marketplace. If the measures are built to the dimensions shown above the actual volume will be larger than the nominal volume so that plus errors (overfill) can be measured accurately.

(Amended 2010 ~~and 20XX~~)

3.10.2. Test Procedure

1. Follow the Section 2.3.1. "Define the Inspection Lot." Use a "Category A" sampling plan in the inspection, and select a random sample.

~~2. Open each package in turn. Empty the contents of the package into a test measure and level the contents by hand. Do not rock, shake, drop, rotate, or tamp the test measure. Read the horizontal marks to determine package net volume.~~

- ~~2.~~ **Note** Some types of mulch are susceptible to clumping and compacting. ~~Take steps~~ To ensure that the material is loose and free flowing when placed into the test measure, gently **massage the package while rolling** the bag **on the ground (or flat surface) at least four full rotations (but no more than eight full rotations), without lifting or dropping the package,** before opening to reduce the clumping and compaction of the material.

Note: Mulch products stored exposed to the elements may become saturated with moisture. Excessive moisture adds weight to mulch particles and distorts the volume test results. Test samples with flowing or collected moisture in the package shall be excluded from the test procedure.

~~3. Exercise care in leveling the surface of the mulch/soil and determine the volume reading from a position that minimizes errors caused by parallax.~~

3. Placing contents into the test measure.

- Open the bag, gather the bag opening to ensure that no product is lost. Place the gathered bag opening as far into the top of the measure as possible without touching or leaning against the measure.
- Release the bag opening and quickly dump the contents of the package into a test measure in a continuous flow
Note: Do not touch the product or test measure at any time during this procedure. Do not disturb the test measure by rocking, shaking, dropping or tamping it during the test procedure.
- Massage the outside of the bag to maintain a continuous flow of the product but not for the purpose of de-clumping the product.
- Using your hand, gently level the contents, being careful not to affect the compaction of the product.

4. Read the horizontal marks at a position level with the product and round the readings between two marked intervals up to the nearest 38.1 mm (½ in) increment to determine the package net volume.

- ~~5.~~ **4.** Determine package errors by subtracting the labeled volume from the package net volume in the measure. Record each package error.

$$\text{Package Error} = \text{Package Net Volume} - \text{Labeled Volume}$$

3.10.3. Evaluation of Results

Follow the procedures in Section 2.3.7. “Evaluate for Compliance” to determine lot conformance.

Note: In accordance with Appendix A, Table 2-10. Exceptions to the Maximum Allowable Variations for Textiles, Polyethylene Sheeting and Film, Mulch and Soil Labeled by Volume, Packaged Firewood, and Packages Labeled by Count with 50 Items or Fewer, and Specific Agricultural Seeds Labeled by Count, apply an MAV of 5 % of the declared quantity to mulch and soil sold by volume. When testing mulch and soil with a net quantity in terms of volume, one package out of every 12 in the sample may exceed the 5 % MAV (e.g., one in a sample of 12 packages; two in a sample of 24 packages; four in a sample of 48 packages). However, the sample must meet the average requirement of the “Category A” Sampling Plan.

Background/Discussion:

Recent observations of test activities being conducted by industry and states indicate there are areas in the current test procedures that are not sufficiently defined to assure uniform testing practices by all parties. Council testing conducted by Dr. William Fonteno at the Horticultural Substrata Lab at North Carolina State University indicates some reported and observed variations in testing procedures that are not completely defined in HB133 can have an adverse impact on testing results due to the highly variable particle size distribution that is the very nature of the products.

There should be no major costs resulting from this proposal. Some manufacturers and inspectors may need updated test measures suitable for the package size being tested. All stakeholders will benefit from coordinated training by NIST and industry and test procedures uniformly applied in interstate commerce.

SWMA Action: New Item 2
Summary of comments considered by the regional committee (in writing or during the open hearings):
Bob Lagassee of the Mulch & Soil Council spoke in favor of the item.
Item as proposed by the regional committee: (If different than agenda item)
3.10.2 Test Procedure, step 2 note is amended to add the word “excessive” before collected moisture.
The language will appear as follows:
<u>Note: Mulch products stored exposed to the elements may become saturated with moisture. Excessive moisture adds weight to mulch particles and distorts the volume test results. Test samples with flowing or excessive collected moisture in the package shall be excluded from the test procedure.</u>
Committee recommendation to the region:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes this item is fully developed with the incorporation of the recommended editorial change.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)

Regional recommendation to NCWM for item status:

- ☒ Voting Item on the NCWM Agenda
☐ Information Item on the NCWM Agenda
☐ Withdraw the Item from the NCWM Agenda (*In the case of new items, do not forward to NCWM*)
☐ Developing Item on the NCWM Agenda (*To be developed by source*)
☐ Unable to consider at this time (*Provide explanation in the "Additional Comments" section below*)

Regional Report to NCWM:

Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. **This will replace any previous reports from your region on this item.**

The committee believes this item is fully developed with the incorporation of the recommended editorial change.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 6 Section 2.4. Borax Audit Test**Source:**

NIST Office of Weights and Measures (2016)

Purpose:

Provide clarification for existing steps for the Borax Test Procedure.

Item under Consideration:

Amend NIST Handbook 133 as follows:

2.4. Borax Audit Test

This audit test is only used if the sample fails a net weight test. This method is used to identify possible short-filling by weight at point-of-pack for Borax. Since the density of Borax can vary at point-of-pack, further investigation is required to determine whether such short-filling has occurred. This procedure applies to packages of powdered or granular products consisting predominantly (more than 50 %) of Borax. Use the following procedure to determine if packages of Borax are labeled correctly. ~~Such commodities are~~ **Borax shall be** labeled by weight. Borax can lose more than 23 % of its weight due to moisture loss. However, it does not lose volume upon moisture loss, and this property makes possible a method of volume testing based on a density determination in the event that the net weight of the ~~product~~ Borax does not meet the average or individual package requirements. ~~This method may be used for audit testing to identify possible short-filling by weight at point-of-pack. Since the density of these commodities can vary at point-of-pack, further investigation is required to determine whether such short-filling has occurred.~~

2.4.1. Test Equipment

- ~~Metal density cup~~ **Dry measure** with a capacity of 550.6 mL (1 dry pt), 1101 mL (dry quart), 1000 mL (liter)
- Metal ~~density~~ funnel with slide-gate and stand
- ~~Scale or balance having a scale division not larger than 1 g or (0.002 lb),~~ **A scale that meets the requirements in Chapter 2, Section 2.2. "Measurement Standards and Test Equipment."**
- ~~Rigid~~ Straightedge or ruler
- **Safety glasses**
- **Gloves**

- Dust mask
- Level (at least 15 cm [6 in] in length)
- Pan or drop cloth/polyethylene sheeting ~~suitable for holding~~ catching overflow of ~~density cup dry~~ measure
- Borax Audit Worksheet (Appendix C)

2.4.2. Test Procedure

- ~~1. Follow Section 2.3.1. through 2.3.7. to define the inspection lot, use a “Category A” sampling plan in the inspection; select a random sample, determine tare and package errors and evaluate results. Use this procedure only if the sample fails to meet the package requirements in Section 2.3.7. “Evaluate for Compliance.”~~

1. Select the package with the lightest gross weight. Fill out Boxes 1 through 3 of the Borax Audit Worksheet.

~~2. If the lot does not comply by weight with the sampling plan requirements (either the average or individual package requirements), select the lightest package, and record the net weight of this package. Record the volume declared on the package (box 4). This volume declaration must not appear on the principal display panel. Instead, it shall appear on the back, side, or bottom of the package and may read as:~~

Volume mL per NIST Handbook 133

Note: 1 mL = 1 cm³

- ~~3. Determine the empty weight of the density cup. Determine the gross weight of the package (box 5).~~
- ~~4. Place the density cup in the pan and put the funnel on top of the density cup. Close the funnel slide-gate. Determine the tare weight of the package (box 6).~~
- ~~5. Pour sufficient commodity into the funnel so that the density cup can be filled to overflowing. Determine the net weight of the package (box 7).~~
- ~~6. Quickly remove the slide-gate from the funnel, allowing the commodity to flow into the density cup. Look up the dry measure used in the following table and record the volume (box 8).~~

<u>Dry Measure</u>	<u>Volume in milliliters</u>
<u>Dry Pint</u>	<u>550.6 mL</u>
<u>Dry Quart</u>	<u>1101 mL</u>
<u>Liter</u>	<u>1000 mL</u>

- ~~7. Carefully, without agitating the density cup, remove the funnel and level off the commodity with the ruler or straightedge. Hold the ruler or straightedge at a right angle to the rim of the cup, and carefully draw it back across the top of the density cup to leave an even surface. Weigh (in pounds) the filled density cup to determine gross weight. Subtract the empty density cup weight from the gross weight. This will give the net weight of the commodity. Determine the empty weight of the dry measure and record the value (box 9).~~
 - a) Place the dry measure in the pan or on top of drop cloth/polyethylene sheeting and verify that it is level. Place the funnel on top of the dry measure and close the funnel slide gate.
 - b) Pour an adequate amount of Borax into the funnel so that the dry measure will be filled to overflowing.
 - c) Quickly remove the slide-gate from the funnel, allowing the Borax to flow into the dry measure. To ensure that the Borax is free-flowing, repeat Steps 7(a), (b), (c) at least three times. After the final filling go to Step 7d.

- d) Carefully, without agitating the dry measure, remove the funnel and level off the Borax with the straightedge or ruler at a right angle to the rim of the cup, and carefully draw it across the top of the dry measure to leave an even surface. If the surface of the Borax is not smooth repeat Steps 7 (a), (b), (c), and (d). If the surface of the Borax is smooth proceed to Step 8.
8. Multiply the package net weight (in pounds) found for the package under test by 550.6 Determine the gross weight of the filled dry measure and Borax (box 10).
9. Divide the answer just obtained by the weight of the commodity in the density cup, determined in Step 8 above. The result is the net volume of commodity in the package in milliliters. Subtract the empty weight of the dry measure from the gross weight of the dry measure (box 10 – box 9) to obtain the net weight of the Borax (box 11).
10. Compare the net volume of the commodity in the package with the volume declared on the package. The volume declaration must not appear on the principal display panel. Instead, it will appear on the back, side of the package and may appear as:

Volume _____ mL per NIST Handbook 133

Note: $1 \text{ mL} = 1 \text{ cm}^3$ Determine the net volume of the Borax by dividing the net weight of the package (box 7) by the net weight of the Borax in the dry measure (box 11) and multiply the result by the volume of the dry measure (box 8). The result is the net volume of the Borax in the package in milliliters (box 12).

If the net volume of ~~commodity~~ Borax in the lightest package equals or exceeds the declared volume on the package, treat the lot as being in compliance based on volume and take no further action. If the net volume of Borax in the lightest package is less than the declared volume on the package, further compliance testing will be necessary. Take further steps to determine if the lot was in compliance with net weight requirements at point-of-pack or was short-filled by weight. To determine this, perform a laboratory moisture loss analysis to ascertain the weight of the original Borax ~~product~~ when it was fully hydrated; obtain additional data at the location of the packager; and/or investigate the problem with the packager of the ~~commodity~~ Borax.

Borax Audit Worksheet	
Use only IF the sample fails the net weight test. Use the lightest package in the sample.	
1. Product:	2. Lot Code :
3. Declared Net Weight on Package:	
4. Declared Volume of the Borax:	
5. Gross Weight of Package:	
6. Tare Weight of Package:	
7. Net Weight of Package:	
8. Volume of Dry Measure - look up the volume of the dry measure in milliliters used to calculate the volume and enter it below: $\text{Dry Measures: Dry Pint} = \frac{\text{Net Weight}}{\text{Net Weight per mL}} \times \text{mL}$ Dry Measures: Dry Pint = 550.6 mL; Dry Quart = 1101 mL; Liter = 1000 mL	
9. Empty Weight of Dry Measure:	
10. Gross Weight of Dry Measure + Borax:	
11. Net Weight of Borax in the Dry Measure (Box 10 - Box 9 =) :	
12. Net Volume of Borax (Box 7 ÷ Box 11) × Box 8 = :	
13. Refer to Step 10 to determine if the sample is in compliance or if further action is required.	

Background/Discussion:

NIST OWM has taught several classes for HB133 Basic and incorporated the Borax procedure as one of the hand-on training modules. Based on comments and recommendations received from the students, NIST has identified that the current test procedure needs clarification for the test equipment and steps that are in the current edition of Handbook 133. NIST is also proposing adding a Borax Audit Worksheet to HB133 – Appendix C. to assist inspectors in performing the test.

SWMA Action: New Item 6
Summary of comments considered by the regional committee (in writing or during the open hearings):
A NIST representative stated that the clarified procedure has been used in several Handbook 133 training classes and works well.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes the item is fully developed.

COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: <i>(If different than regional committee recommendation)</i>
Regional recommendation to NCWM for item status: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i> <input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the "Additional Comments" section below)</i>
Regional Report to NCWM: Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee believes the item is fully developed.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 3 **Section 3.14. Firewood – Volumetric Tet Procedures for Packaged Firewood with a Labeled Volume of 113 L [4ft³] or Less) and Stacked Firewood sold by the Cord or fractions of a Cord. (See Related New Items 2 and 4)**

Source:

NIST Office of Weights and Measures (2016)

Purpose:

Replace ambiguous test procedures with new procedures that will provide improved national uniformity in test results.

Item under Consideration:

Amend the NIST Handbook 133:

NOTE: STRIKETHROUGHS AND UNDERLINING ARE NOT USED BECAUSE THE PROCEDURES HAVE BEEN EXTENSIVELY REVISED. THIS PROPOSAL SHOULD BE READ IN ITS ENTIRETY AND CONSIDERED AS A POSSIBLE REPLACEMENT FOR THE CURRENT TEXT IN NIST HB 133.

3.14. Firewood – Volumetric Test Procedure for Packaged Firewood with a Labeled Volume of 113 L [4 ft³] or Less and Stacked Firewood sold by the Cord or fractions of a Cord.

Unless otherwise indicated, take all measurements without rearranging the wood or removing it from the package. However, if the layers of wood are crosshatched or not ranked in discrete sections in the package, remove the wood from the package, re-stack, and measure according to the procedures described in this section. For boxed firewood, it is the volume of the wood in the box that is determined not the volume of the box.

3.14.1. Test Equipment

- Linear Measurement: the maximum value of graduations on a ruler or tape shall be equal to or less than:

For testing packaged firewood: SI Units - 1 millimeter or for U.S. Customary Units – $\frac{1}{16}$ in (0.0625 in)

For testing stacked firewood: SI Units – 0.5 centimeters or for U.S. Customary Units – $\frac{1}{8}$ in (0.125 in)

Other Equipment:

Except where a long tape measure is needed for measuring stacks of wood and unless otherwise noted below, a precision tempered steel ruler should be used for linear measurements. Current calibration certificates issued by a NIST recognized or accredited laboratory should be available for all measuring devices.

- To test boxes of firewood use a straightedge and a 150 mm (6 in) tempered steel pocket ruler to measure the box headspace. A rigid 610 mm (24 in) tempered steel ruler is required to measure piece length and the dimensions of the box.
- To test bundles of firewood use a rigid 610 mm (24 in) tempered steel ruler to measure typical piece length. If the circumference based auditing method is to be conducted, a precision 610 mm (24 in) diameter (pi) tape or flexible steel tape with 1 mm ($\frac{1}{16}$ in) graduations may be used to approximate the package volume for screening and audit purposes.

For testing stacks of firewood, a precision tape or long tape measure are used. For testing bundles and bags of firewood, the following equipment and materials are used in addition to the linear measures listed above:

- Binding Straps - Straps with ratchet type closures are easily tightened to secure the wood tightly. The binding straps are used to hold wood bundles together if the bundles need to be removed from the package/wrapping material.
- Graph Paper - 279.4 mm \times 431.8 mm (11 in \times 17 in) with 0.5 centimeter or $\frac{1}{4}$ inch squares and a 300 mm (12 in) ruler. This paper is used for tracing and calculating the areas of the ends of a bundle of firewood. Prior to using any graph paper use a calibrated ruler to verify the dimensions of squares at several random points across the page.
- Ruler – 300 mm (12 in) with 0.5 cm ($\frac{1}{4}$ in). This ruler is used with the graph paper to calculate the area of the bundle ends.
- *(If the strapping method is adopted to define the perimeter of a bundle this item must be added to the equipment list)* - Fiber Reinforced Packing Tape or equivalent [typical dimensions: width - 25.4 mm (1 in); thickness 152 μ m (0.006 in); length 54.8 m (60 yd)]. This tape is wrapped around each end of a bundle of firewood for use in defining the perimeter of the bundle. It is securely tightened around the wood and a line is traced along the outside of the tape. Thicker tape should not be used as it will increase the area that is outlined around the bundle unless the volume of the strap or tape (see note) is calculated and deducted from the volume of the bundle.

Note: The volume of a strap or length of tape is calculated using the formula from Section 4.5 “Polyethylene Sheeting.” That section which also provides information on the equipment and test procedure for determining thickness using deadweight dial micrometer if the thickness of the strap is unknown:

$$Volume = (Length \times Width \times Thickness)$$

3.14.2. Test Procedures

General Instructions

1. When testing packaged firewood follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; and select a random sample.

2. Measurements shall be read to the smallest graduation on the ruler or tape. Round any value that falls between two graduations up to the higher value except when making headspace depth measurements in the test procedure for boxes where a value falling between two graduations is rounded down.
3. **Samples for Length** – Use Table 1. “Minimum Number of Pieces to be Measured for Length” to determine the minimum number of pieces to measure to determine the average length of the firewood pieces in a package or stack.

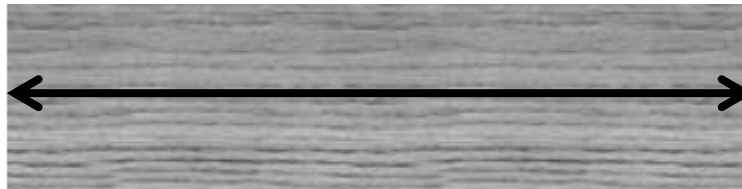
Table 1. Minimum Number of Pieces to be Measured for Length		
	Volume	Minimum Number of Pieces to be Measured for Length*
1.	Packaged Firewood 453 L (16 cu ft) [$\frac{1}{8}$ Cord] or less	
a.	For packages with 12 pieces or less	All
b.	For packages with 13 to 50 pieces	At least 12 pieces
c.	For packages with more than 50 pieces	At least 24 pieces
2.	Stacked Wood	At least 12 pieces for each $\frac{1}{2}$ Cord or fraction thereof
<p>*Note: While the packages of firewood to be included in the sample must be selected using the random sampling techniques described in NIST HB133, Section 2.3.4. “Random Sample Selection” those techniques are not used in selecting the individual pieces for measurement of length. Since the packages were selected at random the assumption is made that the length of any piece selected for measuring is generally representative of the other pieces that the packer cut or selected for inclusion in the package under inspection. When selecting pieces of wood for measurement, take them from different locations in the package or stack so they are representative of the total amount of wood under test.</p>		

4. **Measuring Procedures for Length** – Use the instructions and graphics in Table 2. “Determining Piece Length” when measuring the length of pieces to determine the average length of a piece of firewood based on its shape in a package or stack. If a piece of wood does not appear to fall within the examples shown, measure it as if it were an irregular shape and take three or more measurements and average them.

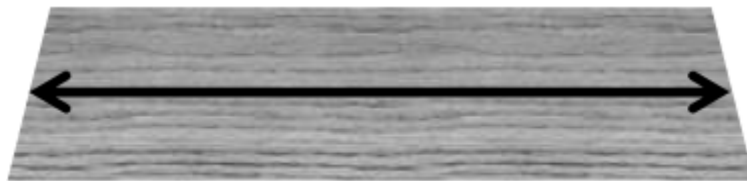
Table 2. Determining Piece Length**a) Uniform Shapes**

Errors in the length measurement can result in significant volume errors especially with the small quantities typical of packaged wood. When the pieces are generally cut in a uniform manner a single measurement along the center line of the longitudinal axis is used to determine piece length. Take the measurement along a straight line between two points over solid wood.

(i). Most wood pieces are cut perpendicular to their longitudinal axis so one measurement taken from the face of one end to the face of the other end will provide an accurate length determination.



(ii). On pieces of wood with “reverse bias” and “bias” end cuts estimate where the center-line of the piece is and then measure to these points as shown below. The intent of this measurement is to determine an “average” length that is assumed to fall along the center line of the piece. The top piece is an example of a “reverse” bias cut.



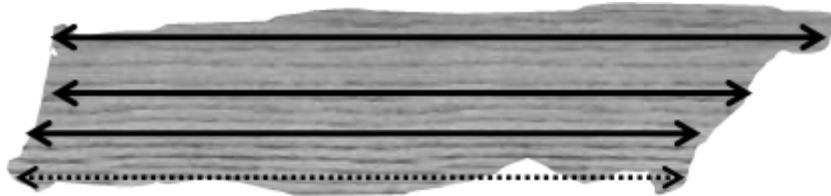
The bottom piece is an example of a bias cut



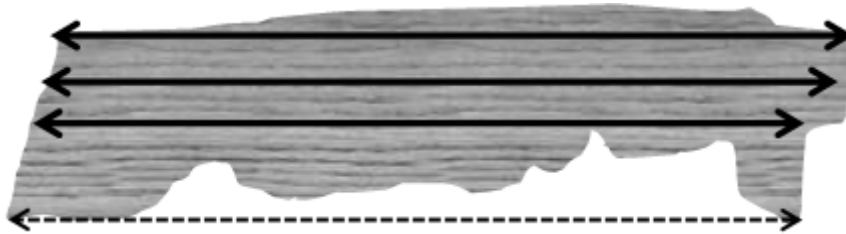
Table 2. (continued) Determining Piece Length**b. Irregular Shapes**

When the pieces have irregular shapes, cuts or shattered ends it is necessary to take at least three measurements and average the results to obtain the length of the piece. Take the measurements along a straight line between two points which cover solid wood that appear to be the shortest and longest dimensions and a third measurement at or near the center-line of the piece.

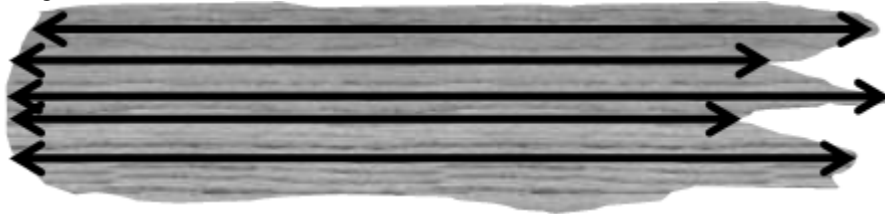
(iii) This piece has a bias cut end on the left and an irregular end on the right. The measurements are taken at the longest and shortest points where the line crosses over solid wood. The lowest measurement (dotted line over the air space) is not used because it does not cross wood. Only the three upper measurements are used to calculate the average length for this piece unless additional measurements across solid wood are taken.



(iv). This is a piece with a bias cut on the left and irregular end on the right. Note how the measurements are taken at the longest and shortest points where the line crosses over solid wood. The lowest measurement (the dotted line) would not be used because it does not crossover wood.



(v). This piece of wood has a “shattered end.” Shattering occurs when wood is stressed beyond its breaking point and the end is not trimmed. The inspector will take additional measurements to account at the shortest point of the voids and longest points at the extensions. In this example, five measurements were taken and averaged to account for the voids and extensions.



1. Boxed Firewood

Note: A packer may place wrapped bundles of firewood in boxes for ease of handling as well as for display on retail store shelves. When a box contains a bundle of wrapped firewood the volume of the bundle is verified using the test procedure in c. for bundles and bags.

1. Follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; and select a random sample.
2. Open the box to determine the average height of the stack of wood.
3. Measure the internal height of the box.

Figure 1 – Measuring Inside Height of Box



- Take at least five measurements spaced at intervals along each end and center of the wood stack (record as “d₁, d₂, . .etc. Take at least 15 measurements). [See Figure 1. Measuring Inside Height of Box for an illustration as to where the measurements may be taken.] Measure from the bottom of a straightedge placed across the top of the box to the highest point on the wood (round the measurements down to the nearest 0.5 cm [¹/₈ in] or less). Calculate the average height of the stack by averaging these measurements and subtracting the result from the internal height of the box using the following formula:

$$\begin{aligned} \text{Average Height of Wood Stack} = \\ (\text{Internal Height of Box}) - (\text{Sum of Depth Measurements} \div \text{Number of Measurements}) \end{aligned}$$

Figure 2. Top View of Box – Measure at cross bars.

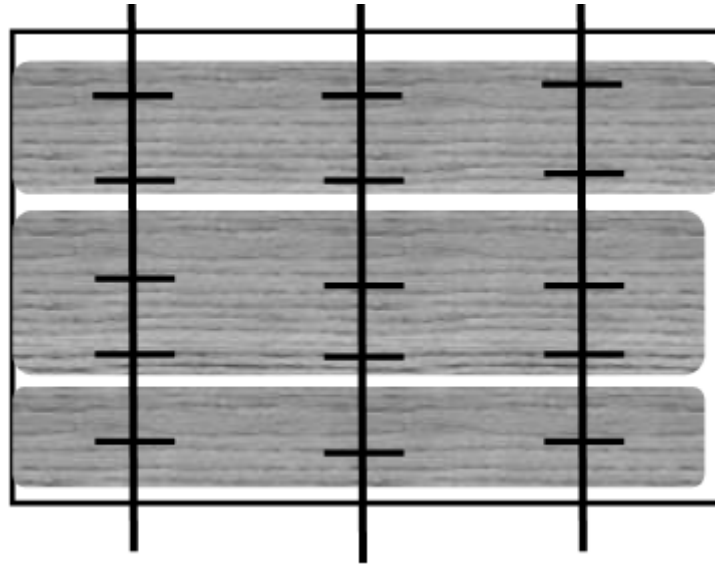
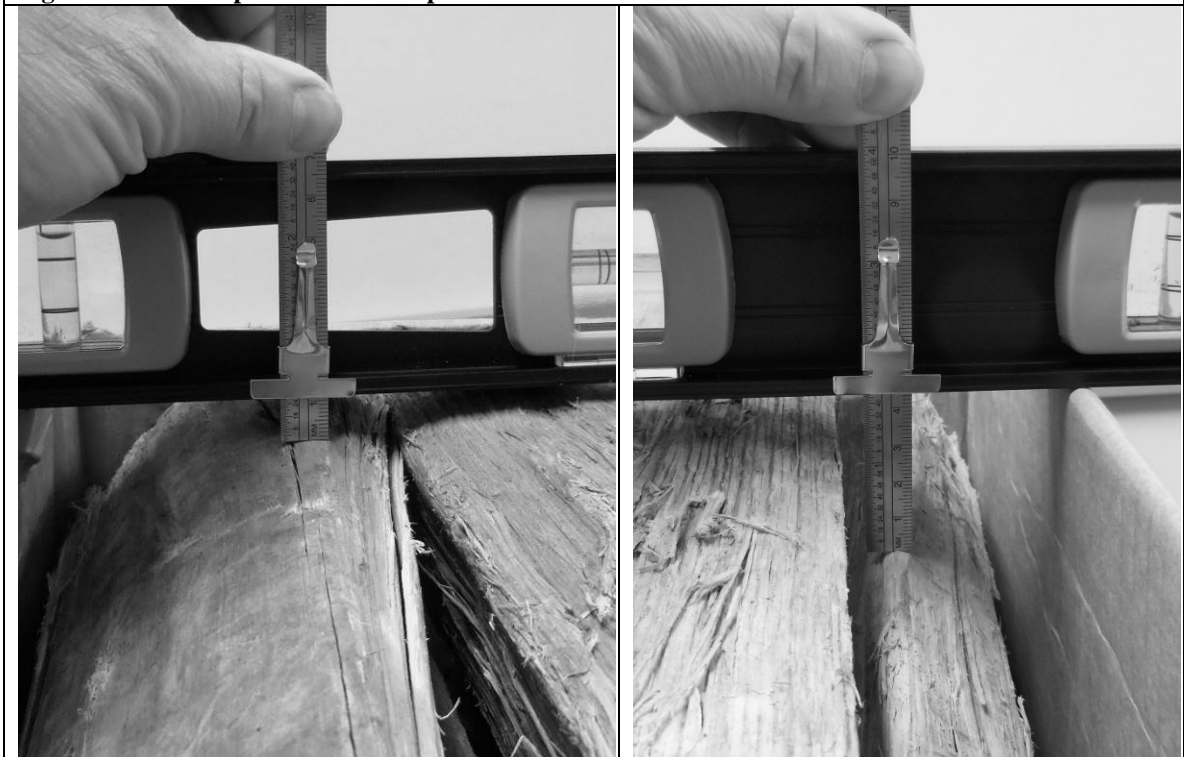


Figure 2.a. – Examples of the Headspace Measurement



4. Width of Wood Stack - Open the box and measure the width of the wood stack. Take at least five measurements at intervals spaced along the length of the stack. Average these values to obtain an Average Width of Wood Stack.

$$\text{Average Width of Wood Stack} = (W_1 + W_2 + W_3 + W_4 + W_5) \div 5$$

Figure 3. Top View of Box – Measure at crosslines.

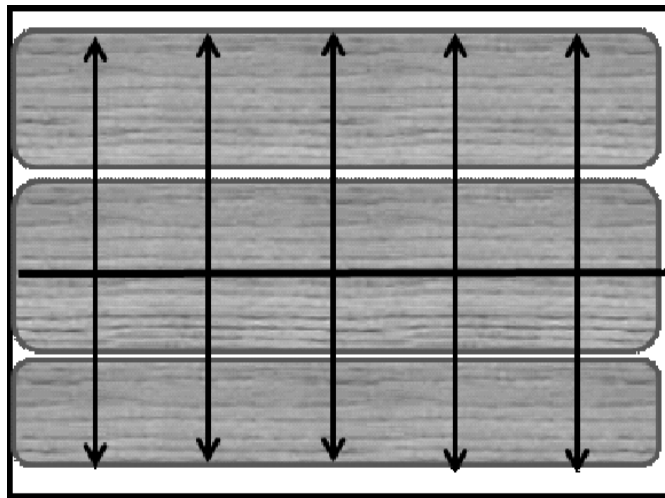


Figure 3.a. – Measuring the Width of the Firewood in a Box



5. Individual Piece Length - Remove the wood from the package and measure the length of each piece of wood (see Table 1. “Minimum Number of Pieces to be Measured for Length.” If the piece of wood is uniform in shape take at least 1 point-to-point measurement along the center line of the longitudinal axis (see Table 2. “Determining Piece Length – (a) Uniform Shapes” for examples) and record the value.

If the wood is irregularly shaped (see Table 2. “Determining Piece Length – (b) Irregular Shapes” for examples) take at least three measurements along a straight line between two points crossing solid wood

that appear to be the shortest and longest dimensions, and a 3rd at or near the center-line of the piece. Calculate the average of the measurements to obtain the Average Individual Piece Length and record the length of the piece.

To determine Average Individual Piece Length (AIPL) of irregularly shaped pieces:

$$AIPL = (L_1 + L_2 + L_3) \div 3$$

After all pieces are measured, total the lengths and divide that total by the number of samples to obtain the Average Piece Length for the package.

To determine Average Piece Length (APL) for the package:

$$APL = (L_1 + L_2 + L_3 + \dots L_n) \div (\text{Number of Pieces in Sample})$$

6. Use the average values for height, width, and length to calculate the volume of wood in the box.

$$\text{Volume in liters} = (\text{height in mm} \times \text{width in mm} \times \text{length in mm}) \div 1,000,000$$

$$\text{Volume in cubic feet} = (\text{height in inches} \times \text{width in inches} \times \text{length in inches}) \div 1728$$

7. For boxes of wood that are packed with the wood ranked in two discrete sections perpendicular to each other, calculate the volume of wood in the box as follows: (1) determine the average height, width, and length as in 1, 2 and 3 above for each discrete section, compute total volume, and (2) total the calculated volumes of the two sections. Take the width measurement for Volume₂ (V₂) from the inside edge of the box adjacent to V₂ to the plane separating VR₁ and V₂. Compute total volume by adding Volume 1 (V₁) and V₂ according to the following formula.

$$\text{Total Volume} = V_1 + V_2$$

Note: 1 Cubic Foot = 1728 Cubic Inches

b. Stacked Firewood

Bulk deliveries of firewood are typically required by law or regulation to be on the basis of Cord measurement. The "Cord" is defined as the amount of wood contained in a space of 128 cubic feet when the wood is ranked and well stowed. The standard dimensions for a Cord of wood are 4 ft × 4 ft × 8 ft but wood may be stacked and measured any configuration. See Figure 4. for an illustration of how a Cord may be stacked.

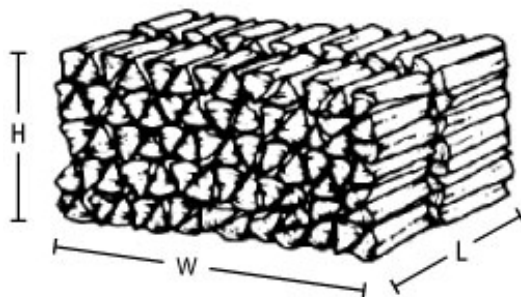


Figure 4. A Cord - 4 ft (Height) × 4 ft (Width) × 8 ft (Length)

- i. Wood delivered to a consumer: if a delivery ticket or sales receipt is available (these are often required by state regulation) review the delivery ticket or sales receipt and determine the quantity delivered. Identify the wood to be measured and verify that the wood delivered was not mixed with wood that

was already present at the location. Also, determine if the delivery was partial or complete (i.e., no additional deliveries are expected) and if any of the delivered wood has been used.

- ii. If necessary stack the firewood in a ranked and well-stowed geometrical shape that facilitates volume calculations (i.e., rectangular). Any voids that will accommodate a piece of wood in the stack shall be deducted from the measured volume.

Note: The length measurements of the individual pieces may be made during the stacking process.

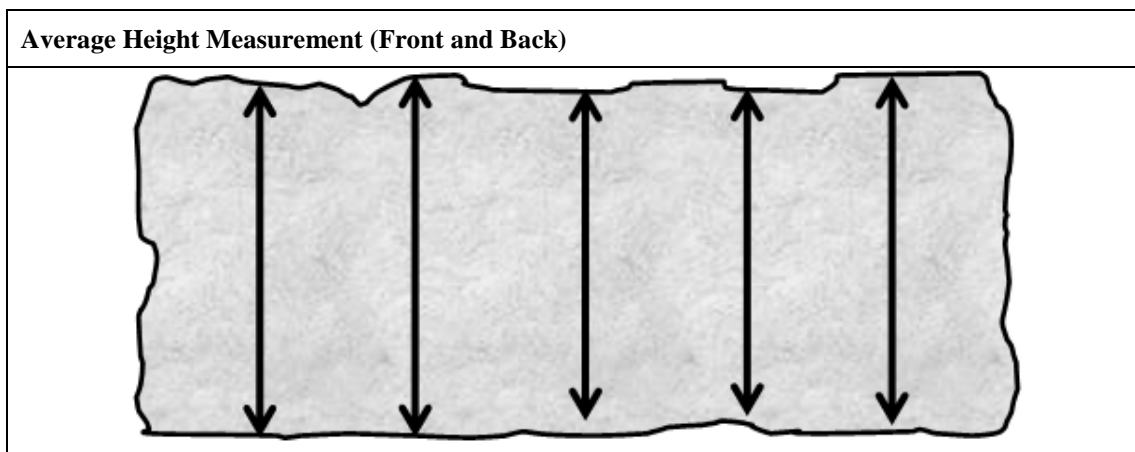
- iii. Determine the average measurements of the stack: the number of measurements for each dimension given below is the minimum that should be taken.

1. Height of Stack: A height measurement is the vertical distance between the top edge of a piece of wood in the top row and the bottom edge of a piece of wood on the bottom row. Start at one end of the front of the stack; measure the height of the stack at 5 equally spaced intervals (e.g., approximately 18 to 24 in) along the length of stack. If the length of the stack is over 10 ft take additional height measurements at equally spaced intervals along its length. If the height of the stack varies significantly (e.g., the pieces are stacked in peaks along the length of the stack) take additional height measurements. Calculate and record the average height for the front of the stack. Repeat the same height measurement procedure along the back of the stack and then calculate and record the average height for the back of the stack. Calculate the average height of the stack by averaging the two results. If the wood to be measured is stacked on a slope, take the height measurements at right-angles to the slope.

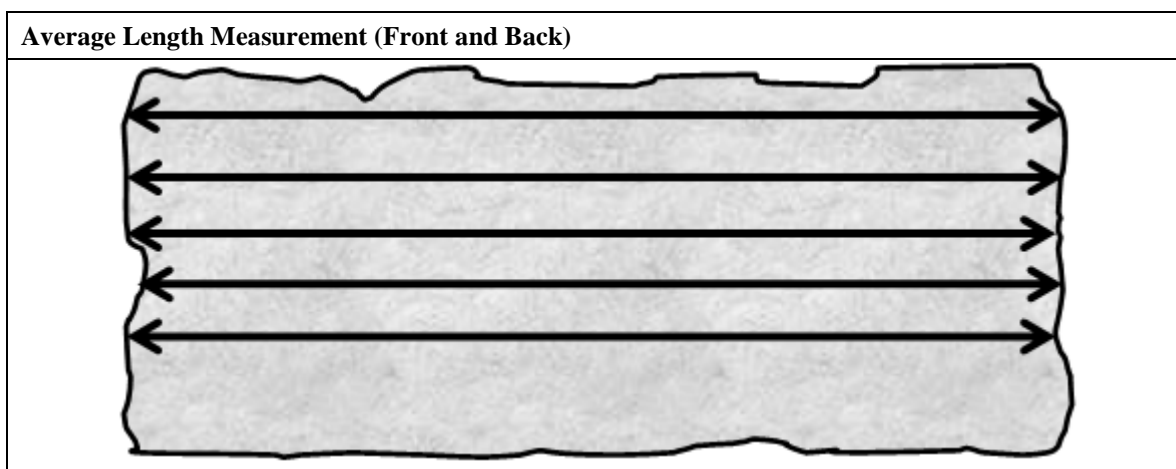
$$\text{Average Height}_{\text{Front}} = (h_1 + h_2 + h_3 + h_4 + h_5) \div 5$$

$$\text{Average Height}_{\text{Back}} = (h_1 + h_2 + h_3 + h_4 + h_5) \div 5$$

$$\text{Average Height of Stack} = \text{Average Height}_{\text{Front}} + \text{Average Height}_{\text{Back}} \div 2$$



2. Length of Stack: A length measurement is the horizontal distance between the left edge of a piece of wood on the left side of the stack and the right edge of a piece of wood on the opposite side of the stack. Start at either side of the stack; Measure the length of the stack in five equal intervals. Calculate and record the average length. If the length of the stack varies significantly (e.g., the ends of the stack bulge out along the height of the stack) take additional measurements.



Calculate and record the average length for the front of the stack. Repeat the length measurement procedure along the back of the stack and then calculate and record the average length for the stack.

$$\text{Average Stack Length}_{\text{Front}} = (l_1 + l_2 + l_3 + l_4 + l_5) \div 5$$

$$\text{Average Stack Length}_{\text{Back}} = (l_1 + l_2 + l_3 + l_4 + l_5) \div 5$$

$$\text{Average Stack Length} = (\text{Average Length}_{\text{Front}} + \text{Average Length}_{\text{Back}}) \div 2$$

3. Stack Width is Equal to the Average Length of Pieces that Make up the Width of the Stack – Refer to Table 1. “Minimum Number of Pieces to be Measured for Length” to determine how many pieces are to be measured. This dimension is calculated by averaging the length of individual pieces of wood in the stack. The wood can be stacked in a single or multiple rows. If the wood is stacked in several rows deep select a representative random sample from each row. If the wood needs to be stacked, measure the pieces prior to stacking. If the wood is already stacked, select the pieces at random by moving up and down and across the stack. If it is necessary to remove the wood from a stack to measure the individual piece lengths, always complete the height and length measurements before disturbing the stacked wood.

- i. **Individual Piece Length** - Table 1. “Minimum Number of Pieces to be Measured for Length” requires that at least 12 pieces of wood be measured for every ½ Cord estimated to be in the stack.
 - If the wood is uniform in shape take at least 1 point-to-point measurement along the center line of the longitudinal axis (see Table 2. “Determining Piece Length – (a) Uniform Shape” for examples) and record the value.
 - If the wood is irregularly shaped (see Table 2. “Determining Piece Length – (b) Irregular Shape” for examples) take at least three measurements along a straight line between two points crossing solid wood that appear to be the shortest and longest dimensions, and a 3rd at or near the center-line of the piece. Calculate the average of the measurements to determine Average Individual Piece Length (AIPL) of irregularly shaped pieces:

$$AIPL = (L_1 + L_2 + L_3) \div 3$$

After all pieces are measured total the lengths and divide the total by the number of samples to obtain the Average Piece Length for the stack. To determine Average Piece Length (APL) for the package:

$$APL = (L_1 + L_2 + L_3 + \dots L_n) \div (\text{Number of Pieces in Sample})$$

4. Calculate Volume:

$$\text{Volume in liters} = (\text{Avg. Height [cm]} \times \text{Avg. Width [cm]} \times \text{Average Piece Length [cm]}) \div 1000$$

$$\text{Volume in cubic feet} = (\text{Avg. Height [in]} \times \text{Avg. Width [in]} \times \text{Average Piece Length [in]}) \div 1728$$

5. Supplemental Information on the Measurement of Stacked Wood

1. Volume of a Triangular Stack of Wood

Figure 5. Triangular Stack



To calculate the volume of a triangular stack take at least 2 measurements (one each side) of the height and length, and 5 measurements of the width of the stack and average each result. Use this formula to calculate the volume.

$$\text{Volume of Triangular Stack} = (\text{Avg. Height} \times \text{Avg. Length of Base} \times \text{Avg. Width}) \div 2$$

The volume of the triangular stack may be added to the volume of other stacks.

c. Bundles and Bags

Figure 6. Firewood Bundle and Bag



1. Follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; and select a random sample.

Test Note: To test a bag of firewood remove the wood from the bag and form a compact bundle and strap it as shown in Figure 7 and follow the procedures for measuring a bundle.

2. Average Area of Bundle Ends:

- a. Place a cargo strap around each end of the bundle (or bag of wood) to prevent movement of the pieces during test. Place the straps approximately 10 cm (4 in) from the ends (See Figure 7) and tighten them securely.

Figure 7. Bundle with Straps placed 10 cm (4 in)



NOTICE: NCWM must choose one of the following approaches for use in defining the perimeter of a bundle for area determinations.

Approach 1. Tape Defines the Perimeter

Notice: Do not use shrink wrap or packaging to define the perimeter because it can result in inaccurate measurements. If necessary trim the shrink wrap back from the ends to allow for the application of the tape which will be used to define the perimeter.

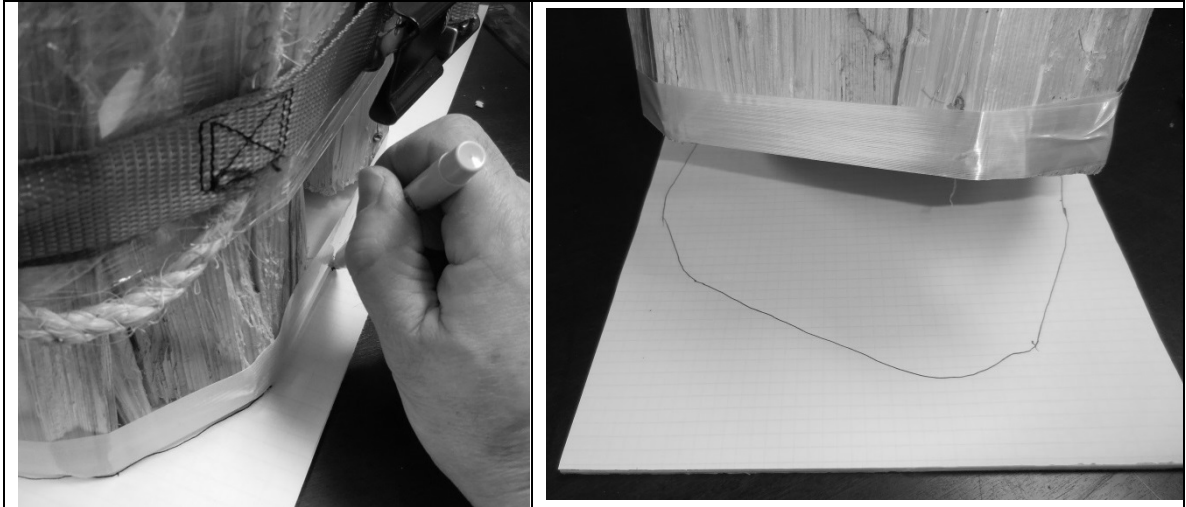
- b. Affix packing tape (i.e., fiber reinforced) or other suitable strap around the perimeter of bundle at the extreme of each end (making sure that it is tautly stretched over all air spaces and that there is minimal deflection.) so that the tape or straps define the perimeters.

Figure 8. Bundles with Fiber Reinforced Packing Tape around the Perimeter of the Ends



- c. Set one end of the bundle or bag on graph paper large enough to cover the end completely. Draw a line around the outside of the perimeter of the tape on the graph paper using a sharp point marking pen (see Figure 9).

Figure 9. Tracing Perimeter of bundle outside the Tape

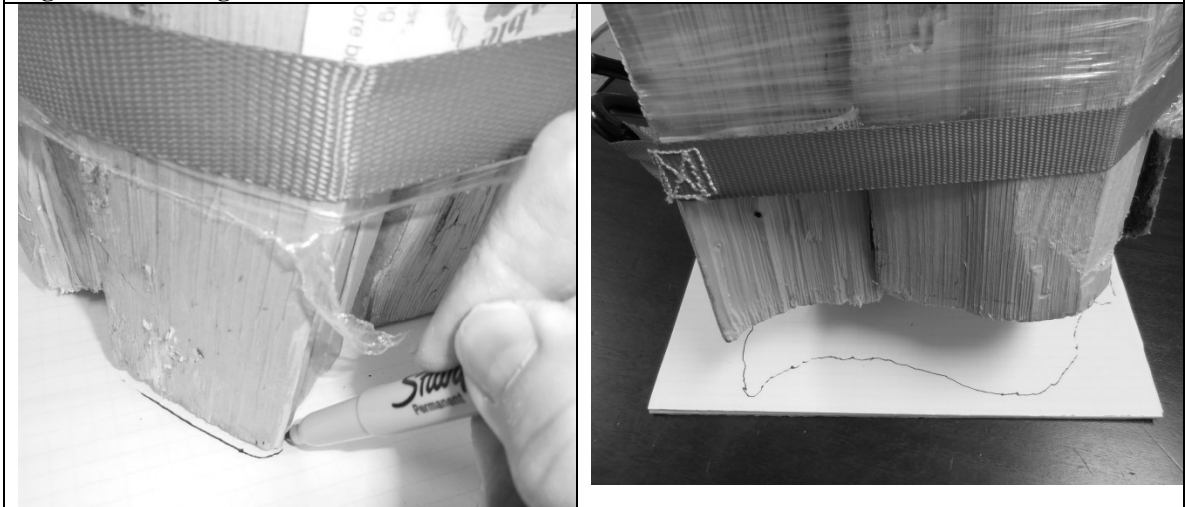


Approach 2. Wood Defines the Perimeter

Notice: Do not use shrink wrap or packaging to define the perimeter because it can result in inaccurate measurements. If necessary trim the shrink wrap back from the ends to allow for the bundle to sit flat on the graph paper.

- b. Set one end of the bundle or bag on graph paper large enough to cover the end completely. Draw a line around the outside of the wood perimeter on the graph paper using a sharp point marking pen (see Figure 10).

Figure 10. Tracing Perimeter of the Wood



- c. Set one end of the bundle or bag on graph paper large enough to cover the end completely. Draw a line around the outside of the wood perimeter on the graph paper using a sharp point marking pen.

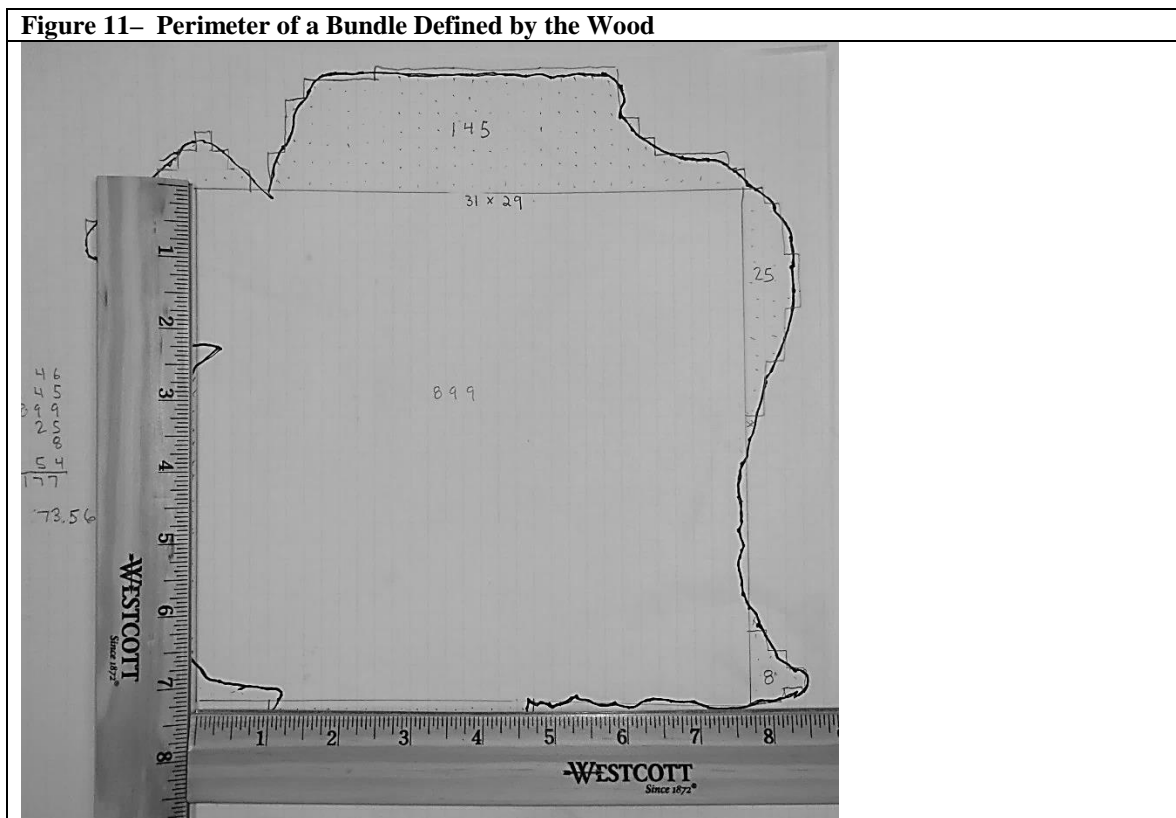
For either proposal, follow the remaining steps to determine compliance.

- d. Count the number of square centimeters or square inches that are enclosed within the perimeter line. Estimate portions of square centimeters or square inches not completely within the perimeter line to the nearest one-quarter square inch. Repeat this process on the opposite end of the bundle or bag.

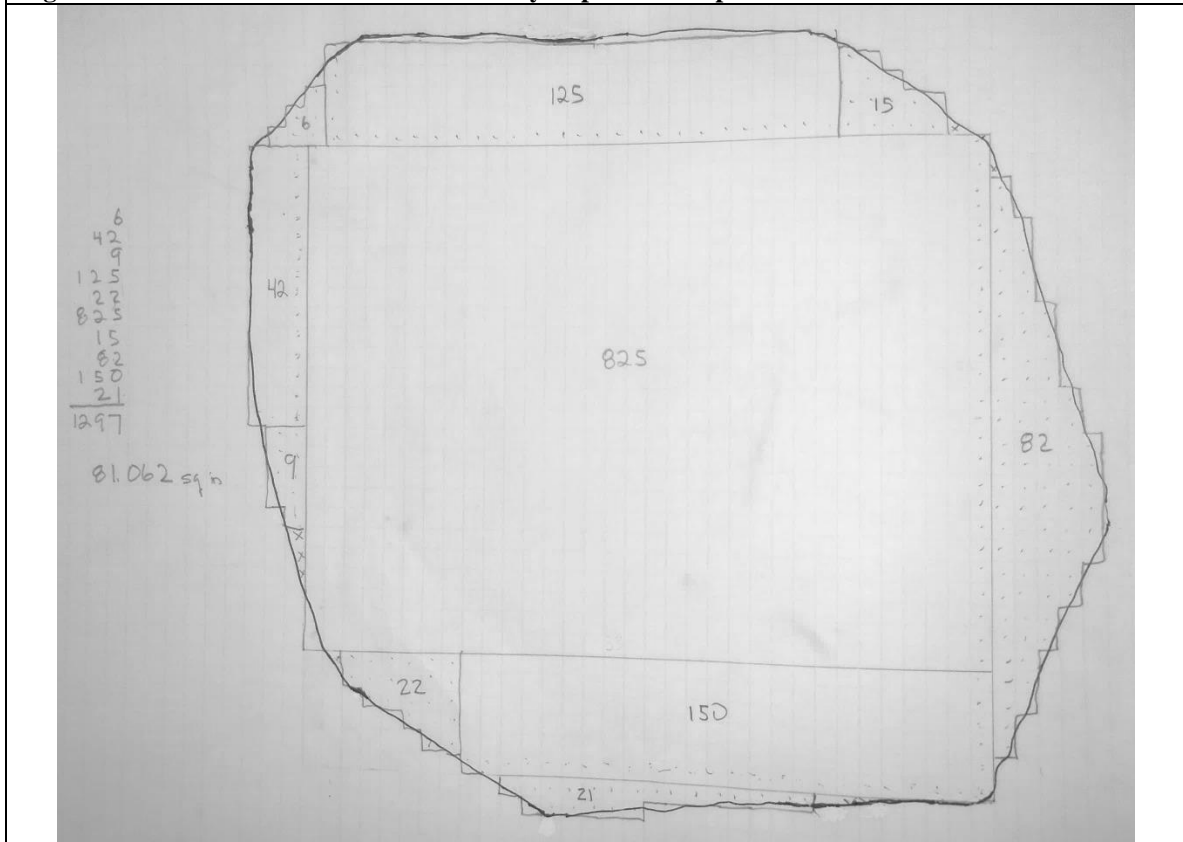
Examples

1. Using $\frac{1}{4}$ square inch graph paper and a ruler with $\frac{1}{4}$ inch graduations, large blocks of the area within the perimeter are quickly measured. This is done by using the ruler to determine the length and then width of the area which are each multiplied by 0.25 ($\frac{1}{4}$ in) to obtain the number of blocks in that dimension. These two values are multiplied to obtain the total number of blocks enclosed in the area. The areas in the partially covered blocks are rounded up or down to the nearest $\frac{1}{4}$ inch by enclosing the whole square and placing an x in the partial spaces which are included in the blocks where the area has been rounded up. One reason for squaring the blocks is to simplify the counting.

Use a ruler to count blocks: the rulers in Figure 11 indicate the dimensions of the square are $7\frac{1}{4} \times 7\frac{3}{4}$ in. To obtain the number of blocks divide 7.25 by 0.25 to obtain the number of blocks along the left hand line ($7.25 \div 0.25 = 29$). The bottom line measures $7\frac{3}{4}$ in so $7.75 \div 0.25 = 31$. Multiply the two values to obtain the total number of squares within the area which is: $29 \times 31 = 899$. To obtain square inches divide 899 by 16 (the number of $\frac{1}{4}$ inch blocks in a square inch) or $899 \div 16 =$ for area of 56.19 in^2 for this area of the bundle.



Continue to divide the area into blocks to make counting easier and then count the blocks in the remaining areas and sum these values to obtain the total. See the example in Figure 11. The total number of blocks was calculated by adding: $46 + 145 + 899 + 25 + 8 + 54 = 1177$ squares $\div 16 = 73.56$ square inches for this end of the bundle.

Figure 12 —Perimeter of a Bundle Defined by Tape or a Strap

2. Figure 12 provides another example of how determining the area can be simplified by “blocking” the areas out and calculating the number of blocks. For the example in Figure 12 the total number of blocks was calculated by adding: $6 + 42 + 9 + 125 + 22 + 825 + 15 + 82 + 150 + 21 = 1297$ squares $\div 16 = 81.06$ square inches for this end of the bundle.

Calculate the Average Area: $\text{Average Area} = (\text{Area}_1 + \text{Area}_2) \div 2$

e. Average length of the pieces of wood: Individual Piece Length - Remove the wood from the package and measure the length of each piece of wood (see Table 1. “Minimum Number of Pieces to be Measured for Length” for the number of pieces to be measured.) If the piece of wood is uniform in shape take at least 1 point-to-point measurement along the center line of the longitudinal axis (see Table 2. Determining Piece Length - (a) Uniform Shapes for examples) and record the value.

If the wood is irregularly shaped (see Table 2. Determining Piece Length - (b) Irregular Shapes for examples) take at least three measurements along a straight line between two points crossing solid wood that appear to be the shortest and longest dimensions, and a 3rd at or near the center-line of the piece. Calculate the average of the measurements to obtain the Average Individual Piece Length and record the length of the piece.

To determine Average Individual Piece Length (AIPL) of irregularly shaped pieces:

$$AIPL = (L_1 + L_2 + L_3) \div 3$$

Note: If length measurements are made in millimeters divide the total by 10 to obtain centimeters.

After all pieces are measured, total the lengths and divide that total by the number of samples to obtain the Average Piece Length for the package.

To determine Average Piece Length (APL) for the package:

$$APL = (L_1 + L_2 + L_3 + \dots L_n) \div (\text{Number of Pieces in Sample})$$

5. Use the average values for height, width, and length to calculate the volume of wood in the bundle or bag.

f. Calculate Volume:

$$\text{Volume in liters} = (\text{Average Area [cm}^2\text{]} \times \text{Average Length [cm]}) \div 1000$$

$$\text{Volume in cubic feet} = (\text{Average Area [in}^2\text{]} \times \text{Average Length [in]}) \div 1728$$

Note: 1 Cubic Foot = 1728 Cubic Inches

3.14.3. Evaluation of Results

Follow Section 2.3.7. "Evaluate for Compliance" to determine lot conformance.

Note: Specified in Appendix A, Table 2-10. "Exceptions to the Maximum Allowable Variations for Textiles, Polyethylene Sheeting and Film, Mulch and Soil Labeled by Volume, Packaged Firewood and Stove Wood labeled by Volume, and Packages Labeled by Count with 50 Items or Fewer."

Table 2-10. Exceptions to the Maximum Allowable Variations for Textiles, Polyethylene Sheeting and Film, Mulch and Soil Labeled by Volume, Packaged Firewood and Stove Wood Labeled by Volume, and Packages Labeled by Count with 50 Items or Fewer, and Specific Agricultural Seeds Labeled by Count.	
	Maximum Allowable Variations (MAVs)
Packaged Firewood and Stove Wood Labeled by Volume	<u>25 % of labeled quantity</u> <u>Note: Use Table 2-5 "Maximum Allowable Variations for Packages Labeled by Weight" for packaged artificial and compressed fireplace logs and stove wood pellets and chips labeled by weight.</u>

Field Audit Procedure

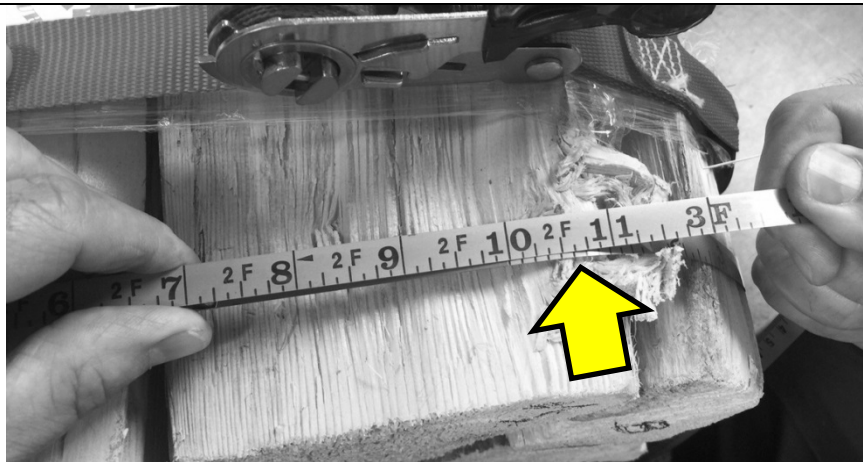
A circumference method can be used for quickly identifying potentially short measure bundles. The procedure is based on measuring the circumference of the package ends and calculating the areas without using graph paper. While the circumference method is a quick way to determine the areas, it is also less accurate than the graph paper method so it should not be used for official inspections. If this method is adopted, data will be collected for use in developing additional guidance on the use of this procedure for auditing purposes. The data collected will, among other factors, compare test results obtained using the reference procedure versus this auditing method.

Circumference Test Method

1. After the bundle or bag is secured, use a flexible measuring tape to measure the circumference around each end of the bundle or bag of firewood. Using one movement extend the measuring tape around the end of the bundle or bag to obtain its circumference. The tape must be pulled tight. If the wood at the ends of a bag or

bundle is not accessible due to plastic wrapping, then wrapping should be moved away from the ends so the measuring tape can be placed tightly around the bundle so circumference measurements can be taken.

Figure 13. Strapping the End of a Bundle



At the Point of the Arrow the Circumference of the Bundle is 2 ft 10 in (34 in)

Note: The tape used has a blank end so the “0” line is visible immediately under the 10 in mark.

2. Calculate the Average Circumference:

$$\text{Average Circumference} = (\text{circumference}_1 + \text{circumference}_2) \div 2$$

For example: If Circumference_1 is 34 in and Circumference_2 is 33.75 in then:

$$\text{Average Circumference: } 34 + 33.75 \div 2 = 33.875 \text{ in}$$

3. Calculate the radius

$$\text{radius} = \text{Average Circumference} \div 2\pi$$

Where: $\pi = 3.1415$

For example: $radius = 33.875 \div (2 \times \pi \text{ or } 6.283) = 5.39 \text{ in}$

4. Calculate the *Average Area*

$$Average Area = \pi r^2$$

For example: $Average Area = 3.1415 \times 5.39^2 \text{ (or } 29.06) = 91.3 \text{ in}^2$

5. Calculate the Average Length of the Pieces:

Average length of the pieces of wood - Measure the length of several pieces of wood in the bundle or bag. Measurements are to be taken from center to center at the end of each piece.

Then calculate the average:

$$Average length = \text{sum of the length of all pieces} \div \text{number of pieces}$$

6. Calculate Volume:

$$Volume \text{ in liters} = (Average \text{ area [cm}^2\text{]} \times Average \text{ Length [cm]}) \div 1000$$

$$Volume \text{ in cubic feet} = (Average \text{ Area [in}^2\text{]} \times Average \text{ Length [in]}) \div 1728$$

For Example: assume the Average Length of the Pieces is 16 in and Average Area is 91.3 in²

$$Bundle Volume = 91.3 \times 16 = 1460 \text{ in}^3 \text{ or } 0.84 \text{ ft}^3$$

If results indicate that the sample fails conduct further testing using the reference test procedure for bundles and bags. Do not take any legal action based solely on this audit procedure.

Background/Discussion:

Recent inspections of packaged firewood by weights and measures officials in different states have uncovered a lack of uniformity in the procedures used to test bundles, boxes and bags of packaged firewood. Section 3.14. Of NIST Handbook 133 is written ambiguously such that if the same bundle of firewood were tested by different states, the test results would be substantially different. The problems described below were uncovered through limited testing and research. However, after reviewing the test data it is apparent there is a need to clarify the procedures and improve the accuracy of the measurement procedures so that the volume of wood in bags, bundles, boxes and stacks are determined accurately and consistently. Improving the test procedures will help ensure that consumers can make value comparisons and reduce unfair competition. The current procedure for measuring the length of the pieces of wood, regardless of whether it is offered for sale in a box, bag, bundle or stack requires that only one measurement be taken on a piece of wood along its centerline. While one measurement may be adequate for uniformly cut pieces it is not suitable for use with non-uniform pieces such as those with irregular cuts. The proposal includes new procedures that allow for averaging multiple measurements to improve the accuracy of length determinations. Another concern with the current test method is that it only requires that 5 pieces with the largest girth be measured in any package or stack to determine an average length which can lead to significant differences between the average length of those pieces as compared to the average length obtained when most or all of the pieces are measured. The proposal includes a recommendation to increase the number of pieces measured to increase the accuracy of length determinations in the test procedures for bags, boxes, bundles and stacks of firewood. In addition to the proposals aimed at improving length determinations suggested changes to the test procedures for boxed firewood are proposed to clarify how to measure the amount of firewood and this includes taking additional measures to improve the accuracy of the average measurements of height and width of the stack of wood that the box contains. To improve the testing procedures for bags and bundles the proposal includes a recommendation to use grid paper with a finer resolution several photographs have been added to better illustrate how the wood is to be secured for measurement. One significant issue which the proposal asks the NCWM to resolve is how the perimeter of the bundle is to be defined for use in determining the areas of each end. This issue arose because several states interpret the current procedure as requiring that the perimeter of the bundle be defined by the wood while at least

one state interprets the procedure as requiring that the perimeter be defined by a strap or tape affixed at the extreme ends of the bundles. When the areas of the bundle ends are determined using the wood to define the perimeter the volume of a bundle is less than if the volume of the bundle is determined using a strap define the perimeters. The proposal also includes a recommendation that the NCWM amend NIST Handbook 133 to apply a Maximum Allowable Variation to packaged firewood so that the sale of unreasonably short-measure bags, bundles and boxes can be prohibited. In addition to these proposed revisions suggested improvements to the test procedures for determining the volume of stacked firewood are also included. Finally, an audit test procedure for use with bundles and bags (which uses a circumference measurement as the means to determine the volume was recommended by a major packer of firewood. Preliminary testing has shown that it could be developed for use in the field to conduct quick audits to determine if a sample should be tested using the more accurate procedures that are needed for accurate determinations.

SWMA Action: New Item 3
Summary of comments considered by the regional committee (in writing or during the open hearings):
A NIST representative gave information describing the new test procedure.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes that the NIST proposal is a more accurate method of testing the quantity of packaged firewood than the procedure proposed in New Item 4. The Hot Wood recommendation is incorporated in the NIST proposal as an audit procedure. The committee is in agreement that we recommend “approach 1 – Tape Defines the Perimeter” because it provides adequate accuracy in addition to greater efficiency for the inspector.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee believes that the NIST proposal is a more accurate method of testing the quantity of packaged firewood than the procedure proposed in New Item 4. The Hot Wood recommendation is incorporated in the NIST proposal as an audit procedure. The committee is in agreement that we recommend “approach 1 – Tape Defines the Perimeter” because it provides adequate accuracy in addition to greater efficiency for the inspector.

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 4 **Section 3.14. Firewood – Volumetric Test Procedures for Packaged Firewood with a Labeled Volume of 113 L [4ft³] or Less) and Stacked Firewood sold by the Cord or fractions of a Cord. (See Related New Items 2 and 3)**

Source:

California HotWood, Inc. (2016)

Purpose:

To provide a more uniform and concise method for measuring packaged firewood, an inherently irregular and challenging material to measure, and to clarify existing procedures.

Item under Consideration:

Amend the NIST Handbook 133:

3.14. Firewood – (Volumetric Test Procedure for Packaged Firewood with a Labeled Volume of 113 L [4 ft³] or Less)

Unless otherwise indicated, take all measurements without rearranging the wood or removing it from the package. If the layers of wood are crosshatched or not ranked in discrete sections in the package, remove the wood from the package, re-stack, and measure accordingly.

~~3.14.1. Test Equipment Linear Measure. Take all measurements in increments of 0.5 cm (³/₁₆ in) or less and round up.~~

- ~~• **Binding Straps.** Binding straps are used to hold wood bundles together if the bundles need to be removed from the package/wrapping material.~~
- ~~• **Tracing paper**~~
- ~~• **Graduated template in square centimeters or square inches**~~

Test equipment needed:

A. BOXED FIREWOOD

- 1. Straight Edge**
- 2. Linear Tape Measure**

B. CROSSHATCHED FIREWOOD

- 1. Measuring Tape**

C. BUNDLES AND BAGS OF FIREWOOD

- 1. Binding Straps – Two binding straps, 1 to 2 inches wide with connecting buckles and long enough to easily encircle the Bundle or Bag to secure the wood during testing.**
- 2. Flexible Measuring Tape**

3.14.2. Test Procedures

a. Boxed Firewood

1. Follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; and select a random sample.

Open the box and if the box contains a bundle or bag of firewood remove the bundle or bag and calculate the volume in accordance with Section C (Bundles and Bags of Firewood).

2. Open the box to determine the average height of wood within the box; measure the internal height of the box. Take three measurements (record as “d₁, d₂, . .etc.”) along each end of the stack. Measure from the bottom of a straightedge placed across the top of the box to the highest point on the two outermost top pieces of wood and the center-most top piece of wood. Round measurements down to the nearest 0.5 cm (¹/₈ in). If pieces are obviously missing from the top

layer of wood, take additional height measurements at the highest point of the uppermost pieces of wood located at the midpoints between the three measurements on each end of the stack. Calculate the average height of the stack by averaging these measurements and subtracting from the internal height of the box according to the following formula.

$$\text{Average Height of Stack} = (\text{Internal Height of Box}) - (\text{sum of measurements}) \div (\text{number of measurements})$$

3. Determine the average width of the stack of wood in the box by taking measurements at three places along the top of the stack. Measure the inside distance from one side of the box to the other on both ends and in the middle of the box. Calculate the average width.

$$\text{Average Width} = (W_1 + W_2 + W_3) \div (3)$$

4. To determine the average length of the pieces of wood, remove the wood from the box and select the five pieces with the greatest girth. Measure the length of each of the five pieces from center-to-center. Calculate the average length of the five pieces.

$$\text{Average Length} = (L_1 + L_2 + L_3 + L_4 + L_5) \div (5)$$

5. Calculate the volume of the wood within the box. Use dimensions for height, width, and length.

$$\text{Volume in liters} = (\text{height in cm} \times \text{width in cm} \times \text{length in cm}) \div (1000)$$

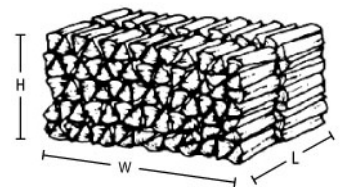
$$\text{Volume in cubic feet} = (\text{height in inches} \times \text{width in inches} \times \text{length in inches}) \div (1728)$$

6. For boxes of wood that are packed with the wood ranked in two discrete sections perpendicular to each other, calculate the volume of wood in the box as follows: (1) determine the average height, width, and length as in 1, 2 and 3 above for each discrete section, compute total volume, and (2) total the calculated volumes of the two sections. Take the width measurement for Volume 2 (V_2) from the inside edge of the box adjacent to V_2 to the plane separating V_1 and V_2 . Compute total volume by adding Volume 1 (V_1) and V_2 according to the following formula.

$$\text{Total Volume} = V_1 + V_2$$

b. Crosshatched Firewood

Figure 3-3. Stacked Firewood



1. Follow Section 2.3.1. "Define the Inspection Lot." Use a "Category A" sampling plan in the inspection; and select a random sample.
2. Stack the firewood in a ranked and well-stowed geometrical shape that facilitates volume calculations (i.e., rectangular).
3. Determine the average measurements of the stack:

Note: The number of measurements for each dimension given below is the minimum that should be taken.

- Height: Start at one end of the stack; measure the height of the stack on both sides at four equal intervals. Calculate and record the average height.
- Length: Start at the base of the stack; Measure the length of the stack in four equal intervals. Calculate and record the average length.
- Width: Select the five pieces with the greatest girth. Measure the length of the pieces, calculate and record the average piece length.

4. Calculate Volume:

$$\text{Volume in liters} = (\text{Avg. Height [cm]} \times \text{Avg. Width [cm]} \times \text{Avg. Length in [cm]}) \div 1000$$

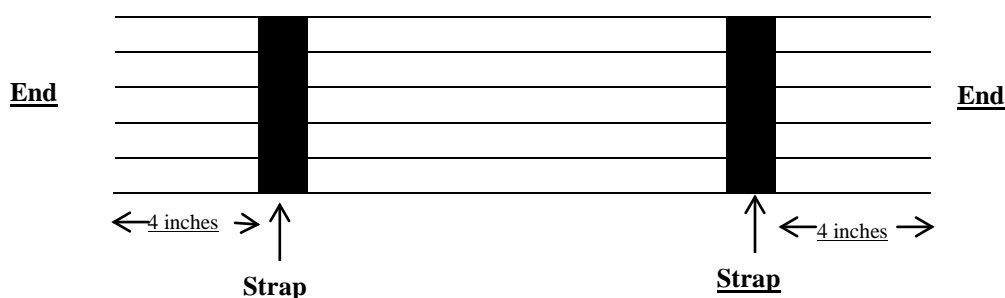
$$\text{Volume in cubic feet} = (\text{Avg. Height [in]} \times \text{Avg. Width [in]} \times \text{Avg. Length [in]}) \div 1728$$

c. Bundles and Bags of Firewood

Figure 3-4. Bundle of Firewood



- Follow Section 2.3.1. “Define the Inspection Lot.” Use a “Category A” sampling plan in the inspection; and select a random sample.
- Average area of ends: secure a strap around each end of the bundle or bag of wood to prevent movement during testing ~~and to provide a definite perimeter. Use two or more straps to secure the wood. Each strap is to be placed approximately 4 inches from each end of the Bundle or Bag. See Diagram.~~



- ~~Set one end of the bundle or bag on tracing paper large enough to cover the end completely. Draw a line around the perimeter of the bundle or bag on the tracing paper.~~
- ~~Transfer the tracing paper to a template graduated in square centimeters or square inches. Count the number of square centimeters or square inches that are enclosed within the perimeter line. Estimate portions of square centimeters or square inches not completely within the perimeter line to the nearest one-quarter square inch.~~

➤—Repeat this process on the opposite end of the bundle or bag.

➤—Calculate the Average Area:

$$\text{Average Area} = (\text{Area 1} + \text{Area 2}) \div 2$$

➤—Average length of the pieces of wood—select the five pieces with the greatest girth and measure the length of the pieces. Calculate the average length of the pieces of wood:

$$\text{Average Length} = (L_1 + L_2 + L_3 + L_4 + L_5) \div 5$$

➤—Calculate Volume:

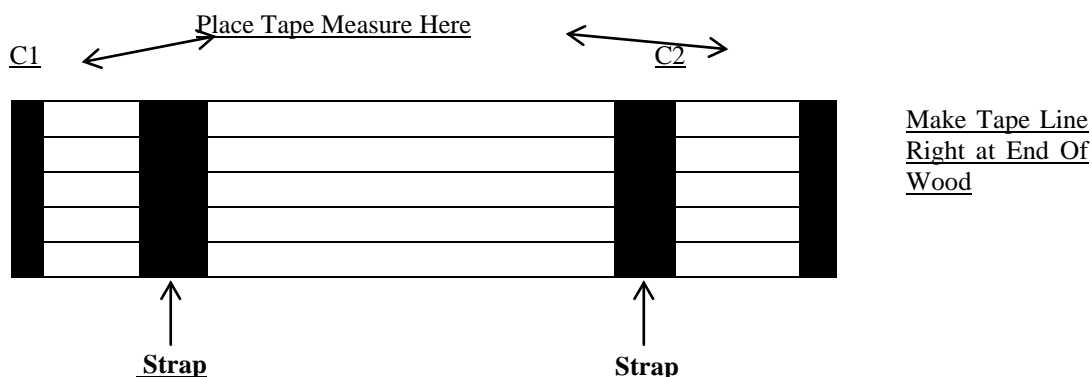
$$\text{Volume in liters} = (\text{Average Area [cm}^2\text{]} \times \text{Average Length [cm]}) \div 1000$$

$$\text{Volume in cubic feet} = (\text{Average Area [in}^2\text{]} \times \text{Average Length [in]}) \div 1728$$

3.14.3. Evaluation of Results

Follow Section 2.3.7, “Evaluate for Compliance” to determine lot conformance.

After the Bundle or Bag is secured and utilizing a flexible measuring tape, measure around each end of the bundle or bag of firewood with one movement by extending the measuring tape around the entire end of the bundle or bag in order to obtain a circumference. If the wood at the ends of a bag or bundle is not accessible due to plastic wrapping, then the flexible measuring tape is placed tightly around the outside of the plastic wrapping and circumference measurements are taken. See Diagram:



- Calculate the average Circumference

$$\text{Average Circumference} = (\text{circumference1} + \text{circumference2}) / 2$$

- Calculate the Average Area using the average circumference (from above)

$$\text{AREA} = \pi R^2$$

$$R = C / 2\pi$$

$$\pi = 3.1415$$

- Calculate the Average Length

Average length of the pieces of wood - Measure the length of each piece of wood in the bundle or bag. Measurements are to be taken from center to center at the end of each piece. Then calculate their average: Average length = sum of all pieces/ number of pieces.

- **Calculate Volume:**

$$\text{Volume in liters} = (\text{Average area [cm}^2\text{]} \times \text{Average Length [cm]}) / 1000$$

$$\text{Volume in cubic feet} = (\text{Average Area [in}^2\text{]} \times \text{Average Length}) / 1728$$

Background/Discussion:

This proposal is to clarify the existing method of measurement, reduce the risk of varied interpretations, and concisely describe the method for measuring packaged firewood.

Historically, the measurement of firewood, whether in a box, a bundle, or a cord, has been a challenge due to the inherent irregularity of firewood, and the unavoidable airspace in the product. One method was examined in 1991 in litigation against the California Department of Food and Agriculture (responsible for weights and measures). The volumetric test procedure for measuring firewood in containers was found by the court to be unconstitutionally vague and ambiguous. Owing to the need to develop a new methodology, the California Department of Food and Agriculture met with representatives of the California firewood industry, including California HotWood, to establish a standardized method of measurement for firewood, including the measuring procedures for bundled firewood. Various methods were extensively explored and studied, and a new method was developed satisfactory to the California Department of Food and Agriculture and the industry, including California HotWood. The method was subject to repetition without appreciable variation by the industry and by enforcement. The standard adopted by California in 1995 was later adopted by NIST, and has been functioning for some 20 years. Recently questions surfaced regarding the procedure, and the proposed methodology is to resolve those questions.

SWMA Action: New Item 4
Summary of comments considered by the regional committee (in writing or during the open hearings):
A NIST representative gave information describing the new test procedure.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input checked="" type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i>
Reasons for the committee recommendation:
The committee supports the advancement of item 3 and the inclusion of the audit procedure incorporates the Hot Wood proposal.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input checked="" type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i> <input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the "Additional Comments" section below)</i>
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports

from your region on this item.

The committee supports the advancement of item 3 and the inclusion of the audit procedure incorporates the Hot Wood proposal.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

260-1 Section 3.15. Test Procedure for Verifying the Usable Volume Declaration on Packages of Animal Bedding

Source:

NIST Office of Weights and Measures (2015)

Purpose:

Add a test procedure in HB133, Section 3.15. Test Procedure for Verifying the Usable Volume Declaration on Packages on Animal Bedding. This test procedure will be used for verifying the compressed volume and usable (uncompressed) volume on packages of animal bedding.

Item under Consideration:

Amend NIST Handbook 133 as follows:

Section 3.15. Test Procedure for Verifying the Usable Volume Declaration on Packages of Animal Bedding

3.15.1. Test Equipment

- **Calculator or Spreadsheet Software**
- **Modified Standard Package Report Form – Appendix D (at end of report).**
- **Package Inspection Worksheet Appropriate for Test Measure:**
 - **Appendix A – 26 Point Measurement Grid and Package Error Worksheet for Cylindrical Test Measures (at the end of the report)**
 - **Appendix B – 25 Point Measurement Grid and Package Error Worksheet for Square or Rectangular Test Measures (at the end of the report)**
- **Permanent Ink - Marking Pen.**
- **Knife or Razor Cutter (for use in opening packages and unwrapping shrink-wrapped pallets in warehouses)**
- **Cellophane Tape, Duct Tape (for repairing chutes and sealing packages)**
- **Polyethylene Bags (49 L to 113.5 L [13 gal to 30 gal]) (to hold product once it is uncompressed)**

- **Rigid Rulers – Starrett³ or equal with 1.0 mm graduations. The edges of a ruler used with a measuring frame must be straight and the edges must be the zero point (see Exhibit 2).**
 - **300 mm (12 in)**
 - **500 mm (19.5 in)**
 - **1 m (39 in)**
- **Tarp - Canvas 3 m × 3 m (10 ft × 10 ft)**
- **Broom and Dust Pan**
- **Levels – for verifying the level of the test measure and taking headspace readings.**
 - **152 mm (6 in) Bubble Level**
 - **1 m (40 in) Carpenter Level**
- **Scale 15 kg (30 lb) (only used if the audit procedure is utilized.)**
- **Chutes for Uncompressing and Pouring the Bedding into a Test Measure**

³ **Notice: The mention of trade or brand names does not imply endorsement or recommendation by the U.S. Department of Commerce over similar products available from other manufacturers.**

Table 1. Recommended Chute Dimensions

<u>Nominal Capacity</u>	<u>Height</u>	<u>Width</u>	<u>Length</u>
<u>70 L (2.5 ft³)</u>	<u>254 mm (10 in)</u>	<u>228 mm (9 in)</u>	<u>1219 mm (48 in)</u>
<u>100 L (3.5 ft³)</u>	<u>254 mm (10 in)</u>	<u>279 mm (11 in)</u>	<u>1397 mm (55 in)</u>
<u>170 L (6 ft³)</u>	<u>279 mm (11 in)</u>	<u>355 mm (14 in)</u>	<u>1727 mm (68 in)</u>
<u>240 L (8.5 ft³)</u>	<u>304 mm (12 in)</u>	<u>406 mm (16 in)</u>	<u>2006 mm (79 in)</u>
<u>283 L (10 ft³)</u>	<u>304 mm (12 in)</u>	<u>406 mm (16 in)</u>	<u>2286 mm (90 in)</u>

NOTE: Chutes (see examples below) may be constructed using hinges and pins so that they lie flat for transporting. They can be constructed of sheet metal or with other slick surface material which enable the bedding to flow easily. The construction of the chutes used in this study allows the sides to move in or out slightly so that the bedding does not become clogged at the outlet. The heights and lengths may be adjusted slightly to fit into vehicles for transport but the widths should not be reduced because narrowing the opening can restrict material flow and result in “bridging” where the bedding collects and creates a block. Also, the width should be kept smaller than the opening of the test measure so that spillage does not occur during pouring.

**Figure 1. Testing Chutes.**

- **Test Measures (see Table 2. “Test Measures for Animal Bedding”)**

Table 2. Test Measures for Animal Bedding <small>NOTES: a, b, c, and d</small>						
Only Interior Dimensions are Used for Volume Calculations						
Must Be Calibrated with Traceable Measurement Standards Prior to Use						
Rectangular & Square Test Measures						
Actual Volume of the Measure ^{b & d}	Interior Wall Dimensions			Surface Area	Marked Increments on Ruler	Increment Volume
	Length	Width	Height ^d			
<u>31.9 L</u> <u>1.13 ft³</u>	<u>213.4 mm</u> <u>(8.4 in)</u>	<u>203.2 mm</u> <u>(8 in)</u>	<u>736.6 mm</u> <u>(29 in)</u>	<u>43 362 mm²</u> <u>(67.2 in²)</u>	<u>12.7 mm</u> <u>(0.5 in)</u>	<u>550.6 mL*</u> <u>0.55 L</u> <u>(33.6 in³)</u>
<u>28.3 L</u> <u>1 ft³</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>92 903 mm²</u> <u>(144 in²)</u>		<u>1.18 L**</u> <u>(72 in³)</u>
<u>63.7 L</u> <u>2.25 ft³</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>685.8 mm</u> <u>(27 in)</u>			
	<u>406.4 mm</u> <u>(16 in)</u>	<u>228.6 mm</u> <u>(9 in)</u>	<u>685.8 mm</u> <u>(27 in)</u>			
<u>92 L</u> <u>3.25 ft³</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>304.8 mm</u> <u>(12 in)</u>	<u>990.6 mm</u> <u>(39 in)</u>			
	<u>406.4 mm</u> <u>(16 in)</u>	<u>228.6 mm</u> <u>(9 in)</u>	<u>990.6 mm</u> <u>(39 in)</u>			
<u>*1.0 mm = 43 mL (2.6 cu in) ** 1.0 mm = 92 mL or 0.09 L (5.6 cu in)</u>						
Square Test Measures						
Actual Volume of the Measure ^{b & d}	Interior Wall Dimensions			Surface Area	Marked Increments On Ruler	Increment Volume
	Length	Width	Height ^d			
<u>77.4 L</u> <u>(2.73 ft³)</u>	<u>381 mm</u> <u>(15 in)</u>	<u>381 mm</u> <u>(15 in)</u>	<u>533.4 mm</u> <u>(21 in)</u>	<u>145 161 mm²</u> <u>(225 in²)</u>	<u>1.0 mm</u> <u>(0.03937 in)</u>	<u>0.14 L</u> <u>(8.5 in³)</u>
<u>144 L</u> <u>(5.09 ft³)</u>	<u>508 mm</u> <u>(20 in)</u>	<u>508 mm</u> <u>(20 in)</u>	<u>558.8 mm</u> <u>(22 in)</u>	<u>258 064 mm²</u> <u>(400 in²)</u>		<u>0.25 L</u> <u>(15.2 in³)</u>
<u>283 L</u> <u>(10 ft³)</u>	<u>609.6 mm</u> <u>(24 in)</u>	<u>609.6 mm</u> <u>(24 in)</u>	<u>762 mm</u> <u>(30 in)</u>	<u>371 612 mm²</u> <u>(576 in²)</u>		<u>0.37 L</u> <u>(22.5 in³)</u>

Table 2. Test Measures for Animal Bedding NOTES: a, b, c, and d

Only Interior Dimensions are Used for Volume Calculations
Must Be Calibrated with Traceable Measurement Standards Prior to Use

Cylindrical Test Measures

These dimensions are based on the tube having a ¼ inch wall thickness. Other tube thicknesses may be used.

<u>Actual Volume</u> <u>Volume = $\pi r^2 h$</u>	<u>Interior Diameter</u> <u>(Outside Diameter)</u>	<u>Height</u>	<u>Surface Area</u> <u>Area = πr^2</u>	<u>Increment</u>	<u>Increment</u> <u>Volume</u>
<u>52 L</u> <u>(1.8 ft³)</u>	<u>292.1 mm (304.8 mm)</u> <u>11.5 in (12 in)</u>	<u>780 mm</u> <u>(30.70 in)</u>	<u>67 012 mm²</u> <u>(103.8 in²)</u>	<u>1.0 mm</u> <u>(0.03937</u> <u>in)</u>	<u>0.06 L</u> <u>(4 in³)</u>
<u>124 L</u> <u>(4.3 ft³)</u>	<u>444.5 mm (457.2 mm)</u> <u>17.5 in (18 in)</u>	<u>800 mm</u> <u>(31.49 in)</u>	<u>155 179 mm²</u> <u>(240.52 in²)</u>		<u>0.15 L</u> <u>(9.4 in³)</u>
<u>279 L</u> <u>(9.8 ft³)</u>	<u>596.9 mm (609.6 mm)</u> <u>23.5 in (24 in)</u>	<u>1000 mm</u> <u>(39.37 in)</u>	<u>279 829 mm²</u> <u>(433.76 in²)</u>		<u>0.27 L</u> <u>(16.4 in³)</u>

Notes for Table 2:

- Rectangular and Square Based Dry Measures are typically constructed of 12.7 mm to 19.05 mm (0.5 in to 0.75 in) Marine Plywood. A 4.76 mm (³/₁₆ in) transparent sidewall is useful for determining the level of fill, but must be reinforced or be made of thicker material if it distorts when the measure is filled. If the measure has a clear front, place the level gage at the back (inside) of the measure so that the markings are read over the top of the animal bedding. Any of these measures may be made without an attached bottom for ease of emptying if they are placed on a solid level base during filling and measurement.**
- Other size measures may be used if calibrated and the volume equivalence of the increment of 1.0 mm is no greater than ¹/₆ the MAV. Widening the base of a measure reduces the column height of the product and will reduce compression but the trade-off is that the larger surface area increases the volume so the potential for measurement errors increase. One of the benefits of the cylindrical design is that, in addition to eliminating the 90 degree angles of the corners where gaps in fill frequently occur, the surface area of a cylinder is less than an equal volume square measure and that results in better resolution in the volume measurements (i.e., compare the readability of a 24 in sq box which has a surface area of 576 in², to the 24 in cylinder which has a surface area of 433 in²). The height of the test measure may be reduced, but this will limit the volume of the package that can be tested.**
- If lines are marked in any test measures, they should extend around all sides of the measure if possible to improve readability. It is recommended that a line indicating the MAV level also be marked to reduce the possibility of reading errors when the level of the product is at or near the MAV.**
- If the measures are built to the dimensions shown above, the actual volume of most of the measures will be larger than the nominal volume so that plus errors (overfill) can be measured accurately.**

3.15.2. Test Procedure

Test Notes:

Rounding: When a volume measurement falls between graduations on a ruler, round the value in the direction that favors the packer. This practice eliminates the issue of rounding from the volume determination and provides packagers the benefit of the doubt. The ruler graduation is

1.0 mm so the rounding error will be limited to 0.5 mm or less. It is good practice to circle a measurement that has been rounded up or make a statement to such effect so that it becomes a part of the inspection record.

Safety:



This procedure does not address all of the safety issues that users need to be aware of in order to carry out the following tasks. Users are sometimes required to conduct test in warehouse spaces or retail stores where fork-trucks are in motion – care must be taken to warn others to avoid or exercise care around the test site. The procedure requires users to lift heavy objects including large bulky packages and test measures and includes the use of sharp instruments to obtain packages from shrink-wrapped pallets. Users may be required to climb ladders or work platforms to obtain packages. When opening and emptying packages, dust, and other particles may be present or escape from the packages which may cause eye injuries and respiratory or other health problems. Users must utilize appropriate safety equipment and exercise good safety practice. If safe working conditions cannot be ensured, suspend testing until the situation is corrected.

1. Follow the Section 2.3.1. “Define the Inspection Lot” select “Category A, Sampling Plan” in this inspection. Determine the Sample Size based on the size of the Inspection Lot using Category A. Collect the sample packages from the Inspection Lot using Section 2.3.4. “Random Sampling Selection.”

Test Note: Place the test equipment and sample packages in a location where there is adequate lighting and ample space around the packages and equipment so the packages can be opened and the chutes and test measures used safely.

Optional – Audit Screening by Weight

The full test procedure requires that all of the packages be opened for testing. Regardless of the type of bedding, the product cannot be returned to the original package. An alternative gravimetric auditing procedure may be used to reduce the amount of destructive testing and conserve inspection resources.

Audit Procedure: After randomly selecting the sample packages from the Inspection Lot, obtain the gross weight for each package. Select the lightest and heaviest packages and conduct a usable volumetric test these two packages. If the lightest and heaviest packages pass (i.e., each contains at least the useable volume declared on the label), it is highly likely that the remaining packages in the sample will also pass. Accept these two package samples as an AUDIT TEST and move on to inspect other types of bedding or Inspection Lots of other types or brands of bedding. If either of the two packages is found to have a minus error that exceeds the Maximum Allowable Variation, the sample fails. No further testing is required (i.e., assuming no MAV is allowed for the sample size (see Appendix A, Table 2-1. “Sampling Plans for Category A”).) If either of the packages is found to have a minus error that does not exceed the MAV, continue to test all of the packages and take action based on the final results from the complete sample.

Test Note: If the gravimetric audit procedure is used, ensure that the scale is placed on a solid level support and that its accuracy has been verified to a test load that is at least 10 percent more than the gross weight of the packages (e.g., to estimate that load, place one of the packages on the scale and then test the scale with a load above the package’s gross weight). See Section 2.2. “Measurement Standards and Test Equipment” for additional information.

2. Select the appropriate test measure for the package size.
 - Spread a tarp large enough to hold a chute and test measure.
 - Place the chute and test measure on the tarp. Verify that the test measure is level.
3. Select a chute of appropriate capacity (see Table 1) for the package size and position it on the tarp.
4. Open the Packaging, Uncompressing and Pouring the Bedding into the Test Measure Twice.
 - Open Package: Place the package in the chute and use a knife or box cutter to open and remove the wrapper. Spread the bedding uniformly along the length of the chute. The bedding is uncompressed in two steps. The first step is to loosen the clumps of bedding by gently pulling them apart (do not tear the fibers of cellulose bedding or “grind” any bedding between your hands because these practices break the material down). Spread your fingers and pick the material up using your hands from beneath to loosen it up. There should be no clumps of bedding in the chute. If any bedding has fallen out of the chute onto the tarp, collect it and return it to the chute. The following pictures illustrate this step of the procedure. The second step of the expanded volume recovery process is to pour the bedding into a test measure as described in Step 2.

Exhibit 1.



Exhibit 2.



Exhibit 3. First pour into the test measures.



- **First Pour:** The first pour into the test measure is only used to further un-compress the bedding so no measurements are taken. Hold the chute above the test measure and tilt it so that you pour the bedding into the center of the test measure. The bedding should be poured slowly into the test measure in one continuous stream and not “dumped” (if it is “dumped” or poured too quickly some of the bedding will blow out of the measure or the bedding will be packed down and its volume reduced). The flow rate should be controlled by the tilt angle of the chute. The chute itself can be shaken but **DO NOT HIT OR SHAKE THE TEST MEASURE.** (Do not adjust the flow by closing the opening of the chute as that may cause the bedding to heap up and then fall into the measure in clumps which may result in impact compression). Empty the bedding back into the chute and spread it out evenly along its length.



Exhibit 4. Showing how to hold a chute for the pour.



Exhibit 1. Showing how to cradle the chute on one arm and holding it with one hand while tilting it with the other hand.

- **Second Pour:** The second pour into the test measure is used to make the volume determination. Hold the chute above the test measure and tilt it so that you pour the bedding into the center of the test measure. The bedding should be poured slowly into the test measure in one continuous stream and not “dumped.” The flow rate should be

controlled by the tilt angle of the chute. The chute can be shaken but DO NOT HIT OR SHAKE THE TEST MEASURE.

Test Note: Stop filling the measure if it appears that the test measure will overflow. The overflow product should be measured separately (use a smaller test measure of adequate size and capacity if one is available) and the multiple measurement volumes are added. If pouring into a square test measure, pour at an angle to two corners for the widest opening (see Exhibit 12).



Exhibit 6. Filling a 44 L Test Measure.



Exhibit 7. Filling a Square Test Measure at an Angle to use the Larger Opening.

5. Volume Determination.

DO NOT HAND LEVEL THE SURFACE OF THE BEDDING AS MANUAL LEVELING “PACKS” THE BEDDING AND REDUCES ITS VOLUME. DO NOT JAR OR SHAKE THE TEST MEASURE

Test Note: Before using a test measure for volume determinations, place a level of adequate length on top of the test measure at five approximately equal measuring points across the top. A permanent marking pen can be used to evenly space the marks across the top edge of the test measure so that it can be positioned to take the measurements (see Exhibit 13).



Exhibit 2. Marking the evenly spaced measuring points across the top of the test measure.

- **Place a rigid level or straight edge of adequate size on top the test measure and select a ruler of adequate length to reach to the lowest level of the top surface of the bedding. Start at the measuring points to your left or right, place the ruler against the side of the level, and hold it with either hand. The zero graduation is pointed down so the ruler can be lowered into the test measure for measurement. Lower the ruler into the test measure slowly until its end is at the surface level of the bedding (see Exhibits 14 and 15).**



Exhibit 3. Placing ruler into the test measure with zero end down.



Exhibit 10. Ruler shown with zero end at surface of the bedding.

- **Determine the depth of each measurement point from the surface of the bedding to the bottom edge of the straight edge and record the value in the appropriate space on the worksheet. Take a minimum of 25 measurements (at least 26 for cylindrical measures) across the top of the test measure in a grid pattern. Read the graduations on the ruler from a position that minimizes errors caused by parallax.**

**Table 2. Illustrations of Depth Determinations
with Cylindrical Test Measures**



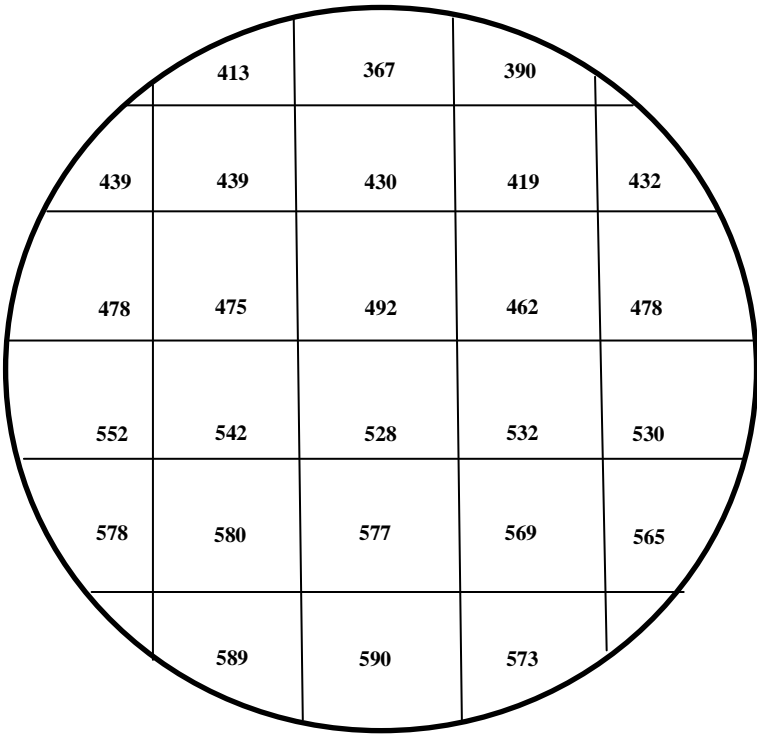
Figure 1. Shows how to read the depth of container.

The picture on the left (Figure1) shows how to read the depth from the bottom of the straightedge (top edge of measure) down to the bedding in a 44 L test measure from a position that reduces parallax. The graphic below (Figure 2) illustrates the actual worksheet with the headspace procedure on the 44 L cylinder test measure (its internal radius is 151 mm and its height is 610 mm). The bedding was poured into the test measure but not leveled. Then 26 measurements were made at the locations shown on the grid to determine the depth of the product from the top edge of the measure. The average of the 26 values was 500.7 mm which was subtracted from the height of the test measure to obtain 109.26 mm for the average height of the column of bedding in the measure.

The volume was calculated using: $Volume\ in\ liters = \pi r^2 h$
Pi) $3.14159265 \times 23035.69 \times 109.26\ mm = 7.90\ L^*$

*After the calculation was completed the result was divided by 1 000 000 to obtain the volume in liters.

Figure 2 Illustration of Worksheet.



**Table 2. Illustrations of Depth Determinations
with Cylindrical Test Measures**



**Figure 3. Using the headspace measurement on a
279 L test measure. The ruler is read from the bottom
edge of a straight edge or level from a position that
reduces parallax.**



**Figure 4. Illustrating how the ruler is placed on the
bedding with the headspace method. The ruler is read
from the bottom edge of a straight edge or level from
a position that reduces parallax.**

Table 3. Illustrations of Depth Determinations with Square Test Measures



Figure 1.

<u>246</u>	<u>162</u>	<u>81</u>	<u>132</u>	<u>177</u>
<u>195</u>	<u>115</u>	<u>43</u>	<u>46</u>	<u>112</u>
<u>111</u>	<u>77</u>	<u>51</u>	<u>95</u>	<u>146</u>
<u>220</u>	<u>138</u>	<u>46</u>	<u>98</u>	<u>131</u>
<u>264</u>	<u>193</u>	<u>118</u>	<u>148</u>	<u>180</u>

Figure 2.

The picture on the left (Figure 1) shows how to read the depth from the bottom of the straightedge (top edge of measure) down to the bedding in a 283 L square test measure from a position that reduces parallax. The graphic on the right (Figure 2) illustrates the actual worksheet with the headspace procedure on the square test measure (its internal dimensions are 609.6 mm × 609.6 mm × 762 mm (24 in × 24 in × 30 in). The bedding was poured into the test measure but not leveled. Then 25 measurements were made at the locations shown on the grid to determine the depth of the product from the top edge of the measure. The average of the 25 values was 133 mm that was subtracted from the height of the test measure to obtain 629 mm for the average height of the column of bedding in the measure.

The volume was calculated using: Volume in liters = lwh 609.6 mm × 609.6 mm × 629 mm = 233.74 L*

***After the calculation was completed, the result was divided by 1 000 000 to obtain the volume in liters.**



Figure 3. Using the headspace measurement on 56.6 L (2 cu ft) test measure. The ruler is read from the bottom edge of a straight edge or level from a position that reduces parallax.

Table 3. Illustrations of Depth Determinations with Square Test Measures

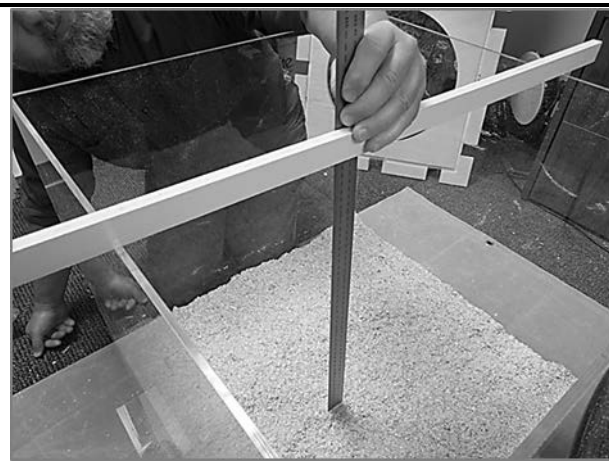


Figure 4. Showing how the ruler is placed on the bedding with the headspace method. The ruler is read from the bottom edge of a straight edge or level from a position that reduces parallax.

6. Using a Worksheet for Volume Calculation

- Enter the sample number of the package on the worksheet along with its labeled usable volume.
- Test Measure Information
 - For a cylindrical test measure, enter its interior height and radius in the spaces labeled A and B.
 - For a square or rectangular test measure enter its interior height and the area of its base (i.e., length × width) in spaces labeled A and B.
- Sum the measurements in the grid, divide the value by the number of measurements (i.e., 25 or 26), and enter this value in the space labeled C, Average Depth.
- Calculate the Average Height of the Bedding (subtract C [Average Depth] from A [Interior Height of Test Measure]) and enter this value in the space labeled D.
- Calculate the Volume of Bedding in the Package:
 - For a cylindrical test measure, the formula ($Volume\ in\ Liters = \pi r^2 h$) is shown in E on the worksheet. It is $Volume\ (Liters) = 3.14159265 \times r^2\ (B^2) \times Average\ Height\ (D) \div 1\ 000\ 000$. Enter the package volume in the space provided for this value in E.
 - For a square or rectangular test measure the formula ($Volume\ in\ Liters = LWH$) is shown in E on the worksheet. It is $Volume\ (Liters) = B\ (Area\ of\ Test\ Measure\ Base) \times D\ (Average\ Height) \div 1\ 000\ 000$. Enter the package volume in the space provided for this value in E.
- Calculate the Package Error using the following formula:
 - Package Error = Labeled Usable Volume (Liters) – E Package Volume (Liters)

$$\text{Package Error (Liters)} = \text{Labeled Expanded Volume} - \text{Package Volume}$$

- Transfer the individual package errors (verify whether they are positive or negative) to the “Modified Standard Package Report for Animal Bedding” in Appendix D. Fill in the required header information. For Box 7, “Number of Unreasonable Package Errors Allowed for Sample Size, use Appendix A, to Table 2-1. “Sampling Plans for Category A, Column 4.”, Based on the sample size, determine how many packages may have minus package errors that exceed the MAV (i.e., unreasonable package error).

Then:

- Calculate the Total Error (Enter in Box 8. “Total Error”).

7. Evaluation of the Test Results and Determination of Pass or Fail

- Determine if any of the minus package errors exceeds the MAV. Apply a tentative MAV value of 5 % ($0.05 \times$ labeled expanded volume) to single measurement volume determinations and a tentative MAV value of 10 % ($0.10 \times$ labeled expanded volume) on multiple-measurement volume determinations (enter in Box 4 “MAV”). If none of the minus package errors exceeds the MAV, go to Step 3. If any of the minus package errors exceed the MAV, enter the number of packages in Box 9 “Number of Unreasonable Minus Errors”. Go to Box 10 “Is Box 9 Greater than Box 7?” and determine if the value exceeds the number in Box 7 “Number of Unreasonable Package Errors Allowed for Sample Size”. If the number of packages with unreasonable errors exceeds the number permitted in Box 7 “Number of Unreasonable Package Errors Allowed for Sample Size,” the sample fails. Go to Box 17 “Disposition of the Inspection Lot” and reject the Inspection Lot.
- Calculate the Average Error for the sample by dividing Box 8 “Total Error,” by Box 6 “Sample Size” and enter the value in Box 11 “Calculate Average Error,” then go Box 12 “Does Box 11 equal Zero or Plus?” If the Average Error is zero or a positive number the sample passes, go to Box 17 “Disposition of the Inspection Lot” and approve the inspection lot. If the Average Error is a negative value go to Step 4. If the Average Error is a negative value go to Step 4 on the Inspection Worksheet.
- Calculate the Sample Standard Deviation and enter in Box 13. 13 “Compute Sample Standard Deviation.” To obtain the Sample Correction Factor for the sample size use Appendix A, Table 2-1. “Sampling Plans for Category A,” Column 3 “Sample Correction Factor” and enter that in Box 14 “Sample Correction Factor.” Then calculate the Sample Error Limit by multiplying Box 13 “Compute Sample Standard Deviation” and Box 14 “Sample Correction Factor.” Enter the value in Box 15 “Compute Sample Error Limit.”
 - Disregarding the signs, determine if the minus in Box 11 “Calculate Average Error” is larger than the value in Box 15 “Compute Sample Error Limit.”
 - If yes, the sample fails, go to Box 17 “Disposition of Inspection” and reject the Inspection Lot.
 - If no, the sample passes, go to Box 17 “Disposition of Inspection” and approve the Inspection Lot
- Prepare a comprehensive report of the test results and enforcement action taken and present the information to the party responsible for the product.

Background/Discussion:

This proposal will provide a standardized test method that will improve measurement accuracy at the point of pack and in testing at other locations. The test procedures recommend the use of a gravimetric audit procedure that may reduce destructive testing and reduce inspection time.

Even though some existing test measures may still be used the proposal encourages users to purchase the prescribed volumetric test measures, chutes and measuring instruments.

The NIST, OWM will develop and provide technical training on this subject matter and develop detailed equipment designs and drawings which will be made available on its website. The OWM will assist the animal bedding industry in implementing the proposed method of sale as well as developing and incorporating good manufacturing practices to ensure that the requirements of NIST Handbook 133 are met.

At the 2015 NCWM Interim Meeting Mr. Whiting (American Wood Fiber) spoke in support of this test procedure. Mr. Whiting worked closely with NIST, OWM on reviewing this test procedure and agrees this procedure has less variability, sensitivity, not time consuming, and is easier to perform in the field. A California county representative (regulator) suggested that the definition for animal bedding should account for wood shavings and chips. He also inquired about the results when the procedure is used to test ground corn and cat litter? It was also remarked that building a chute as specified and lifting it on shoulders and pouring needs to be examined. Could this be done with smaller chutes and multiple pours? Mr. Whiting who has performed this procedure remarked that this may need two inspectors. He also remarked that dense particle size have repeatability. The NIST Technical Advisor remarked that the background information is being reviewed formatting by the office publication coordinator and advised that no technical changes were being made and would be resubmit with Publication 16 (2015). The 2015 L&R Committee agreed that to move this forward as a Voting item.

NCWM 2015 Annual Meeting it was noted by the NIST Technical Advisor that the term “expanded volume: should read “usable volume” and deleted the term “compressed” from the section title. There was discussion as to how clay products when using chutes. Concern was expressed regarding the cost of purchasing testing equipment. The reason for the various vessel sizes is due to the variety of package sizes in the marketplace. The term “expanded” was changed to “usable” throughout the proposal along with minor editorial changes. This item was moved from Voting to Informational status.

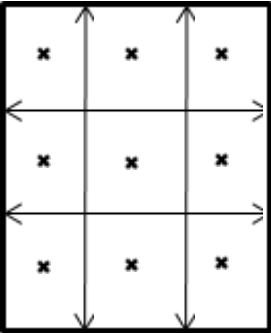
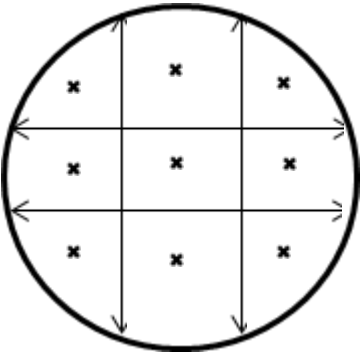
Refer to Appendix C., “Testing Packages of Animal Bedding and Peat Moss with Compressed and Expanded Volume Declarations” for the Executive Summary, additional background and supporting information.

Regional Association Comments:

During the NEWMA 2014 Interim Meeting, the L&R Chairman stated that NIST, OWM had submitted considerable information for the regions to review. This is one of a number of proposals that represents a large amount of work done at NIST to provide more consistent standards. An industry representative commented that he participated in the development of this proposal, and said industry has had a long-term struggle with various standards for both compressed and non-compressed packaging. He said these new procedures would allow for more accurate and easier testing in the field. He indicated that removal of the term “compressed” from the descriptor is important, because a consumer needs to know the usable amount of volume inside the package. These new procedures will minimize destructive testing, and will cover testing of new products in the market place. He strongly supports the proposal. A regulator asked if this procedure would include pelletized product. The industry representative indicated it would cover those products. Another regulator asked if compressed product would be broken up or crushed in the compressing process, and would therefore settle out to net a different volume. The industry representative explained that there is a certain amount of destruction, so the usable volume will generally be slightly less than the volume statement. A regulator expressed support for this item to allow for clear and easy understanding by the consumer. Another regulator asked a question about the chute design during the test procedure. The industry representative explained that one of the challenges in testing volume is the amount of variability, depending on the raw material you are starting with. He further explained that the chute allowed for more consistency among and between products and repeated testing. NEWMA forwarded the item to NCWM and recommended that this be a Voting item.

At the NEWMA Annual Meeting considered this Item in conjunction with Items 232-3 and 260-2. The Committee would like the work “tentative” stricken from the MAV values and considers this item fully developed.

At the 2014 SWMA Meeting, the Committee heard an overview of the changes being suggested from NIST. The Committee also heard that the requirement to put a compressed statement on a package was unnecessary and not useful to the end user. The recoverable volume is what the customer uses. The Committee heard that the test procedures are ready. SWMA forwarded the item to NCWM, recommending it as a Voting item.

SWMA Action: Item 260-1	
Summary of comments considered by the regional committee (in writing or during the open hearings):	
A NIST representative gave information describing the new test procedure.	
Item as proposed by the regional committee: (If different than agenda item)	
<p>The committee recommends adopting the following changes:</p> <ul style="list-style-type: none"> To address the Test Procedure for Uncompressed Animal Bedding – Add to Step 1 in the procedure the following test note: <u>Test Note: if the package is not labeled with a useable volume, it is opened and the contents are poured directly into the test measure.</u> To address the Test Measure Specifications and Designs – Add the following test note to Section 3.10 and to the Tables for Recommended Test Measures for animal bedding. <u>Test Note: nothing in 3.10 should be construed or interpreted as prohibiting the use of test measures meeting these specifications, or constructed in other geometric shapes or dimensions, or those made of other materials to test any other product.</u> To address comments on the Number of Volume Determination Measurements – Delete references in Step 5 and Tables 2 and 3 in regards to taking 26 measurements and replace with the following new language and graphics. <u>Take at least 9 measurements across the surface area of the product. Take the measurements at points approximately equidistant from each other and the sides of the test measure.</u> <p><u>For example:</u></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	
<ul style="list-style-type: none"> In regards to comments on the Maximum Allowable Variation – to withdraw the current recommendation 	

that a 10 % MAV be applied when multiple measurements are taken to determine total package volume, pending future study, and now recommend instead a 5 % MAV be applied to all tests of animal bedding.
Committee recommendation to the region: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation: The committee recommends that this item be moved to voting and that NIST verify the accuracy of the “actual volume” compared to “dimensions” in Table 2.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (<i>If different than regional committee recommendation</i>)
Regional recommendation to NCWM for item status: <input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM: Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee recommends that this item be moved to voting and that NIST verify the accuracy of the “actual volume” compared to “dimensions” in Table 2.

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 16 Recognize the Use of Digital Density Meters

Source:

Missouri (2016)

Purpose:

Allow the use of digital density meters for package checking testing of viscous fluids such as motor oils, diesel exhaust fluid (DEF) and antifreeze

Item under Consideration:

Amend NIST Handbook 133 as follows:

Develop specific test procedures for “**Chapter 3. Test Procedures – For Packages Labeled by Volume**” that would recognize the use of digital density meters in lieu of volumetric flasks and thermometers when testing certain viscous fluids such as motor oil, DEF, antifreeze, syrups, etc..

Background/Discussion:

Current test procedures are slow and awkward due to the need of using borosilicate glassware for package checking. Digital density meters are fast, use small samples size (2 ml) and have built in thermometers.

Digital density meters are fast and accurate in comparison with recognized Handbook 133 test procedures for viscous fluids. Using digital density meters equipped with built-in API density tables will not require the cooling samples to 60 F. There is no need to “wet down” volumetric flasks before each measurement. Most non-food products may be recovered without contamination. Only a small sample size (2 ml) of the product is needed for testing. There is no need for a partial immersion thermometer or volumetric flasks. The current method in “Section 3.4 Volumetric Test Procedures for Viscous Fluids – Headspace” does not work for plastic oblong bottles often used for motor oil. This new test procedures would eliminate the entrapment of air in testing viscous fluids (i.e. motor oil, DEF, antifreeze, syrups, etc.)

Well established ASTM and other international standard test methods are available with precision statements.

SWMA Action: New Item 16
Summary of comments considered by the regional committee (in writing or during the open hearings):
A state official spoke in support of this item.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee believes this item is fully developed.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input checked="" type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the “Additional Comments” section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region’s considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee believes this item is fully developed.

Additional letters, presentations and data may have been part of the committee’s consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

New Item 11 Incorporating Efficiencies into Inspections

Source:

San Diego, California (2016)

Purpose:

Improve efficiency in the time and resources to conduct inspections where it is determined early in the testing that the lot is going to fail.

Item under Consideration:

Amend NIST Handbook 133 as follows:

Option 1.)

Amend each test procedure in Handbook 133, indicated in 14 above, to make it permissive to allow the rejection of a lot if it is obvious that the number of UMEs exceeds the number allowed before all samples in the lot have been tested.

For each test procedure add the phrase “If an inspector at any time during testing packages determines the number of unreasonable minus errors exceeds the number allowed, the inspector may fail the lot without further testing and will not need to follow the requirements of Section 2.3.7. Evaluation for Compliance.”

Option 2.)

Make one “general” statement up front in Chapter 1, in sections 1.2.3 and/or 1.2.4 and/or or Chapter 2, 2.3.7.1 where it talks about the Individual Package Requirement and MAV.

The general statement or explanation should say something along the lines that “nothing in the Handbook or Test Procedures is to be interpreted that an inspector must continue testing all samples when the number of MAV’s allowed are exceeded. Once the MAV’s allowed are exceeded the lot fails and can be immediately rejected. It is no longer necessary (required) to continue testing the remainder of the samples. Reference to statements such as “every package must be opened and its error determined before the results can be evaluated” does not apply in cases where the number of allowed MAV’s is exceeded”.

Background/Discussion:

Current procedures in Handbook 133 require inspectors to test all products in a sample before determining compliance of a lot; e.g. Peat Moss section 3.9. If one follows the test procedure in section 3.9.2.2. (“Open each package in turn, ...”), every package must be opened and its error determined before the results can be evaluated. Section 3.9.3. Evaluation of Results, then refers the inspector to Section 2.3.7. where unreasonable minus errors (UMEs) are considered. Every test procedure in the Handbook has the same requirement. If an inspector determines that a number of packages errors exceed the UMEs allowed before completing testing of all the packages in the sample there is no provision to allow the inspector to reject the lot. All the packages have to be tested. The submitter has tested peat moss where the first two packages had UMEs. This exceeded the number allowed in the sample and would, in the final analysis, have resulted in the rejection of the lot. Yet following the requirement of section 3.9.2.2. the rest of the sample had to be tested, for a product that should have been rejected after the test of the first two packages. Requiring testing of the whole sample before determining the number of packages errors exceeding the number of UME’s allowed is costly in time and resources. It would be far better to allow an inspector to reject a lot when early in the testing there are obvious multiple unreasonable minus errors that exceed the number allowed. This would shorten the overall testing time for products requiring extensive time to determine errors and still result in the same determination of compliance.

There are several products that require destructive testing and excessive testing times, sometimes 15 or 20 minutes for each sample (e.g peat moss, mulch and soils, ice cream novelties, paint, compressed gas in cylinders). Requiring the testing of all packages in a sample for those products which require extensive and time consuming testing when it is apparent that the lot fail because of an excess of UME’s, is an unnecessary waste of time and resources.

Permitting rejection of a lot before all samples have been tested would eliminate an unnecessary and arduous procedure and provide an efficient resolution to the sampling of difficult to test products.

At the 2015 National Conference on Weights and Measures during the discussion on the testing of peat moss, a NIST technical advisor stated the intent of the Handbook was to allow the failure of a lot immediately on discovering excessive UME's and that this was taught in Handbook 133 workshops. Although this may be what the authors of Handbook 133 intended, unless it is made clear through specific language, it is very possible that such action by an inspector could face a legal challenge.

It is realized that proposal option 1.) affects many different sections of the Handbook 133 and therefore cannot address every specific section. If this proposal is supported by one or more of the regional weights and measures associations and forwarded to the Laws and Regulations Committee, it will be up to the Committee and NIST technical advisors to identify and correct the language in each test procedure within the Handbook.

SWMA Action: New Item 11
Summary of comments considered by the regional committee (in writing or during the open hearings):
No comments were heard on this item.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region: <input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
No specific language was proposed for this item, the committee believes that this concept has merit but would like to see a specific proposal with recommended amending language.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status: <input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
No specific language was proposed for this item, the committee believes that this concept has merit but would like to see a specific proposal with recommended amending language.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

270 OTHER ITEMS

270-1 D Fuels and Lubricants Subcommittee

Source:

The Fuels and Lubricants Subcommittee (2007)

Purpose:

Update the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in NIST Handbook 130 including major revisions to fuel ethanol specifications. Another task will be to update the Basic Engine and Fuels, Petroleum Products, and Lubricants Laboratory Publication.

Item under Consideration:

This item is under development. All comments should be directed to Dr. Matthew Curran, FALS Chair at (850) 921-1570, Matthew.Curran@freshfromflorida.com, or Ms. Lisa Warfield, NIST Technical Advisor at (301) 975-3308, lisa.warfield@nist.gov.

Background/Discussion:

The Subcommittee met on January 24, 2007, at NCWM Interim Meeting to undertake a review of a number of significant issues related to fuel standards. Their first project was to undertake a major review and update of the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in NIST Handbook 130. The Subcommittee also met at the 2007 NCWM Annual Meeting and continued its work on a number of items in addition to preparing a major revision of the Fuel Ethanol Specifications.

The followings Subcommittees were formed and will undertake the following projects as time and resources permit.

Handbook 130 WG: Mr. Jennings submitted to the FALS on the edits to Handbook 130 currently being proposed by his work group and asked the subcommittee to begin considering the proposed changes now. The Handbook 130 WG plans to share the proposed changes with the regions over the course of the next year with the goal that NCWM consider voting on the changes at its 2016 NCWM Annual Meeting. Mr. Jennings then invited FALS members to consider joining the group and requested that a collaboration site on the NCWM website be established to allow interested parties to comment on the proposed changes. Dr. Curran agreed to send a request for a collaboration site to NCWM Executive Director.

Renewable Diesel Labeling and Definitions WG: Ms. Rebecca Richardson provided an update on the group's efforts to FALS. Ms. Richardson believes the group would benefit from additional involvement from engine manufacturers and refiners. Derek Regal from Tesoro volunteered to serve on the work group.

CNG/LNG Equivalent Values WG: Jeff Clarke updated FALS on the efforts and purpose of this WG is to determine whether or not the diesel gallon equivalency conversion factor is accurate and added that the group has not as yet reached consensus on the conversion factor. Mr. Clarke then reviewed the current values and historical energy values and ratios from various models.

Organometallic WG: Jeff Jetter, (R&D Americas) provided a power point presentation on the work being done under the umbrella of the ASTM International Committee D02. The CRC has been commissioned to summarize the volumes of data that have been posted on the NCWM Organometallic WG repository site. The CRC report is under review and should be released in the coming weeks. Randy Jennings (TN) presented proposed changes relative to organometallics as a part of the Uniform Engine Fuel and Automotive Lubricants Regulation WG presentation. Currently, the proposed changes to the uniform regulation are labeling requirements based upon the Nevada and Tennessee rules. The route for NCWM will depend upon the outcome of the ASTM TG efforts. Mr. Jetter, Mr. Jennings, and Alyson Fick (ASTM International), provided a more detailed presentation on the collaboration between ASTM and NCWM at the NCWM Annual Meeting technical session.

SWMA Action: Item 270-1
Summary of comments considered by the regional committee (in writing or during the open hearings):
No comments were received on this item.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee would like to see this item remain developmental.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee would like to see this item remain developmental.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

270-2 D Packaging and Labeling Subcommittee

Source:

Packaging and Labeling Subcommittee (2011)

Purpose:

Provide an update of the activities of this Subcommittee which reports to the L&R Committee. The mission of PALS is to assist the L&R Committee in the development of agenda items related to packaging and labeling. The Subcommittee will also be called upon to provide important and much needed guidance to the regulatory and consumer packaging communities on difficult questions. PALS will report to NCWM L&R Committee. The Subcommittee is comprised of a Chairperson and eight voting members.

Item under Consideration:

This item is under development. All comments should be directed to Mr. Chris Guay, Packaging and Labeling Subcommittee Chair at (513) 983-0530, guay.cb@pg.com or Mr. David Sefcik, NIST Technical Advisor at (301) 975-4868, david.sefcik@nist.gov.

Background/Discussion:

comprised of four regulatory officials (one from each region) and four from industry (retailers and manufacturers). Mr. Guay, PALS Chair, reported that work is currently being held through webinar meetings and at the NCWM meetings. PALS members are responsible for providing updates at their Regional Meetings. Mr. Guay added that PALS will be developing proposals and providing guidance and recommendations on existing proposals as assigned by the NCWM L&R Committee. He also stressed the need and importance of having key federal agencies (FDA, FTC, and USDA) participating.

Mr. Guay reported the Subcommittee is considering further development of the following items:

- **Additional Net Content Declarations on the Principal Display Panel** - Package net contents are most commonly determined by the product form, for example – solid products are labeled by weight and liquid products are labeled by volume. Semi-solid products such as pastes, creams and viscous liquids are required to be labeled by weight in the United States and by volume in Canada.
- **Icons in Lieu of Words in Packaged labeled by Count** – Can a clear and non-misleading icon take the place of the word “count” or “item name” in a net content statement? While existing Federal regulation requires regulatory label information to be in “English,” the increasing presence of multilingual labels and the growing diversity of the U.S. population suggest more consumers are served with a clear and non-misleading icon.
- **Multilingual Labels**
- **Multipacks and Bundle Packages** - The net content statements for multipacks and bundled packages of individually labeled products can be different based on the approach used to calculate them. The difference is the result of the degree of rounding for dual inch-pound and metric declarations. Using two apparently valid but different methods can yield one net content statement result, that provide better accuracy between the metric and inch-pound declarations and a different net content result which is consumer friendly.

NCWM 2013 Interim Meeting: Mr. James Kohm (Director of Enforcement at the Federal Trade Commission [FTC]), briefed NCWM on the goals and objectives of FTC. Mr. Kohm gave a general overview of the Fair Packaging and Labeling Act (FPLA) and announced that it is under review in 2013. Mr. Chris Guay provided an update on the action of PALS. PALS will be focusing on best practice principles for the various quantity and quality statements seen in the marketplace

NCWM 2014 Interim Meeting Mr. Guay (PALS Chair) spoke that they are awaiting an announcement from FTC in regards to updating the FPLA regulations.

NCWM 2014 Annual Meeting: Mr. Guay (PALS Chair) reported that PALS had drafted and submitted comments in response to a Federal Register Notice requesting possible updates to FTC’s Fair Packaging and Labeling Act regulations. PALS drafted 15 specific comments for FTC consideration and these were submitted in May, 2014. PALS reviewed the comments in detail during their Subcommittee session held on Sunday afternoon. FTC is now in the process of considering these and other comments and will issue a formal proposal to make changes within the next 1-2 years.

NCWM 2015 Interim Meeting: Mr. Guay (PALS Chair) reported that PALS was making progress on a Recommended Practice Document for quantity-related statements appearing the package net content statement outside of the required statement of net quantity. He noted that no guidance or regulation exists for these types of statements and as a result, every manufacturer creates their own approach. A Recommended Practice Document is expected to help bring uniformity and consistency by providing a reference for these types of label statements. This document will either be a stand-alone document on the NCWM website or included as part of another NCWM publication.

NCWM 2015 Annual Meeting: Mr. Guay (PALS Chair) reported that FTC has recommended adoption of 5 amendment recommended by PALS into their final FPLA regulations. FTC also responded to each recommendation made by PALS. FTC did not propose adoption of amendments from any other source.

Chris Guay (PALS Chair) and Angela Godwin (Ventura County, CA) gave a presentation providing details of the developing Recommended Practice Document to build awareness and to get broader input on this item. The Subcommittee's goal is to have the document mostly done by early 2016 so that it can be refined and edited prior to the 2016 annual meeting. It is expected to be submitted for regional review in autumn, 2016.

SWMA Action: Item 270-2
Summary of comments considered by the regional committee (in writing or during the open hearings):
No comments were heard on this item.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>)
Reasons for the committee recommendation:
The committee would like to see this item remain developmental.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda (<i>In the case of new items, do not forward to NCWM</i>) <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda (<i>To be developed by source</i>) <input type="checkbox"/> Unable to consider at this time (<i>Provide explanation in the "Additional Comments" section below</i>)
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee would like to see this item remain developmental.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

270-3 D Moisture Allowance Task Group (MATG)

Source:

Moisture Allowance Task Group (2012)

Purpose:

This Task Group will provide additional guidance for making moisture allowances for products not listed in NIST Handbook 133.

Item under Consideration:

This item is under development. All comments should be directed to Mr. Kurt Floren, Moisture Allowance Task Group Chair at (626) 575-5451, kfloren@acwm.lacounty.gov or Ms. Lisa Warfield, NIST Technical Advisor at (301) 975-3308, lisa.warfield@nist.gov

Background/Discussion:

NCWM 2012 Interim Meeting: Ms. Cardin, Committee Chair, will be requesting that the NCWM Board of Directors form a new Task Group to review moisture allowance. The 2012 L&R Committee designated this item as a Developing item.

NCWM 2012 Annual Meeting: Mr. Floren (Los Angeles County, California) announced that he will Chair the Moisture Allowance Task Group.

NCWM 2013 Interim Meeting: Mr. Floren announced that he is seeking a representative from each region for the MATG. He would prefer to have a representative from each region. Currently the following have regions have provided a representative; NEWMA, Mr. Frank Greene, (Connecticut) and WWMA, Mr. Brett Gurney (Utah). The following individuals have also expressed interest; Ms. Maile Hermida (Hogan Lovells US, LLP), Ms. Ann Boeckman (Kraft Foods Group), Mr. Chris Guay (Procter and Gamble Co.). Mr. Floren remarked that meetings will be held via web-meetings and at the NCWM Conferences.

NCWM 2014 Interim Meeting: The MATG discussed how to proceed forward on this item and reviewed past history of prior work done. At the 2014 and 2015 NCWM Annual Meeting Kurt Floren (MATG Chair) informed the Committee that there has been scheduling conflicts with other priorities this past year and he has not had the opportunity to get a meeting scheduled. Mr. Floren would like to opportunity to continue this subcommittee group and will pursue this item.

SWMA Action: Item 270-3
Summary of comments considered by the regional committee (in writing or during the open hearings):
No comments were heard on this item.
Item as proposed by the regional committee: (If different than agenda item)
Committee recommendation to the region:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i>
Reasons for the committee recommendation:
The committee would like to see this item remain developmental.
COMPLETE SECTION BELOW FOLLOWING VOTING SESSION
Final updated or revised proposal from the region: (If different than regional committee recommendation)
Regional recommendation to NCWM for item status:
<input type="checkbox"/> Voting Item on the NCWM Agenda <input type="checkbox"/> Information Item on the NCWM Agenda <input type="checkbox"/> Withdraw the Item from the NCWM Agenda <i>(In the case of new items, do not forward to NCWM)</i> <input checked="" type="checkbox"/> Developing Item on the NCWM Agenda <i>(To be developed by source)</i> <input type="checkbox"/> Unable to consider at this time <i>(Provide explanation in the "Additional Comments" section below)</i>
Regional Report to NCWM:
Please provide your report in this section exactly how you want it to appear in the NCWM reports to represent your region's considerations, support or opposition, and recommendations. This will replace any previous reports from your region on this item.
The committee would like to see this item remain developmental.

Additional letters, presentations and data may have been part of the committee's consideration. Please refer to <http://www.ncwm.net/meetings/interim/publication-15> to review these documents.

Mr. Rich Lewis, Georgia | Chair
Mr. Bob Williams, Tennessee | Member
Mr. John Stokes, South Carolina | Member
Mr. Craig Allgood, Mississippi | Acting Member
Mr. Hal Prince, Florida | Member
David Sefcik, | Technical Advisor

Laws and Regulations Committee