

Addendum Sheet

Specifications and Tolerances (S&T) Committee Interim Report

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Florida

3000 INTRODUCTION

The Specifications and Tolerances Committee (hereinafter referred to as “Committee”) submits its Interim Report to the National Conference on Weights and Measures. The Report consists of the Interim Report offered in Publication 16, “NCWM Committee Reports,” and this Addendum. Page numbers in tables below refer to pages in the Addendum.

Presented below is a list of voting and information items. Voting items are indicated by the suffice **V** or, if the voting item is part of the Consent Calendar, by the suffix **VC**. If the item is an Information item, it is indicated by the suffix **I**; if the item is Withdrawn, it is indicated by the suffix **W**. Items marked with a **D** after the key numbers are Developing items. The developing designation indicates an item has merit; however, the item is returned to the submitter for further development before any action at the national level. The Committee’s Final Report is proposed to be grouped in the following order:

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3504	TAXIMETERS.....	10
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3504-2 V	USNWG on Taximeters – Taximeter Code Revisions and Global Positioning System-Based Systems for Time and Distance Measurement.....	10
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3200-4 D	Table 3, Parameters for Accuracy Classes (See related item 3200-8)	6
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3200-8 D	T.N.3.6. Coupled-in-Motion Railroad Weighing Systems (See related item 3200-4)	6
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3201 BELT-CONVEYOR SCALE SYSTEMS		7
3201-1 W	T.1. Tolerance Values (See related items 3200-7, 3204-1, 3205-2, 3508-2, 3509-1 and 3600-4)	7
3204 AUTOMATIC WEIGHING SYSTEMS		7
3204-1 W	T.N.2.1. General (See related items 3200-7, 3201-1, 3205-2, 3508-2, 3509-1 and 3600-4)	7
3205 WEIGH-IN-MOTION SYSTEMS USED FOR VEHICLE ENFORCEMENT SCREENING		7
3205-2 W	T.1.1. Design (See related items 3200-7, 3201-1, 3204-1, 3508-2, 3509-1 and 3600-4)	7
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3508	MULTIPLE DIMENSION MEASURING DEVICES	11
3508-2	W T.3. Tolerance Values (See also items 3200-7, 3201-1, 3204-1, 3205-1, 3509-1 and 3600-4)	11
3509	ELECTRONIC LIVESTOCK, MEAT, AND POULTRY EVALUATION SYSTEMS	11
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3600-4	W Appendix D – Definitions: overregistration and underregistration (See related items 3200-7, 3201-1, 3204-1, 3205-2, 3508-2 and 3509-1).....	12

Details of All Items
(In order by Reference Key)

3100 – GENERAL CODE

3100-1 D G-S.5.2.2. Digital Indication and Representation (See related items 3200-5 and 3600-2)

No changes.

3100-2 W G-UR.3.3. Position of Equipment

No changes.

3200 SCALES

3200-1 V S.1.2. Value of Scale Division Units and Appendix D – Definitions: batching scale

No changes.

3200-2 V S.1.2.2. Verification Scale Interval

The Committee heard a suggestion from Tina Butcher (NIST OWM) to add a retroactive date to the proposed language so that equipment already in the field will eventually be modified to align with the proposed requirements. The submitter of this proposal, Dr. Steve Harrington (OR), indicated he supports this proposed modification. Consequently, the Committee is replacing the proposal shown in the Item Under Consideration with the following:

S.1.2.2. Verification Scale Interval.

S.1.2.2.1. Class I and II Scales and Dynamic Monorail Scales. If $e \neq d$, the verification scale interval “e” shall be determined ...

S.1.2.2.2. Class I and II Scales used in Direct Sales. When accuracy class I and II scales are used in direct sale applications the value of the displayed division “d” shall be equal to the value of the verification scale interval “e.”

(Added 20XX) (Nonretroactive as of January 1, 2020. To become retroactive as of January 1, 2023.)

S.1.2.2.23. Class III and IIII Scales. The value of “e” is specified by the manufacturer as marked on the device. Except for dynamic monorail scales, “e” must be less than or equal to “d.”
(Added 1999) **(Amended 20XX)**

3200-3 V S.1.8.5. Recorded Representations, Point of Sale Systems and S.1.9.3. Recorded Representations, Random Weight Package Labels

No changes; however, the Committee elected to remove S.1.9.3. from the title of the item since that proposed paragraph is no longer under consideration.

3200-4 D Table 3, Parameters for Accuracy Classes (for In-Motion railway systems) (See related item 3200-8)

No changes.

3200-5 D Table 3, Parameters for Accuracy Classes (for summed indications) (See related items 3100-1 and 3600-2)

No changes.

3200-6 W N.1. Test Procedures

Based on a request by the submitter the Committee elected to withdraw this item.

3200-7 W T.1. General and T.N.2.1. General (See related items 3201-1, 3204-1, 3205-1, 3508-2, 3509-1 and 3600-4)

No changes.

3200-8 D T.N.3.6. Coupled-in-Motion Railroad Weighing Systems (See related item 3200-4)

No changes.

3201 BELT-CONVEYOR SCALE SYSTEMS

3201-1 W T.1. Tolerance Values (See related items 3200-7, 3204-1, 3205-2, 3508-2, 3509-1 and 3600-4)

No changes.

3202 AUTOMATIC BULK WEIGHING SYSTEMS

3202-1 D A. Application, S Specifications, N. Notes, UR. User Requirements

No changes.

3204 AUTOMATIC WEIGHING SYSTEMS

3204-1 W T.N.2.1. General (See related items 3200-7, 3201-1, 3205-2, 3508-2, 3509-1 and 3600-4)

No changes.

3205 WEIGH-IN-MOTION SYSTEMS USED FOR VEHICLE ENFORCEMENT SCREENING

3205-1 I A. Application. and Sections Throughout the Code to Address Commercial and Law Enforcement Applications

No changes; however, the Committee intends to insert the draft prepared by the Weigh-in-Motion Task Group into the final report.

3205-2 W T.1.1. Design (See related items 3200-7, 3201-1, 3204-1, 3508-2, 3509-1 and 3600-4)

No changes.

3300 LIQUID MEASURING DEVICES

3300-1 VC S.2.1. Vapor Elimination (See related items 3301-1, 3305-1, 3306-1 and 3307-1)

No changes.

3300-2 D UR.3.4. Printed Ticket

Based on comments received during open hearings the Committee felt that the submitter should consider modifying the specification section and the existing user requirement. As a result the Committee decided to change the status of the item to Developing.

3300-3 W Recognized the Use of Digital Density Meters

No changes.

3301 VEHICLE-TANK METERS

3301-1 VC S.2.1. Vapor Elimination (See related items 3300-1, 3305-1, 3306-1 and 3307-1)

No changes.

3301-2 W S.3.7. Manifold Hose Flush System

Based on a request by the submitter the Committee elected to withdraw this item.

3301-3 VC S.5.7. Meter Size

No changes.

3301-4 W N.4.X. Automatic Stop Mechanism, T.X. Automatic Stop Mechanism and UR.2.6. Automatic Stop Mechanism

No changes.

3302 LPG AND ANHYDROUS AMMONIA LIQUID-MEASURING DEVICES

3302-1 D N.3. Test Drafts.

Based on concerns raised by numerous members during the open hearings and recommendations from all four regional associations the Committee felt the item had merit, but more work is necessary to move the item forward.

3302-2 D N.4.1.2. Repeatability Tests and N.4.2.4. Repeatability Tests for Type Evaluation

No changes.

3302-3 VC N.4.2.3. For Wholesale Devices

No changes.

3305 MILK METERS

3305-1 VC S.2.1. Vapor Elimination (See related items 3300-1, 3301-1, 3306-1 and 3307-1)

No changes.

3306 WATER METERS

3306-1 VC S.2.2.1. Air Elimination (See related items 3300-1, 3301-1, 3305-1 and 3307-1)

No changes.

3307 MASS FLOW METERS

3307-1 VC S.3.3. Vapor Elimination (See related items 3300-1, 3301-1, 3305-1 and 3306-1)

The Committee heard comments on this item in conjunction with the other items in the “batch” of items listed above. The Committee heard support for the other items in this batch without changes. However, for this item, Mrs. Tina Butcher reported that in discussions with the Meter Manufacturers Association at their meeting on 7/15/17 a suggestion was made to modify the proposal to retain the original reference to “measurement” in the first sentence

of paragraph S.3.3. Members of the MMA noted that it is not necessary to *prevent* air/vapor from passing through a mass flow meter to achieve accurate measurement. It is only necessary to require that there be means to prevent the *measurement* of the air/vapor.

Consequently, the Committee is replacing the proposed changes to paragraph S.3.3. with the following:

S.3.3. Air/Vapor Elimination. – A ~~liquid-measuring instrument or~~ measuring system shall be equipped with an effective air/vapor or air eliminator or other **effective automatic** means, ~~automatic in operation,~~ to prevent the measurement of air/vapor. Vent lines from the air/~~or~~ vapor eliminator shall be made of ~~metal tubing or some other suitable rigid~~ **appropriate non-collapsible** material.

(Amended 1999 **and 2017**)

S.3.3.1. Air/Vapor Elimination on Loading Rack Liquid ~~Metering~~ Measuring Systems.

- (a) A loading rack ~~liquid metering measuring~~ system shall be equipped with an **effective air/vapor or air** eliminator or other automatic means to prevent the passage of air/vapor and air through the meter, unless the system is designed or operationally controlled by a ~~means method, approved by the weights and measures jurisdiction having statutory authority over the device,~~ such that neither air nor vapor can enter the system.
- (b) Vent lines from the air/~~or~~ vapor eliminator (~~if present~~) shall be made of ~~metal tubing or other rigid~~ **appropriate non-collapsible** material.

(Added 1995) (**Amended 2017**)

3307-2 D N.3. Test Drafts.

Based on concerns raised by numerous members during the open hearings and recommendations from all four regional associations the Committee felt the item had merit, but more work is necessary to move the item forward.

3504 TAXIMETERS

3504-1 V A.2. Exceptions. (See related item 3600-6)

No changes, but the Committee believes items 3504-1 and 3600-6 should be voted on together as one item should not be adopted without the other.

3504-2 V USNWG on Taximeters – Taximeter Code Revisions and Global Positioning System-Based Systems for Time and Distance Measurement

Based on comments received by the Committee regarding the “roads” used to test the system, the Committee elected to remove “...which are in good repair.”

N.1.3.2.1. Roads. – All tests shall be conducted on public roads ~~which are in good repair.~~

The Committee is not recommending any additional changes to the item under consideration.

3508 MULTIPLE DIMENSION MEASURING DEVICES

3508-1 VC S.1.7. Minimum Measurement Lengths and S.1.8. Indications Below Minimum and Above Maximum

Mrs. Tina Butcher, NIST OWM, asked that the Committee consider modifying the last sentence in S.1.7. in the proposal to clarify the requirement for multi-interval devices. Mrs. Butcher noted that OWM's proposed change was shared in advance of the NCWM Annual Meeting with the MDMD Work Group. She reported that the Chairman commented that the proposed changes provide clarity. The WG concurred that the change was not a substantial change from the original proposal. Mr. Kennington spoke at the open hearings to confirm this and to support the item with the change proposed by OWM.

Based on the comments received, the Committee modified the proposal to read as follows:

S.1.7. Minimum Measurement Lengths. – Except for entries of tare, the minimum measurement length to be measured by a device is 12 d-divisions. The manufacturer may specify a longer minimum measurement length. **For multi-interval devices, this applies only to the first measuring range (or segment) of each measurement axis (length, width, and height).**

S.1.8. Indications Below Minimum and Above Maximum. – When objects are smaller than the minimum dimensions identified in paragraph S.1.7. Minimum Measurement Lengths or larger than any of the maximum dimensions plus 9 d, and/or maximum volume marked on the device plus 9 d, or when a combination of dimensions, **including tare**, for the object being measured exceeds the measurement capability of the device, the indicating or recording element shall either:

...

3508-2 W T.3. Tolerance Values (See also items 3200-7, 3201-1, 3204-1, 3205-1, 3509-1 and 3600-4)

No changes.

3509 ELECTRONIC LIVESTOCK, MEAT, AND POULTRY EVALUATION SYSTEMS

3509-1 W T.1. Tolerances on Individual Measurements (See related items 3200-7, 3201-1, 3204-1, 3205-2, 3508-2 and 3600-4)

No changes.

3600 OTHER ITEMS

3600-1 D Electric Watthour Meters Code under Development

No changes.

3600-2 D Appendix A – Fundamental Considerations: Section 4.4. General Considerations (See related items 3100-1 and 3200-5)

No changes.

3600-3 W Appendix D – Definitions: Batching System

No changes.

3600-4 W Appendix D – Definitions: overregistration and underregistration (See related items 3200-7, 3201-1, 3204-1, 3205-2, 3508-2 and 3509-1)

No changes.

3600-5 D Appendix D – Definitions: Remote Configuration Capability

No changes.

3600-6 V 5.XX. Transportation Network Measurement Systems – Tentative Code and Appendix D Definitions (See related item 3504-1)

Based on numerous comments received concerning the definition of “transfer standard” in the tentative code the Committee elected to remove the definition with the expectation a definition will be established in the near future.

~~transfer standard. – A device or standard used in the field to evaluate the device or system under test.~~

Further, based on comments received by the Committee regarding the “roads” used to test the system, the Committee elected to remove “...which are in good repair.”

~~N.1.3.2. Roads. – All tests shall be conducted on public roads which are in good repair.~~

The Committee is not recommending any additional changes to the tentative code; however, the Committee believes items 3504-1 and 3600-6 should be voted on together as one item should not be adopted without the other.

The Committee is not recommending any additional changes to the tentative code.



Dr. Matthew Curran, Florida | Committee Chair
Ms. Jane Zulkiewicz, Town of Barnstable, MA | Member
Mr. Ivan Hankins, Iowa | Member
Ms. Rachelle Miller, Wisconsin | Member
Mr. Josh Nelson, Oregon | Member
Mr. Luciano Burtini, Measurement Canada | Canadian Technical Advisor
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Specifications and Tolerances Committee