
Table of Content

Foreword.....	iii
Committee Members	iv
Past Chairmen of the Committee	v
Table of Acronyms.....	vi
2012 Amendments.....	xv
2012 Editorial Changes.....	xvi
Chapter 1. General Information.....	1
1.1. Scope	1
1.1.1. When and Where to Use Package Checking Procedures	1
a. Point-of-Pack.....	1
b. Wholesale.....	1
c. Retail	1
1.1.2. Selecting a Product for Testing.....	2
1.2. Package Requirements	2
1.2.1. Inspection lot	3
1.2.2. Average Requirement.....	3
1.2.3. Individual Package Requirement	3
1.2.4. Maximum Allowable Variation	3
1.2.5. Exceptions to the Average and Individual Package Requirements.....	3
1.2.6. Deviations Caused by Moisture Loss or Gain	4
1.2.6.1. Applying a Moisture Allowance	4
1.3. Sampling Plans.....	5
1.3.1. Audit Tests.....	5
1.4. Other Regulatory Agencies Responsible for Package Regulations and Applicable Requirements	6
1.5. Assistance in Testing Operations.....	6
1.6. Health and Safety.....	6
1.7. Good Measurement Practices	7
1.7.1. Traceability Requirements for Measurement Standards and Test Equipment.....	7
1.7.2. Certification Requirements for Standards and Test Equipment.....	7
Chapter 2. Test Procedures for Packages Labeled by Weight - Gravimetric Testing.....	9

2.1.	Scope	9
2.2.	Measurement Standards and Test Equipment.....	9
2.2.1.	Scale Requirements:	9
2.2.2.	Scale Accuracy.....	9
2.2.3.	Scale Tolerance.....	10
2.2.4.	Scale Verification	11
2.2.4.1.	Increasing-Load Test.....	12
2.2.4.2.	Decreasing-Load Test	12
2.2.4.3.	Shift Test	12
2.2.4.4.	Return to Zero	12
2.2.5.	Other Test Equipment Requirements	13
2.3.	Basic Test Procedure for Gravimetric Testing of Net Weight.....	13
2.3.1.	Define the Inspection Lot	14
2.3.2.	Select Sampling Plans	14
2.3.3.	Record Inspection Data	14
2.3.3.1.	Procedure for Recording Data.....	15
2.3.4.	Random Sample Selection.....	16
2.3.5.	Procedures for Determining Tare.....	16
a.	Used Dry Tare	17
b.	Unused Dry Tare.....	17
c.	Wet Tare	17
2.3.5.1.	Determination of Tare Sample and Average Tare Weight.....	18
2.3.5.2.	Special Procedures for Determining Tare	19
a.	Aerosol Containers	19
b.	Vacuum Packed Coffee	20
2.3.6.	Determine Nominal Gross Weight and Package Error	20
2.3.6.1.	Determine Nominal Gross Weight.....	20
2.3.6.2.	Determine Package Error	20
2.3.6.3.	Compute Total Package Error	21
2.3.7.	Evaluate for Compliance.....	21
2.3.7.1.	Maximum Allowable Variation (MAV) Requirement:.....	21
2.3.7.2.	Average Requirement:.....	21
2.3.8.	Moisture Allowances.....	22
2.3.8.1.	Applying Moisture Loss before Determining Package Errors	22
2.3.8.2.	Applying Moisture Allowance after Determining Package Errors	25
2.3.8.3.	Moisture Allowance Gray Area	26
2.4.	Borax	26

2.4.1. Test Equipment	27
2.4.2. Test Procedure.....	27
2.5. Determination of Drained Weight.....	28
2.5.1. Test Equipment	28
2.5.2. Test Procedure.....	29
2.6. Net Weight of Encased-in-Ice and Ice Glazed Products.....	29
2.6.1. Net Weight of Encased in Ice and Frozen Block Product	29
2.6.1.1. Test Equipment	30
2.6.1.2. Test Procedure for Encased-in-Ice Product Only.....	30
2.6.2. Net Weight of Ice Glazed Seafood, Meat, Poultry or Similar Products.....	31
2.6.2.1. Test Equipment	31
2.6.2.2. Test Procedures for Ice-Glazed Product Only.....	31
2.6.3. Evaluation of Results	32
Chapter 3. Test Procedures – For Packages Labeled by Volume.....	33
3.1. Scope	33
3.1.1. Test Methods	33
3.2. Gravimetric Test Procedure for Non-Viscous Liquids.....	34
3.2.1. Test Equipment	34
3.2.2. Test Procedure.....	35
3.2.3. Evaluation of Results	37
3.3. Volumetric Test Procedure for Non-Viscous Liquids.....	37
3.3.1. Test Equipment	37
3.3.2. Test Procedure.....	38
3.3.3. Evaluation of Results	38
3.4. Volumetric Test Procedures for Viscous Fluids - Headspace	38
3.4.1. Test Equipment	38
3.4.2. Test Procedures	39
a. Test Procedure for Testing Oils, Syrups, and other Viscous Liquids with a Smooth and Level Surface	39
b. Test Procedure for Testing Mayonnaise, Salad Dressing, and Water Immiscible Products with no Smooth and Level Surface.....	40
3.4.3. Evaluation of Results	41
3.5. Goods Labeled by Capacity – Volumetric Test Procedure.....	41

3.5.1. Test Equipment	41
3.5.2. Test Procedure.....	41
3.5.3. Evaluation of Results	42
3.6. Pressed and Blown Glass Tumblers and Stemware.....	42
3.6.1. Test Equipment	42
3.6.2. Test Procedure.....	42
3.6.3. Evaluation of Results	43
3.7. Volumetric Test Procedure for Paint, Varnish, and Lacquers – Non-aerosol	43
3.7.1. Test Equipment	43
3.7.2. Test Procedures.....	44
a. Field (Retail) Auditing Procedure	44
b. Plant Audit Test Procedure.....	46
c. Violation Procedure.....	47
3.7.3. Evaluation of Results	49
3.8. Testing Viscous Materials – Such As Caulking Compounds and Pastes	49
3.8.1. Test Equipment	49
3.8.2. Test Procedure.....	50
3.8.3 Evaluation of Results	51
3.9. Peat Moss.....	51
3.9.1. Compressed Volume Packages.....	51
3.9.1.1. Test Equipment	51
3.9.1.2. Test Procedure.....	51
3.9.2. Uncompressed Volume Packages.....	52
3.9.2.1. Test Equipment	52
3.9.2.2. Test Procedure.....	52
3.9.3. Evaluation of Results	53
3.10. Mulch and Soils Labeled by Volume.....	53
3.10.1. Test Equipment:.....	53
3.10.2. Test Procedure.....	55
3.10.3. Evaluation of Results	55
3.11. Ice Cream Novelties	55
3.11.1. Test Equipment	56
3.11.2. Test Procedure.....	57
3.11.3. Evaluation of Results	59
3.12. Fresh Oysters Labeled by Volume	59

3.12.1. Test Equipment	59
3.12.2. Test Procedure.....	60
3.12.3. Evaluation of Results	61
3.13. Determining the Net Contents of Compressed Gas in Cylinders	61
3.13.1. Test Equipment	62
3.13.2. Test Procedures	63
a. Test Procedure for Cylinders Labeled by Weight	63
b. Test Procedure for Cylinders Labeled by Volume	64
3.13.3. Evaluation of Results	64
3.14. Firewood – (Volumetric Test Procedure for Packaged Firewood with a Labeled Volume of 113 L [4 ft³] or Less).....	64
3.14.1. Test Equipment	64
3.14.2. Test Procedures.....	65
a. Boxed Firewood.....	65
b. Crosshatched Firewood.....	66
c. Bundles and Bags of Firewood.....	66
3.14.3. Evaluation of Results	67
Chapter 4. Test Procedures – Packages Labeled by Count, Linear Measure, Area, Thickness, and Combinations of Quantities	69
4.1. Scope	69
4.2. Packages Labeled by Count	69
4.2.1. Packages Labeled with 50 Items or Fewer.....	69
4.2.1.1. Test Equipment	69
4.2.1.2. Test Procedure.....	69
4.2.1.3. Evaluation of Results	69
4.2.2. Packages Labeled by Count of More than 50 Items	70
4.2.2.1. Test Equipment	70
4.2.2.2. Test Procedures	71
a. Audit Procedure.....	71
b. Violation Procedure.....	72
4.2.2.3. Evaluation of Results	73
4.3. Paper Plates and Sanitary Paper Products.....	74
4.3.1. Test Equipment	74
4.3.2. Test Procedure.....	74
4.3.3. Evaluation of Results	75
4.4. Special Test Requirements for Packages Labeled by Linear or Square Measure (area).....	75

4.5. Polyethylene Sheeting	75
4.5.1. Test Equipment	76
4.5.2. Test Procedure.....	76
4.5.3. Evaluation of Results	80
a. Individual Thickness.....	80
b. Average Thickness	80
4.6. Packages Labeled by Linear or Square (area) Measure	80
4.6.1. Test Equipment	80
4.6.2. Test Procedure.....	81
4.6.3. Evaluation of Results	82
4.7. Baler Twine – Test Procedure for Length	82
4.7.1. Test Equipment	82
4.7.2. Test Procedure.....	83
4.7.3. Evaluation of Results	84
4.8. Procedure for Checking the Area Measurement of Chamois.....	84
4.8.1. Template Test Method (for field audits)	85
4.8.1.1. Test Equipment	85
4.8.1.2. Test Procedure.....	85
4.8.2. Gravimetric Procedure for Area Measurement.....	86
4.8.2.2. Test Procedure.....	87
4.8.3. Evaluation of Results	87
4.9. Procedure for Checking the Contents of Specific Agriculture Seed Packages Labeled by Count.....	88
4.9.1. Test Equipment	88
4.9.2. Test Procedure.....	88
4.9.3. Evaluation of Results	89
Appendix A. Tables.....	91
Table 1-1. Agencies Responsible for Package Regulations and Applicable Requirements	91
Table 2-1. Sampling Plans for Category A	93
Table 2-2. Sampling Plans for Category B	93
(for Use in USDA-Inspected Meat and Poultry Plants Only)	93
Table 2-3. Category A.....	94
Table 2-4. Category B	97
Table 2-5. Maximum Allowable Variations (MAVs) for Packages Labeled by Weight.....	98
Table 2-6. Maximum Allowable Variations for Packages Labeled by Liquid and Dry Volume.	100
Table 2-7. Maximum Allowable Variations (MAVs) for Packages Labeled by Count.....	103
Table 2-8. Maximum Allowable Variations for Packages Labeled by Length, (Width), or Area.	104

(For Textiles, Polyethylene Sheeting and Film – Use Table 2-10).....	104
Table 2-9. U.S. Department of Agriculture, Meat and Poultry Groups and Lower Limits for Individual Packages (Maximum Allowable Variations)	105
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.....	106
Table 2-11. Accuracy Requirements for Packages Labeled by Low Count (50 or Fewer) and Packages Given Tolerances (Glass and Stemware).....	107
Appendix B. Random Number Tables	109
Appendix C. Model Inspection Report Forms	117
Random Package Report.....	119
Random Package Report – Example.....	120
Standard Package Report	121
Standard Package Report – Example	122
Ice Glazed Package Report	125
Ice Glazed Package Report – Example	126
Appendix D. AOSA Rules for Testing Seeds	127
Appendix E. General Tables of Units of Measurement.....	133
Section 1. Tables of Metric Units of Measurement	133
Units of Length	133
Units of Area.....	133
Units of Liquid Volume	134
Units of Volume.....	134
Units of Mass.....	134
Section 2. Tables of U.S. Units of Measurement.....	135
Units of Length	135
Units of Area.....	135
Units of Volume ³	135
Gunter's or Surveyors Chain Units of Measurement.....	135
Units of Liquid Volume	136
Apothecaries Units of Liquid Volume	136
Units of Dry Volume	136
Avoirdupois Units of Mass	137
Troy Units of Mass	137
Apothecaries Units of Mass	137
Section 3. Notes on British Units of Measurement.....	138
Section 4. Tables of Units of Measurement.....	139
Units of Length – International Measure	139
Units of Length – Survey Measure ⁸	139

Units of Area – International Measure.....	140
Units of Area – Survey Measure.....	141
Units of Volume.....	141
Units of Capacity or Volume – Dry Volume Measure	142
Units of Capacity or Volume – Liquid Volume Measure	143
Units of Mass Not Less Than Avoirdupois Ounces.....	144
Units of Mass Not Greater Than Pounds and Kilograms.....	145
Section 5. Tables of Equivalents.....	146
Units of Length	146
Units of Area.....	148
Units of Capacity or Volume	148
Units of Mass	150
Appendix F. Glossary	153
Index.....	161
References.....	165