



## Module: 5.3.2

### Packages Labeled by Weight, Standard and Random

#### Overview and Scope

This module sets standards for basic inspection and testing for checking the net contents of packaged goods. The module is geared toward specific concepts that can be applied to checking random and standard packages labeled by weight, including concepts relating to the device technology, inspection considerations and requirements, and test procedures.

#### Prerequisites

5.3.1 Commodities - General

#### Learning Objectives

##### 1 Gravimetric Test Procedure for Checking the Net Contents of Packaged Goods

A weights & measures inspector should understand that gravimetric testing is used to determine the net weight of packages labeled by weight and be able to explain why it is the preferred method for testing most products.

- 1.1 Restate the different gravimetric methods used for testing packages labeled by weight.
- 1.2 Explain why gravimetric methods are generally preferred.

##### 2 Measurement Standards and Test Equipment

A weights & measures inspector should understand the criteria for selecting test equipment, and the procedures for verifying test equipment. To demonstrate this, the inspector can:

- 2.1 Calculate 1/6 MAV for any given package labeled by weight.
- 2.2 State how often and under what conditions a scale should be verified.
- 2.3 State what considerations affect measurement accuracy.
- 2.4 Utilize Table 2-1 and Table 2-2 to determine the tolerance which applies to the test scale.
- 2.5 Verify the test scale using the following procedures:
  - 2.5.1 Increasing Load Test.
  - 2.5.2 Shift Test.
  - 2.5.2 Decreasing Load Test.
- 2.6 Select other standards and measurement equipment in accordance with the requirements of NIST Handbook 105, including:

- 2.6.1 Mass standards.
- 2.6.2 Volumetric flasks and cylinders.
- 2.6.3 Stopwatches.
- 2.6.4 Thermometers.

### 3 Basic Test Procedure

A weights & measures inspector should understand the basic gravimetric test procedure. To demonstrate this, the inspector can:

- 3.1 Identify and define the inspection lot.
- 3.2 Determine whether the lot is random or standard pack.
- 3.3 Select the appropriate sampling plan.
- 3.4 Select the random sample.
- 3.5 Decide the appropriate type of tare to be used:
  - 3.5.1 Used dry tare.
  - 3.5.2 Unused dry tare.
  - 3.5.3 Wet tare.
- 3.6 Determine tare weight for the random sample.
- 3.7 Measure the net contents of the packages in the sample.
- 3.8 Evaluate compliance with the MAV requirement.
- 3.9 Evaluate compliance with the average requirement.
- 3.10 Calculate and apply moisture allowance when appropriate.

#### **Contributors:**

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