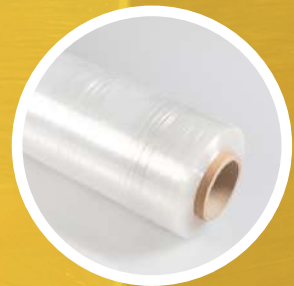




Machine Grade Packaging Tape



Hand Grade Packaging Tape



Hand Grade Pre-Stretched/ Stretch Film



Resin Raw Material



Machine Grade Stretch Film

# WBA CORPORATION BRANDING HANDBOOK

# GENERAL INFORMATION

## 1.2 Package Requirements

The net quantity of content statement must be “accurate,” but reasonable variations are permitted. Variations in package contents may be a result of deviations in filling. The limits for acceptable variations are based on current good manufacturing practices in the weighing, measuring, and packaging process.

The first requirement is that accuracy is applied to the average net contents of the packages in the lot. The second requirement is applied to negative errors in individual packages. These requirements apply simultaneously to the inspection of all lots of packages except as specified in Section 1.2.5. “Exceptions to the Average and Individual Package Requirements.”

### 1.2.1 Inspection Lot

An “inspection lot” 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 sample drawn from the lot.

### 1.2.2 Average Requirement

In general, the average net quantity of contents of packages in a lot must at least equal the net quantity of contents declared on the label. Plus or minus variations from the declared net weight, measure, or count are permitted when they are caused by unavoidable variations in weighing, measuring, or counting the contents of individual packages that occur in current good manufacturing practice.

Such variations must not be permitted to the extent that the average of the quantities in the packages of a particular commodity or a lot of the commodity that is kept, offered, exposed for sale, or sold, is below the stated quantity.



### 1.2.3 Individual Package Requirement

The variation of individual package contents from the labeled quantity must not be “unreasonably large.” Packages that are under filled by more than the Maximum Allowable Variation (MAV) specified for the package are considered unreasonable errors.

Unreasonable shortages are not generally permitted, even when overages in other packages in the same lot, shipment, or delivery compensate for such shortage.

### 1.2.4 Maximum Allowable Variation

The limit of the “reasonable minus variation” for an under filled package is called a “Maximum Allowable Variation” (MAV). An MAV is a deviation from the labeled weight, measure, or count of an individual package beyond which the deficiency is considered an unreasonable minus error. Each sampling plan limits the number of negative package errors permitted to be greater than the MAV. (Amended 2010)

### 1.2.5 Exceptions to the Average and Individual Package Requirements

There is an exemption from the average requirement for packages labeled by count with 50 items or fewer. The reason for this exemption is that the package count does not follow a “normal” distribution even if the package is designed to hold the maximum count indicated by the label declaration (e.g., egg cartons and packages of chewing gum).

Another exception permits an “allowable difference” in the capacity of glass tumblers and stemware because mold capacity doesn’t follow a normal distribution.



## 1.2.6 Deviation Caused by Moisture Loss or Gain

Deviations from the net quantity of contents caused by the loss or gain of moisture from the package are permitted when they are caused by ordinary and customary exposure to conditions that normally occur in good distribution practice and that unavoidably result in change of weight or measure.

According to regulations adopted by the U.S. Environmental Protection Agency, no moisture loss is recognized on pesticides. (See Code of Federal Regulations 40 CFR Part 156.10.)

# TEST PROCEDURES

## 4.5 Polyethylene Sheeting

Most polyethylene products are sold by length, width, thickness, area, and net weight. Accordingly, this procedure includes steps to test for each of these measurements.

### 4.5.1 Test Equipment

- A scale that meets the requirements in Section 2.2. "Measurement Standards and Test Equipment."

- Steel tapes and rules. Determine measurements of length to the nearest division of the appropriate tape or rule.

- o Metric Units: For labeled dimensions 40 cm or less, linear measure: 30 cm in length, 1 mm divisions; or a 1 m rule with 0.1 mm divisions, overall length tolerance of 0.4 mm. For labeled dimensions greater than 40 cm, 30 m tape with 1 mm divisions.

- o Inch-pound Units: For labeled dimensions 25 in or less, use a 36 in rule with 1 /64 in or 1 /100 in divisions and an overall length tolerance of 1 /64 in. For dimensions greater than 25 in, use a 100 ft tape with 1 /16 in division and an overall length tolerance of 0.1 in.

- Deadweight dial micrometer (or equal) equipped with a flat anvil, 6.35 mm or ( $\frac{1}{4}$  in) diameter or larger, and a 4.75 mm ( $\frac{3}{16}$  in) diameter flat surface on the head of the spindle.

The anvil and spindle head surfaces should be ground and lapped, parallel to within 0.002 mm (0.0001 in), and should move on an axis perpendicular to their surfaces. The dial spindle should be vertical, and the dial should be at least 50.8 mm (2 in) in diameter.

The dial indicator should be continuously graduated to read directly to 0.002 mm (0.0001 in) and should be capable of making more than one revolution. It must be equipped with a separate indicator to indicate the number of complete revolutions. The dial indicator mechanism should be fully jeweled.

The frame should be of sufficient rigidity that a load of 1.36 kg (3 lb) applied to the dial housing, exclusive of the weight or spindle presser foot, will not cause a change in indication on the dial of more than 0.02 mm (0.001 in).

The indicator reading must be repeatable to 0.001 2 mm (0.000 05 in) at zero. The mass of the probe head (total of anvil, weight 102 g or [3.6 oz], spindle, etc.) must be 113.4 g (4 oz).

The micrometer should be operated in an atmosphere free from drafts and fluctuating temperature and should be stabilized at ambient room temperature before use.

- Gage blocks covering the range of thicknesses to be tested should be used to check the accuracy of the micrometer
- T-square







#### 4.5.2 Test Procedure

1. Follow Section 2.3.1. "Define the Inspection Lot." Use a "Category A" sampling plan in the inspection; select a random sample.
2. Be sure the product is not mislabeled. Check the label declaration to confirm that all of the declared dimensions are consistent with the required standards. The declaration on sheeting, film, and bags shall be equal to or greater than the weight calculated by using the formulas below. Calculate the final value to four digits and declare to three digits dropping the final digit (e.g., if the calculated value is 2.078 lb, then the declared net weight is truncated to 2.07 lb).

3. Use the following formulas to compute a target net weight. The labeled weight should equal or exceed the target net weight or the package is not in compliance.

For SI (metric) dimensions:

Target Mass in Kilograms =  $(T \times A \times D) \div 1\,000$

Where: T = nominal thickness in centimeters

A = nominal length in centimeters  $\times$  nominal width (the nominal width for bags is twice the labeled width) in centimeters

D = minimum density in grams per cubic centimeter

For inch-pound dimensions:

Target Weight in Pounds =  $T \times A \times D \times 0.036\,13$

Where: T = nominal thickness in inches;

A = nominal area; that is the nominal length in inches  $\times$  nominal width (the nominal width for bags is twice the labeled width) in inches;

D = minimum density in grams per cubic centimeter; 0.036 13 is a factor for converting g /cm<sup>3</sup> to lb/in<sup>3</sup>.

4. Perform the calculations. If the product complies with the label declaration, go to Step 5.

5. Select packages for tare samples according to Section 2.3.5.1. "Determination of Tare Sample and Average Tare Weight."

**6.** Determine and record the gross weights of the initial tare sample.

**7.** Extend the product in the sample packages to their full dimensions and remove by hand all creases and folds.

**8.** Measure the length and width of the product to the closest 3 mm (1 /8 in). Make all measurements at intervals uniformly distributed along the length and width of the sample and record the results. Compute the average length and width, and record.

- With rolls of product, measure the length of the roll at three points along the width of each roll and measure the width at a minimum of 10 points along the length of each roll.

- For folded products, such as drop cloths or tarpaulins, make three length measurements along the width of the sample and three width measurements along the length of the sample.

**9.** Determine and record the average tare weight according to Section 2.3.5.1. "Determination of Tare Sample and Average Tare Weight".

**10.** Follow the procedures in Section 2.3.7. "Evaluate for Compliance" to determine the lot conformance requirements for length, width, and weight.

**11.** If the sample failed to meet the package requirements for any of these declarations, no further measurements are necessary. The lot fails to conform.

**12.** Measure the thickness of the plastic sheet with a micrometer using the following guide. Place the micrometer on a solid level surface. If the dial does not read zero with nothing between the anvil and the spindle head, set it at zero. Raise and lower the spindle head or probe several times; it should indicate zero each time. If it does not, find and correct the cause before proceeding.







**13.** Take measurements at five uniformly distributed locations across the width at each end and five locations along each side of each roll in the sample. If this is not possible, take measurements at five uniformly distributed locations across the width of the product for each package in the sample

**14.** When measuring the thickness, place the sample between the micrometer surfaces and lower the spindle head or probe near, but outside, the area where the measurement will be made. Raise the spindle head or probe a distance of 0.008 mm to 0.01 mm (0.000 3 in to 0.000 4 in) and move the sheet to the measurement position. Drop the spindle head onto the test area of the sheet.

**15.** Read the dial thickness two seconds or more after the drop, or when the dial hand or digital readout becomes stationary. This procedure minimizes small errors that may occur when the spindle head or probe is lowered slowly onto the test area.

**16.** For succeeding measurements, raise the spindle head 0.008 mm to 0.01 mm (0.000 3 in to 0.000 4 in) above the rest position on the test surface, move to the next measurement location, and drop the spindle head onto the test area. Do not raise the spindle head more than 0.01 mm (0.000 4 in) above its rest position on the test area. Take measurements at least 6 mm (¼ in) or more from the edge of the sheet.

**17.** Repeat Steps 12 through 16 above on the remaining packages in the sample and record all thickness measurements. Compute and record the average thickness for the individual package and apply the following MAV requirements.

### **4.5.3 Evaluation of Results**

#### **A. Individual Thickness**

- On polyethylene with a declared thickness greater than 25  $\mu\text{m}$  (1 mil or 0.001 in): an individual thickness measured may be up to 20 % less than the declared thickness.



- On polyethylene with labeled thickness less than or equal to 25  $\mu\text{m}$  (1 mil or 0.001 in), individual thickness measurements may be up to 35 % below the labeled thickness.

Count the number of values that are smaller than specified MAVs ( $0.8 \times$  labeled thickness if 25  $\mu\text{m}$  [1 mil] or greater or  $0.65 \times$  labeled thickness, if less than 25  $\mu\text{m}$  [1 mil]). If the number of values that fail to meet the thickness requirement exceeds the number of MAVs permitted for the sample size, the lot fails to conform to requirements. No further testing of the lot is necessary. If the number of MAVs for thickness measurements is less than or equal to the number permitted for the sample size, go on to Evaluation of Results – Average Thickness.

## **B. Average Thickness**

The average thickness for any single package should be at least 96 % of the labeled thickness. This is an MAV of 4 % (refer to Appendix A, Table 2-10. Exceptions to the MAVs 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.)

Circle and count the number of package average thickness values that are smaller than  $0.96 \times$  labeled thickness. If the number of package average thicknesses circled exceeds the number of MAVs permitted for the sample size, the lot fails to conform to requirements.

No further testing of the lot is necessary. If the number of MAVs for package average thickness is less than or equal to the number of MAVs permitted for the sample size, proceed to Section 2.3.7. “Evaluate for Compliance” to determine if the lot meets the package requirements for average thickness.





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