



GDSN Package Measurement Rules

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Log of Changes in Issue 1.4

Issue No.	Date of Change	Changed By	Summary of Change
1	Aug-2006	Zexia Huang	Initial Version
2	Sep-2006	Justin Childs	Added Package Measurement Tolerances
4	Sep-2006	Maria Victoria Caro	<p>Added the Change Request approved by BarCodes & Identification BRG that affected the Section 6. 8 within General Specifications:</p> <ul style="list-style-type: none"> ■ CR 05-000212: Definition of Consumer Trade Item versus Non-Consumer Trade Item. ■ CR 05-000375: Clarify Unit Of Measure ■ CR 06-000083: Clarify Non Consumer Trade item/ determining the Base

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1. Preface

This document establishes rules for the global, unambiguous definition of nominal measurement attributes of product packaging to facilitate communication of the same for retail and non-retail products from the consumer unit to the case level and all intermediate packaging levels in between. This standard provides a repeatable process to determine measurements for a given product package when measured by different individuals independently. **These rules will be independent of shelf orientation for the product.** Any, more restrictive, local regulations governing the measurement of either weight or dimensions take precedence over these specifications.

When a new Global Trade Item Number™ (GTIN™) is assigned to a trade item, it is essential that the party allocating the number, normally the manufacturer, provide detailed information to trading partners about the characteristics of the new trade item. This information should be provided as soon as possible before the product is actually traded and should include details such as brand name, net weight, packaging materials, etc, and package measurements.

2. Introduction

The accurate and consistent dimensional measurement of trade item packaging is key to the successful implementation of Data Synchronisation between trading partners. These rules are provided for use for all trading partners wishing to exchange data about product package measurements. This common methodology for determining product package measurements is intended to ensure global compatibility. . Suppliers may use any valid unit of measure (UOM) and it is up to their trading partners to convert the UOM between increments within a measurement system (e.g. millimetres versus centimetres, pounds versus ounces, or inches versus feet). For imperial and metric, suppliers should provide the measurement system that is required in a specific target market.

3. Metric and Imperial Dimensions

GDSN allows up to three decimal places for population of dimensions, but the level of precision is left to the discretion of the supplier. The following rounding rules have been established as the minimal level of precision required.

3.1. Linear Measurements

For linear dimensions, all measurements are rounded up, . decimal placement is specified as:

Millimetres always rounded up to a whole millimetre. For example 99.3 mm would become 100 mm.

Inches are always rounded up to the nearest 0.05 of an inch. For example, 2.942 inches would become 2.95 inches.

When exchanging data between trading partners using differing systems the following conversion ratios must be used with the converted measure being rounded up:

- 1 inch = 25.4 mm
- 1 mm = 0.03937 inches

3.2. Weight Measurement

GDSN allows up to three decimal places for population of dimensions, but the level of precision is left to the discretion of the supplier and to applicable local laws. If rounding is required, all weight measurements are to be rounded up to match that level of determined precision.

Conversions are made using the following conversion ratios:

- 1.000 Pound (avoirdupois) = 0.454 Kilograms
- 1.000 Kilogram = 2.205 Pounds (avoirdupois)

4. Consumer (End-user) Trade Items

4.1. Overview

Consumer trade items are identified with a GTIN.

For the retail channel, these items to be measured as Consumer Trade Items will fulfill these three criteria:

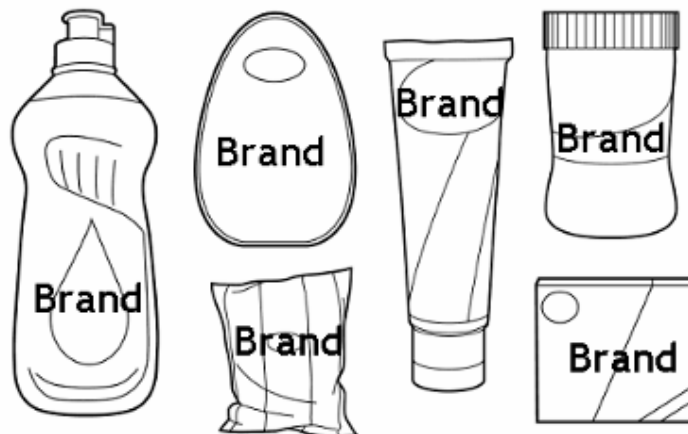
- They are meant to pass through Point of Sale
- They have a Default Front
- If the item is bar coded, it will be marked according to the Symbol Specification Tables for Retail Items (per section 5.4.2.7.1)

If a Consumer Trade Item is also traded as a Logistics trade item, it still needs to be viewed as a Consumer Trade Item and measured accordingly

4.2. Determining the Default Front of an Item

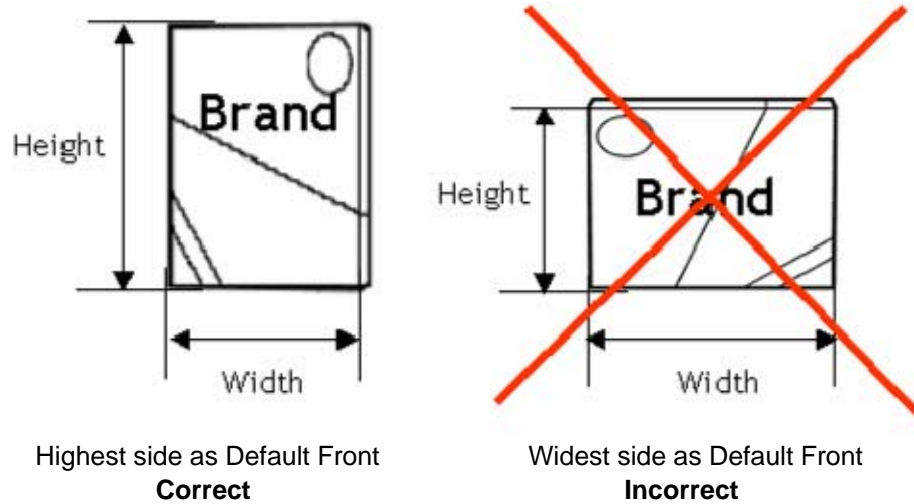
Prior to any measurement capture, the Default Front of the trade item must be determined. For the purposes of this standard, the Default Front is the side with the largest surface area that is used by the manufacturer to 'sell' the product to the consumer, in other words, the side with markings such as the product name.

Figure 4-1 Determining the Default Front of an Item



Some product packages have more than one possible front with the same surface area. These products can be presented both vertically and horizontally on the shelves. If a product package has more than one possible front, the highest side is considered to be the Default Front.

Figure 4-2 Determining Default Front of an Item with More than One Front with the Same Surface Area



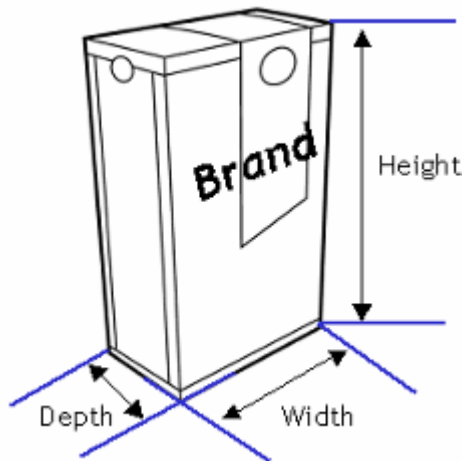
4.3. Determining the Height, Width and Depth

After the Default Front has been determined, it is possible to determine the height, width and depth of an item.

While facing the Default Front:

- Height: from the base to the top
- Width: from the left to the right
- Depth: from the front to the back

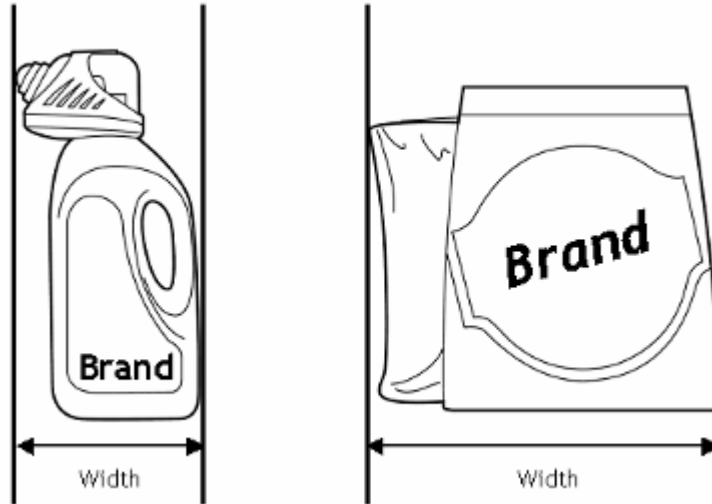
Figure 4-3 Height, Width and Depth of an Item



After the height, width and depth have been determined, the dimensions can be measured.

Always measure the maximum distance, i.e. include things such as projections, caps, lids and complimentary products (e.g., on-packs, collectables, or samples) in the measurement.

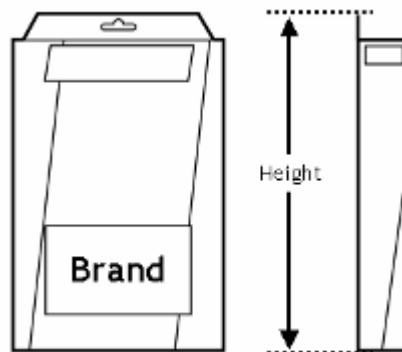
Figure 4-4 Always Measure the Maximum Distance



4.4. Hanging-Item

A Hanging-Item is any consumer trade item that is presented on a hanger. If the Hanging-Item has a hole for hanging purposes, it must be measured as though it were hanging. Even if it is presented horizontally or stacked, the measurements should be determined while it is hanging. The requirement to always measure the maximum distance also applies to Hanging-Items (inclusive of the tab).

Figure 4-5 Always Measure Hanging Items in the Hanging Position



If a consumer trade item has flexible packaging with a peg hole for hanging purposes, it must be measured as though it was hanging. In this case, the item should be measured from edge to edge (both sealed seams should be included in the measurement).

Flexible packaging, such as a bag of potato chips (crisps), must be measured with the item lying flat to evenly settle the contents. It is important to remember that Default Front determination is independent of shelf orientation. The measurements are taken while facing the trade item's Default Front. The sealed seams at the ends of the item must **not** be measured unless there is a peg hole or unless the seal is intended to serve as a base (e.g., allow a drink container to stand).

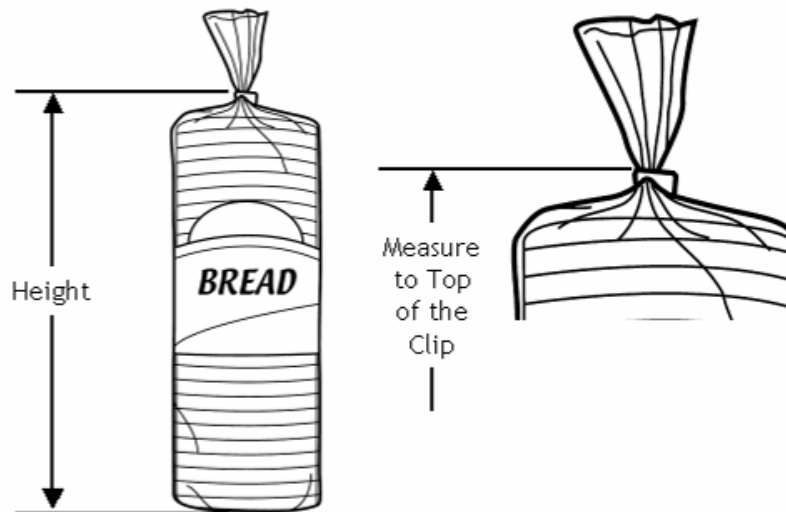
Figure 4-6 Examples of Hanging-Items with Flexible Packaging



4.5. Flexible Packaging with Clips

For items with a clip, the height is the distance from the bottom of the bag to the top of the clip.

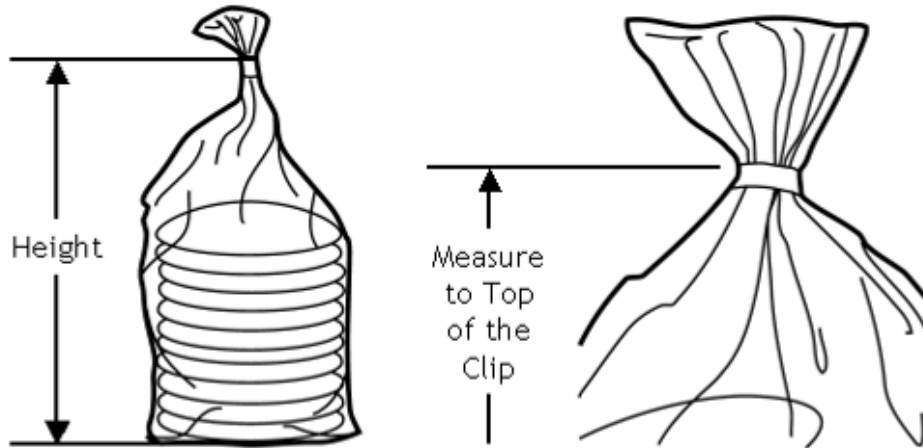
Figure 4-7 Dimensions of Items with Clips



4.6. Flexible Packaging with No Marking

For trade items sold in clear bags with no markings, the largest panel by area is the Default Front and the longest dimension is the height.

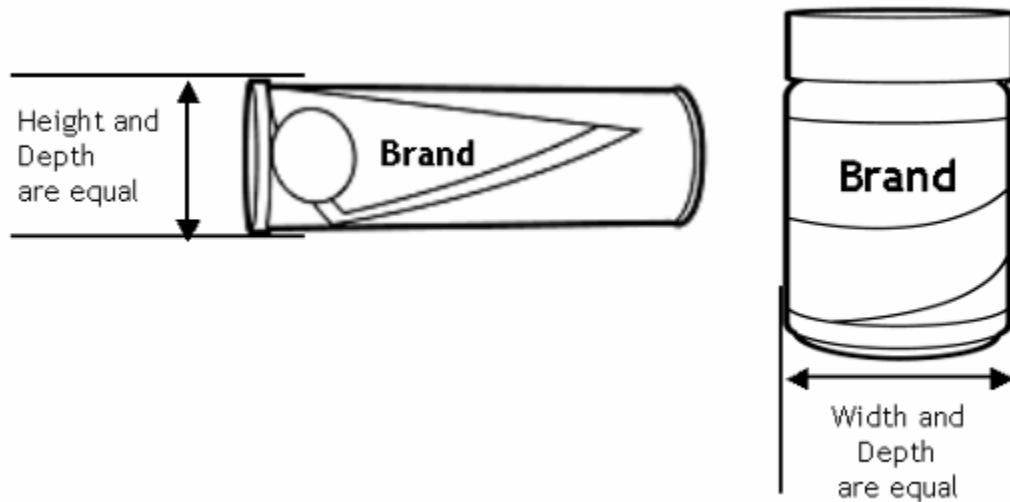
Figure 4-8 Dimensions of Items with No Marking



4.7. Cylindrical Items

For cylindrical items two dimensions will be nominally equal. Which dimensions are equal is determined by the result of determination of the Default Front for the consumer trade item.

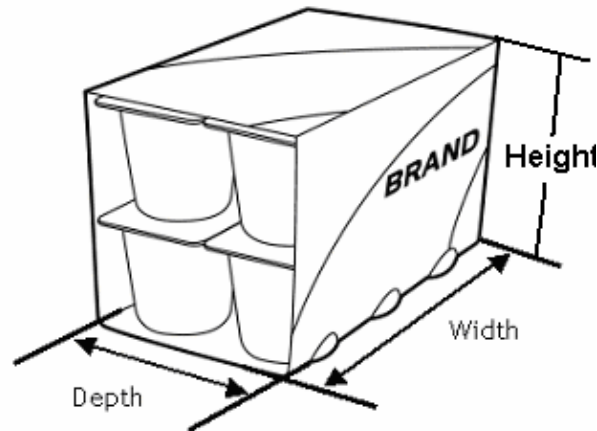
Figure 4-9 Cylindrical Item Measurements



4.8. Multi-packs

Multi-packs are consumer trade items themselves but contain a multiple of single trade items that can also be sold individually to the consumer. When a trade item meets the definition of a multi-pack it will be measured according to the Default Front rule in Section 4.2, [Determining the Default Front of an Item](#). If a multi-pack can be hung, it must be measured according to the rule for hanging items (see Section 4.4, [Hanging-Item](#)).

Figure 4-10 Determine the Default Front of a Multi-pack



5. Non-consumer Trade Item

5.1. Overview

These trade items are identified with a GTIN and are intended for General Distribution scanning. This includes outer cases up to the largest form of bulk packaging for trade items and may include pallets or units such as sea containers if they are explicitly traded. **The orientation of a Non-Consumer Trade Item to determine dimensions will not be dependant on how it is shipped.** If the trade item could be considered as a consumer trade item, the requirements in Section 4, [Consumer \(End-user\) Trade Items](#) take precedence. Take note that for Non-Consumer Trade Items, the terms Depth and Length may be used interchangeably

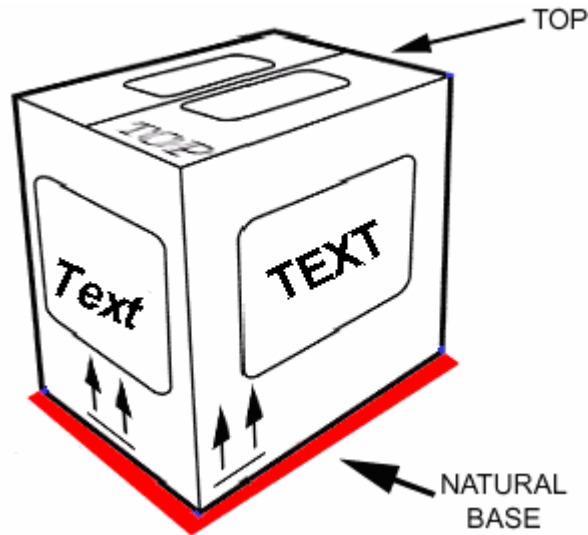
5.2. Determining the Base

First, the Natural Base of the non-consumer trade item must be identified before the height, width and depth of the non-consumer trade item can be determined. The Natural Base is the natural underside of the packaged item pre-shipment (e.g. case). The Natural Base is a Supplier defined surface.

For consistency in measuring:

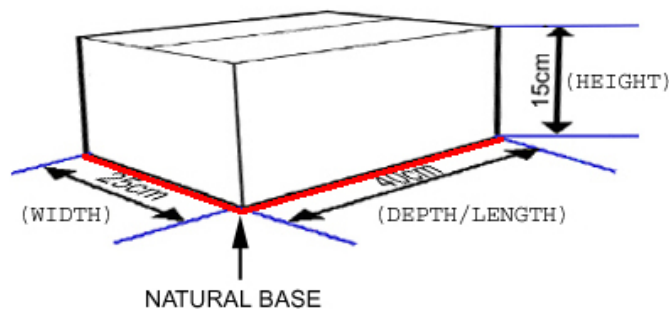
- Determine if case markings point to natural base orientation. If text, arrows or other graphics printed on the item may indicate a top or bottom orientation, they take precedence in determining the Natural Base.

Figure 5-1 Natural Base - Top



- When there are no case markings and the Natural Base is not readily apparent, then Width and Depth/Length define the Natural Base and the measurement of a Non-Consumer Trade Item is as follows:
 1. Height is the shortest dimension
 2. Width is the next longest dimension
 3. Depth/Length is the longest dimension
- When measuring a trade item the maximum measure should be recorded for any given dimension.

Figure 5-2 Natural Base - Width and Depth/Length

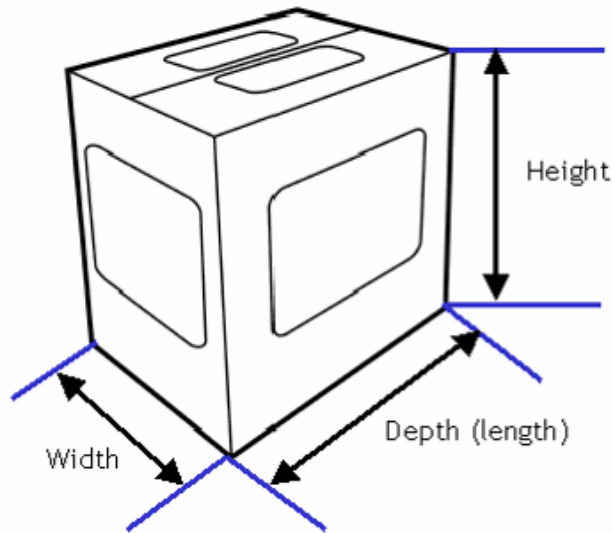


5.3. Determining the Height, Width and Depth

After the Natural Base has been determined, it is possible to determine the height, width and depth of an item:

- **Height:** The measure of the trade item from the natural base to the top.
- **Width:** The shorter side of the natural base of the trade item.
- **Depth (*length):** The longer side of the natural base of the trade item.

Figure 5-3 Dimensions of Non-Consumer Trade Items (Outer Case)



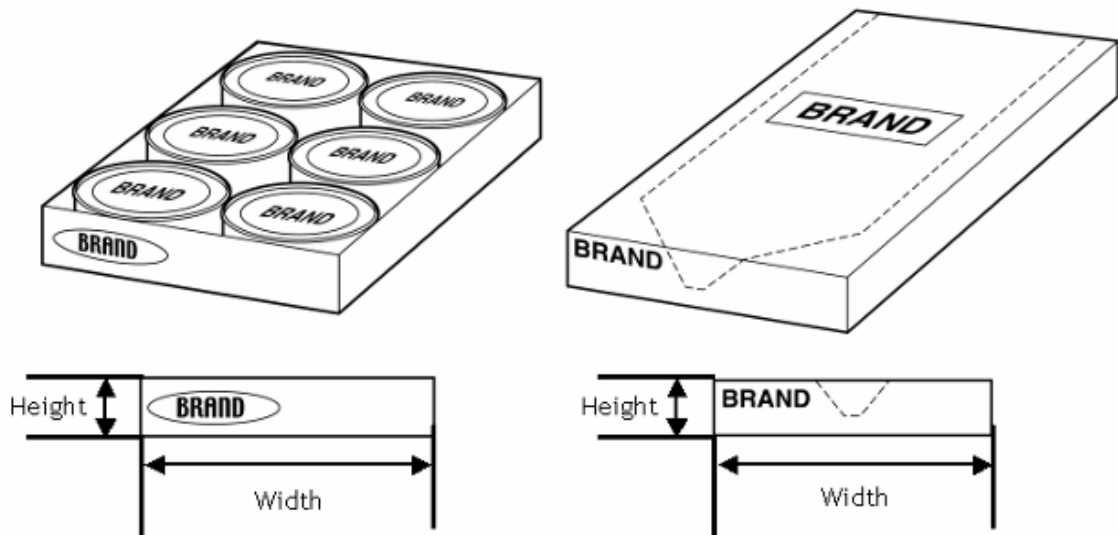
It is important that the measurement of non-consumer trade items is done in a free and unrestricted manner (e.g., not in a stack). The item being measured must also be in good condition and not damaged (e.g., damp, torn).

The Natural Base rule is used to measure display boxes. This rule is independent of whether the display box has an open top or a tear-away top.

Figure 5-4 Dimensions of Non-Consumer Trade Items (Display Box)

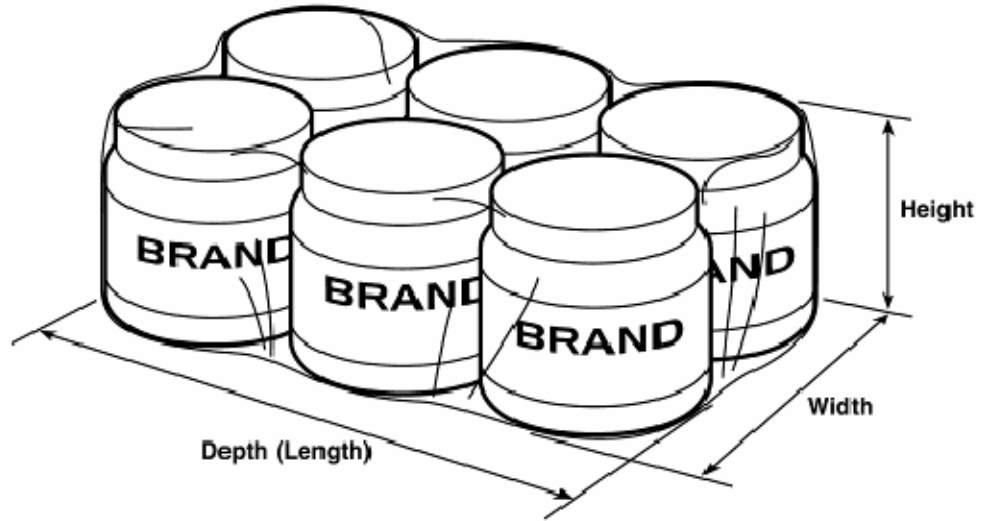
Open Top Display Box

Tear-Away Display Box



The Natural Base rule is used to measure shrink-packs.

Figure 5-5 Dimensions of Non-Consumer Trade Items (Shrink-pack)



The Natural Base rule is used to measure tray-packs.

Figure 5-6 Dimensions of Non-Consumer Trade Items (Tray-packs)

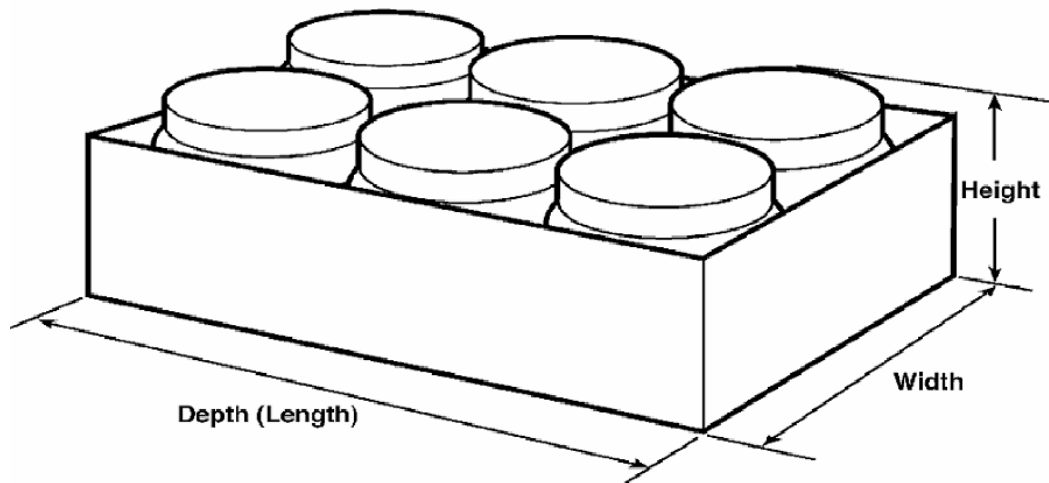
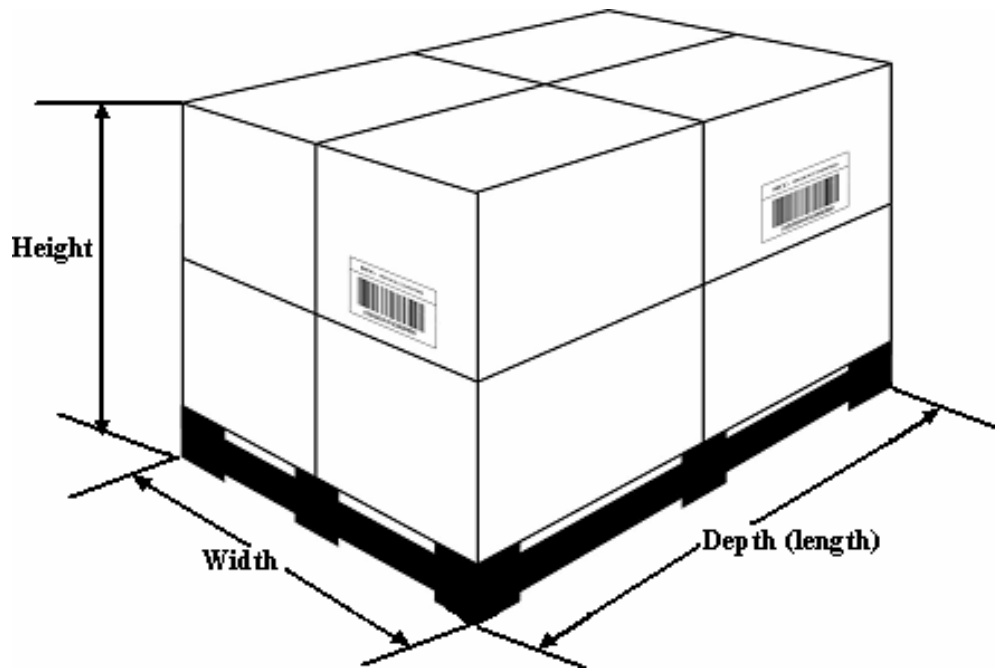


Figure 5-7 Dimensions of Non-Consumer Trade Items



6. Standards Tolerances for Data Accuracy

(Effective Date August 31, 2006)

6.1. Overview

Physical products identified by the same GTIN have inherent variability in gross weights and linear dimensions due to manufacturing processes, handling methods, environment and other factors. Standard tolerances are defined as allowable variations between the STATED (synchronized) and MEASURED (actual) gross weights and linear dimensions of a GTIN. Any, more restrictive, local regulations governing the measurement of either weight or dimensions take precedence over these specifications. Acceptable standard tolerances are defined in the tables below (Tolerances for Non Consumer Trade items and Consumer Trade items have been separated into distinct tables):

6.2. Standard Tolerances for Non Consumer Trade Items

Table 6-1 Standard Tolerances for Non-Consumer Trade Items (e.g., Case Unit)

Outer Package Type	Inner Package type	Description	Examples	Dimension	Tolerance (+/-)
Corrugated Case	Cardboard or pressboard box	Full enclosed corrugated case containing cartons or boxes	Cereal, Games, Puzzles, Mac & Cheese, Facial Tissue, Dog Treats, <i>Does not include: Card items</i>	Depth/Length Width Height Gross Weight	4.0% 4.0% 4.0% 4.0%
Corrugated Case	Metal Cans or Glass jars/ bottles	Full enclosed corrugated case containing cans or glass jars	Vegetables, Fruit, Aerosol, Cat & Dog Food, Steak Sauce, and Condiments	Depth/Length Width Height Gross Weight	4.0% 4.0% 4.0% 4.0%
Corrugated Case	Rigid Plastic Containers	Full enclosed corrugated case containing rigid plastic containers	Shampoo, Laundry Detergent, Clam Shells, Baby Wipes, Salad Dressing, Water, Mayo, Ketchup, Beverages, Soups, Beans, Dog Treats, Dish Detergent, Cleaning Products	Depth/Length Width Height Gross Weight	4.0% 4.0% 4.0% 4.0%
Plastic Overwrap	Metal Cans or Glass jars/ bottles	Tray or non-tray product with plastic overwrap containing cans, or glass jars	Water, Salad Dressing, Mayo, Ketchup, Beverages, Soups, Beans, Dish Detergent, and Cleaning Products	Depth/Length Width Height Gross Weight	4.0% 4.0% 4.0% 4.0%
Plastic Overwrap	Rigid Plastic Containers	Tray or non-tray product with plastic overwrap containing rigid plastic containers	Vegetables, Fruit, Aerosol, Cat & Dog Food	Depth/Length Width Height Gross Weight	4.0% 4.0% 4.0% 4.0%

6.3. Standard Tolerances for Consumer Trade Items

Table 6-2 Standard Tolerances for Consumer Trade Items (e.g., Shelf Unit)

Package Type	Description	Examples	Dimension	Tolerance (+/-)
Carton	Full carton or cardboard box	Cereal, Games, Puzzles, Mac & Cheese, Facial Tissue, Dog Treats	Depth	0.25 in (7mm)
			Width	0.25 in (7mm)
			Height	0.25 in (7mm)
Can or Glass	Can or Glass container, completely rigid	Vegetables, Fruit, Aerosol, Cat & Dog Food, Steak Sauce, Condiments, Coffee	Depth	0.25 in (7mm)
			Width	0.25 in (7mm)
			Height	0.25 in (7mm)
Plastic Container	Rigid bottle or plastic container, no flexibility	Water, Salad Dressing, Mayo, Ketchup, Beverages, Soups, Beans, Detergent, Clam Shells, Baby Wipes, Cleaning Products	Depth	0.25 in (7mm)
			Width	0.25 in (7mm)
			Height	0.25 in (7mm)

Notes:

- Refer to the *Best Practice Guidelines for Implementing Tolerances* for more information regarding data accuracy guidelines and implementation of tolerances.
- Soft paper products in flexible packaging at the consumer and case level are excluded from the above packaging types.
- Frozen categories are excluded from the above packaging types.
- The proposed standard tolerances are not intended to replace parameters within the *GTIN Allocation Rules*, which identify when a new GTIN must be assigned.
- The dimensions and weight tolerances apply only to fixed measure products. Tolerances are not practical for variable measure products (e.g., variable weight products, etc.)