GS1 Australia

GS1 New Zealand

ECR Efficient Consumer Response AUSTRALASIA

Accurate Product Measurement – Item and Trade Units

within the Australian and New Zealand Food and Grocery Industry.

Welcome to Your Global Trading Community

GS1

GS1 is the leading global organisation dedicated to the design and implementation of global standards and solutions to improve efficiency and visibility in the supply and demand chains globally and across sectors. The GS1 system of standards is the most widely used supply chain standards system in the world.

- GS1 is a fully integrated global organisation with over 30 years experience in global standards.
- GS1 offers a range of products, services and solutions to fundamentally improve efficiency and visibility of supply and demand chains.
- GS1 operates in multiple sectors and industries.

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ECR Australasia

Efficient Consumer Response (ECR) is a business concept aimed at better satisfying consumer needs, through businesses and trading partners working together. ECR Australasia (ECRA) reflects a commitment to take costs out of the grocery supply chain and better satisfy consumer demands through the adoption of world's best practice. ECRA is an initiative of manufacturers, retailers and wholesalers in the Australian and New Zealand food and grocery industry and is supported by the respective industry associations.

In an increasingly global food and grocery industry and a retail environment subject to rapid change, the future for Australian and New Zealand suppliers, retailers and wholesalers depends on increased efficiencies, reduced costs and added value for consumers. Influences such as global data standards, including dimensioning data, within the end-to-end global supply chain will facilitate reduced costs, improved production and accelerate product speed to market.

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Contents

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Product group from well-managed forests, and other controlled sources
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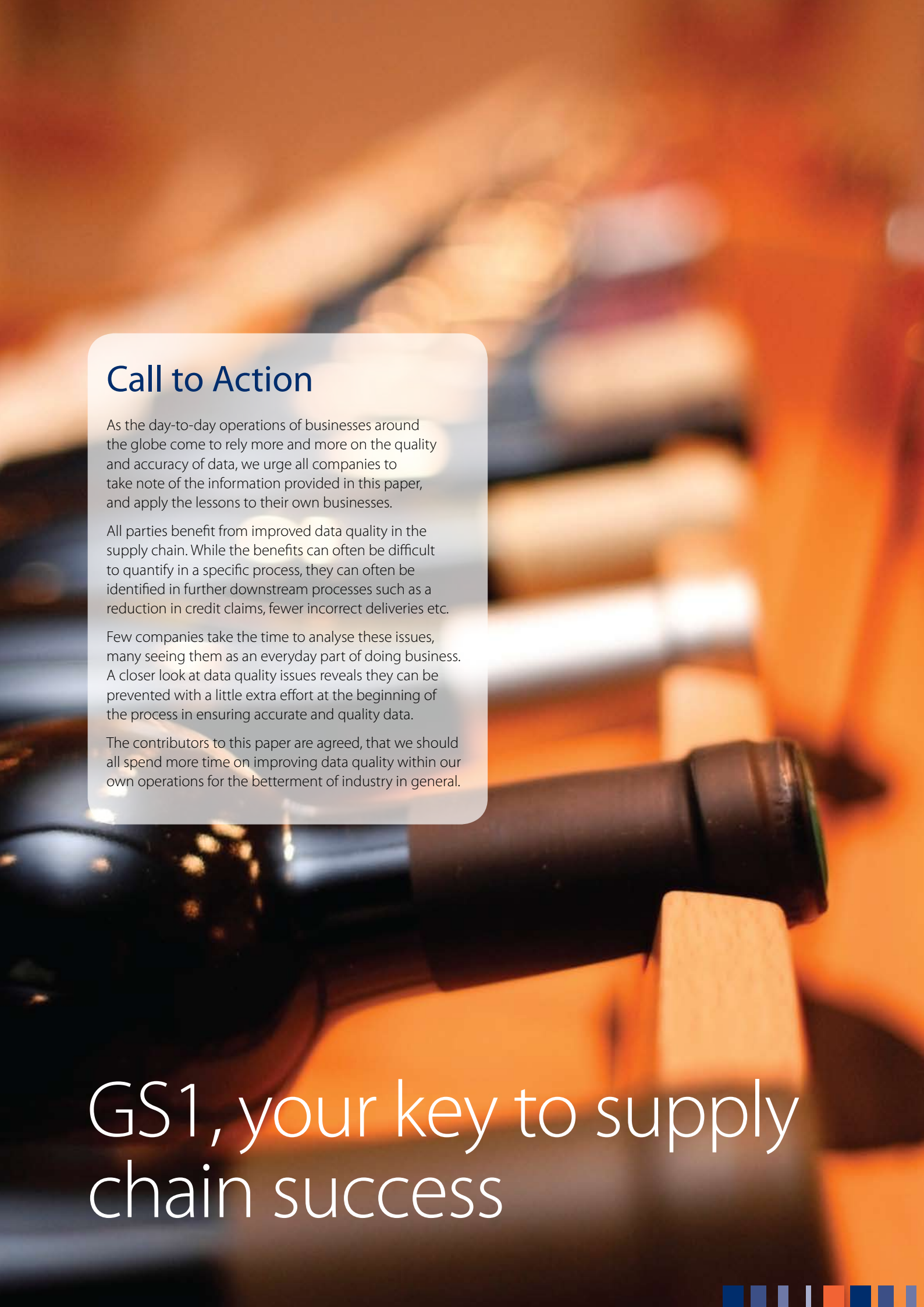


Call to Action

As the day-to-day operations of businesses around the globe come to rely more and more on the quality and accuracy of data, we urge all companies to take note of the information provided in this paper, and apply the lessons to their own businesses.

All parties benefit from improved data quality in the supply chain. While the benefits can often be difficult to quantify in a specific process, they can often be identified in further downstream processes such as a reduction in credit claims, fewer incorrect deliveries etc.

Few companies take the time to analyse these issues, many seeing them as an everyday part of doing business. A closer look at data quality issues reveals they can be prevented with a little extra effort at the beginning of the process in ensuring accurate and quality data.

The contributors to this paper are agreed, that we should all spend more time on improving data quality within our own operations for the betterment of industry in general.

GS1, your key to supply chain success

Introduction

Data quality including dimensioning data is a shared responsibility between trading partners.

- Suppliers must have robust repeatable procedures for the creation of data
- Retailers must have procedures to ensure the integrity of the data communicated by trading partners.

"Good quality data is foundational to collaborative commerce. Good quality data means that all master data is complete, consistent, accurate, time stamped and industry standards based. By improving the quality of data within the end-to-end global supply chain, trading partners will reduce costs, improve production and accelerate product speed to market."

Data Quality Framework V2 January 2008

" Good quality data is the first step towards great on shelf availability. "

Unilever

" Nestle are strongly committed to the global standards governing data quality and dimensioning to provide accurate data to our trading partners, which allows all buyers and sellers to speak a common language. The implementation of these standards in the organisation is our responsibility that cannot be devolved. "

Nestle

Purpose

The purpose of this manual is to share with the food and grocery industry the importance of accurate item and trade unit (carton) measurements and the ongoing maintenance of this data in master data files.

These recommendations are based on the work of approximately 15 companies that comprised the Dimensioning Working Group, supported by GS1 Australia, GS1 New Zealand and Efficient Consumer Response Australasia (ECRA).

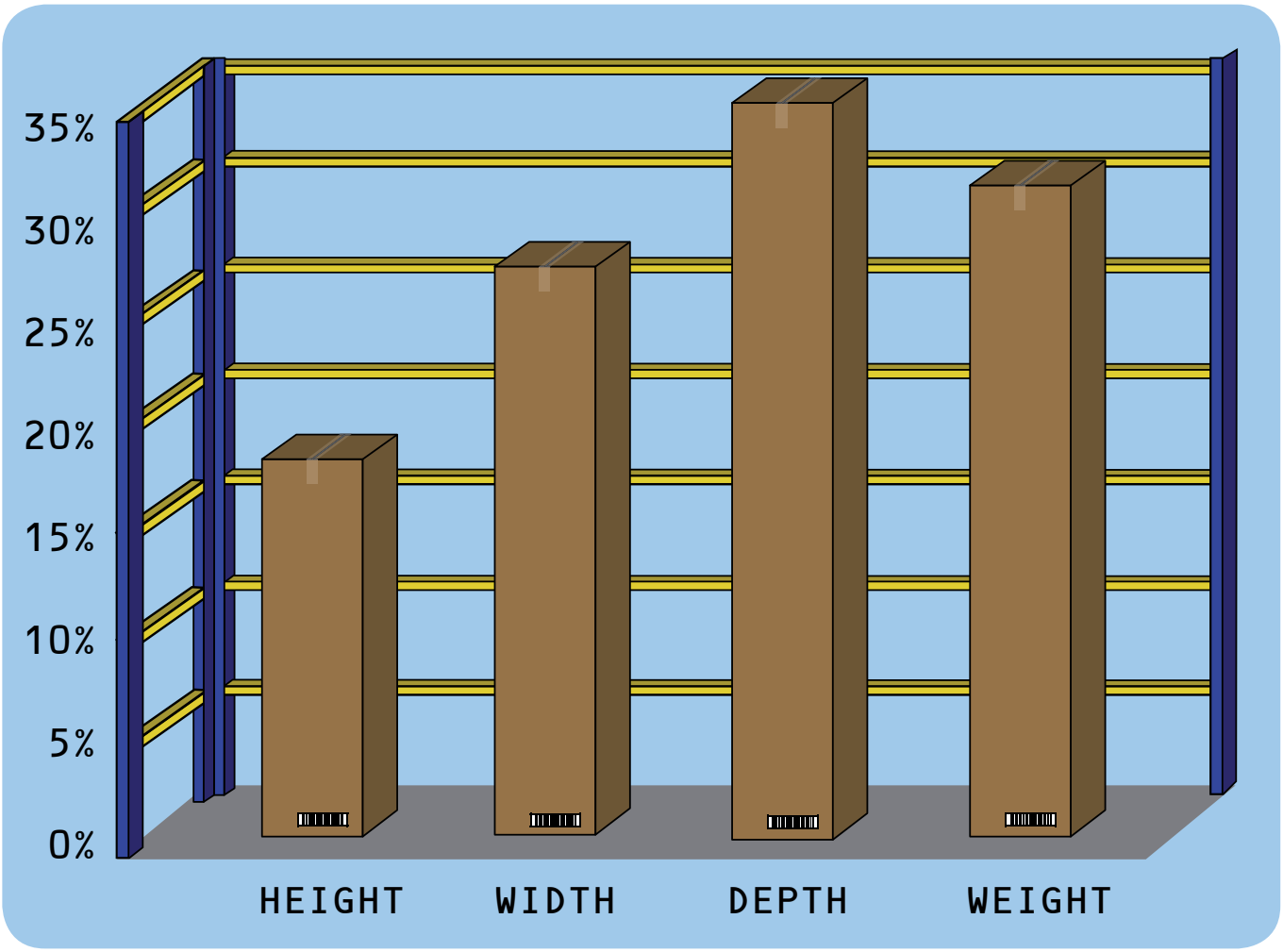
The focus on accurate dimensioning is in direct response to feedback from Australian and New Zealand retailers and suppliers on the impact of poor dimensioning data within their organisations. The Australasian activities in this area are predicated by global retailer and supplier organisations progressing dimensioning projects resulting in significant organisational and industry savings from accurate dimensioning data.

It is important to note that the tolerances referred to in this document do not replace the need for trading partners to have the most accurate information available in order to minimise disruptions. Prompt data changes are strongly recommended any time a product is changed, regardless of the changes.

Industry Audit Results

The Australian and New Zealand food and grocery industries conducted a number of audits of non consumer level trade items throughout 2007. The majority of audits were completed at distribution centres, both supplier and retailer controlled, for a wide range of product categories.

- **An 18% error rate at carton level equates to 352 million cartons per year with incorrect carton dimensions moving through the supply chain.**
- **A 30% error rate at item level against master data dimensions results in 3.9 billion items per year having incorrect dimensioning data.**
- **A 31% error rate at carton level in weight accuracy results in 606 million cartons per year having incorrect weight data.**



Cost to Industry of Poor Measurement

In 2004 ECRA identified a direct benefit to the Australasian grocery industry through the implementation of data integrity and synchronisation to exceed AUD$70M per annum; however the real driver for data integrity and synchronisation is to build a robust foundation for effective, efficient, sustainable and scalable industry collaboration.

The full potential for accurate data measurement is not being realised.

Inaccurate data measurement results in unnecessary costs along the supply chain including the areas of:

- transportation under / over utilisation,
- storage under / over utilisation,
- planogram errors,
- material handling equipment problems,
- capacity constraints,
- duplication of measurement along the supply chain,
- product rejection, and
- record maintenance.

The cost to the food and grocery industry is difficult to quantify as the majority of the impacts of poor dimensioning are not recorded accurately and vary between retailers. The cost to the supplier is even more difficult to quantify.

However, based on feedback from working group members we can provide an industry estimate of the cost of poor dimensioning.

The cost to the Australian and New Zealand industry for poor dimensioning data on an annual basis is AUD$2.3M.

Retailers often measure supplier items on receipt at distribution centres and identify different dimensions and weights than those provided by the supplier. Supplier data is often overridden in the retailers system and puts the retailer supplier out of synchronisation.

Product dimensions are the vital building blocks of maintaining an efficient and optimised supply chain. Without accurate dimensions the very foundation of core decision making is compromised potentially impacting on costs and safety. The industry - retailers and trading partners alike - needs to commit to delivering accurate product data in order to achieve the best outcomes for the whole supply chain.

Woolworths

Measurement Rules

This section is intended to provide guidance, and recommend measuring devices that may be used to obtain dimensional and weight attributes in support data accuracy. While trading partners are entitled to use any tools that fits their business model in order to meet the standard tolerances, digital technology is generally considered the most accurate means of measuring.

- Consider the type of products that will be measured
- Consider the degree of accuracy required
- Consider the tools to be used in the measurement process.

Further information is available in the GDSN Package Measurement Rules, GS1 Standard Document Issue 1.8.1 03 Mar 2008. This document establishes the rules for the global, unambiguous definitions of nominal measurement attributes of product packaging to facilitate communication of the same for retail and not retail products from the consumer unit to the case level and all intermediate packaging levels in between.

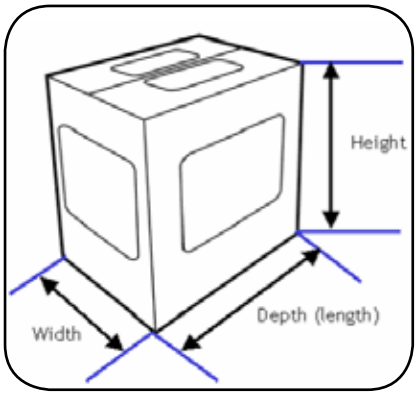
Definitions

The three key measurements of a product or box (the dimensions) and the order in which those dimensions are provided are very important. The following provides an outline for correctly measuring your item.

Trade Units (non-consumer)

First determine the base or natural underside of the unit.

- Height is then the measurement from the natural base to the top of the item.
- Width is the shorter side of the base
- Depth is the longer side of the base



All dimensions should be recorded in millimetres.

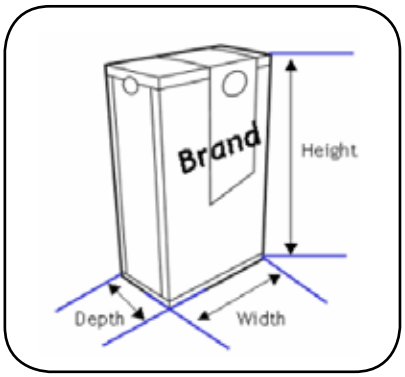
There are extra rules and considerations for display boxes, shrink packs, tray packs and other variations. You should refer to the GDSN Package Measurement Rules for further details on these variations.

Consumer Units

Determine the default front of the item.

- Height is from the base to the top of the item
- Width is from the left to the right
- Depth is from the front to the back

Once again, dimensions are recorded in millimetres.



Obviously there are many more shapes and varieties of consumer units including hanging items, flexible packaging, bags, pouches, cylindrical items, apparel and an unlimited range of general merchandise. Further information and measurement guidelines can be found in the GDSN Package Measurement Rules.

Tools and Calibration

Many types and brands of measuring equipment are available to support accurate measurement data.

It is the organisations responsibility to make sure that all equipment provided and used for data gathering is well maintained and calibrated.

- Measurement equipment should be certified against measurement standards traceable to national or international measurement standards at least annually.
- Measurement equipment should be identified to enable the calibration status to be maintained.

A 31% error rate at carton level in weight accuracy results in 606 million cartons per year having incorrect weight data.

Measurement Procedures

While performing measurement of consumer or non consumer trade items it is appropriate to utilise a sample size that enables some degree of normalisation of the measurements. Multiple samples will help to reduce the errors caused by equipment, inconsistency techniques or product abnormalities.

Considerations include:

- Measurement Environment Preparation
- Measurement Procedures
- Non consumer trade items
- Consumer trade items
- Recording Results

Standard Tolerances

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 and MEASURED dimensions.

Standard tolerances have been established by the working group for both non consumer trade items and consumer trade items. These allow trading partners to utilise one consistent agreed upon definition of data accuracy for data used within their supply chains.

The benefits of using tolerances are as follows:

- Standard tolerances provide the opportunity for each trading partner to assess their internal process, ensure that accurate data is being generated and maintained and ensure the effective application of tolerances in downstream systems.
- Standard tolerances will facilitate data accuracy; which is a business necessity for superior trading partner execution in areas such as logistics, distribution and manufacturing, store operations, administration of new product introductions and customer service.
- Accurate and synchronised product dimensions enable truck and warehouse optimisation, increased productivity, improved speed to shelf and enhanced customer service.
- Accurate data will lead the way for the next generation of business process innovations.

The following table defines the tolerances adopted for non consumer trade items (e.g. case level)

Outer Package Type	Inner Package Type	Description	Examples	Dimension	GCI GS1 Tolerance (+/-)
Corrugated Case	Cardboard or pressboard box	Full enclosed corrugated case containing cartons or boxes	Cereal, Games, Puzzles, Mac & Cheese, Facial Tissue, Dog Treats, **Does not include: Card items** Soft tissue products, toilet paper	Width	4.00%
				Height	4.00%
				Gross Weight	4.00%
				Depth/Length	5.00%
				Width	5.00%
				Height	5.00%
				Gross Weight	9.00%
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	4.00%
				Width	4.00%
				Height	4.00%
				Gross Weight	4.00%
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	4.00%
				Width	4.00%
				Height	4.00%
				Gross Weight	4.00%
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	4.00%
				Width	4.00%
				Height	4.00%
				Gross Weight	4.00%
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	4.00%
				Width	4.00%
				Height	4.00%
				Gross Weight	4.00%

The following table defines the tolerances adopted for consumer unit items

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)
Soft Paper Products in Flexible plastic packaging	Flexible plastic packaging containing soft paper products	Toilet paper, paper towels, napkins, baby care, cups & plates, tissues	Depth	0.50 in (13mm)
			Width	0.50 in (13mm)
			Height	0.50 in (13mm)
Flexible outer-wrap (tight or loose fitting)	Flexible Packaging 1. Formed, filled and sealed without gussets, 2. Stand-up pouches. 3. Packaging whose size or shape is defined by contents 4. Gusseted bags or block bottom bags.	Potato chips, drink containers, candy bars, cookies in trays, bread, disposable cups, pet food, cat litter, charcoal snack foods, flour, baking mixes	Depth	0.75 in (20mm)
			Width	0.75 in (20mm)
			Height	0.75 in (20mm)

For guidance on product measurement best practice and standard tolerances, refer to;

- GDSN Standard Package Measurement Tolerances Best Practice Guide Issue 1 Oct 2006
- GDSN Package Measurement Rules Issue 1.8.1 Mar 2008

It is important to Metcash Trading that vendor companies not only demonstrate that their systems function but also that data corresponds to the actual product; attributes such as height, depth, length and weight are essential to the efficient and smooth operation of our supply chain and the independent stores we support.

Metcash Trading

Data Quality Management

Ideal Data Quality Process

Accurate and good quality data, including all elements of dimensioning data, is so important to us; for example if the data received by us has the width and depth figures transposed the product won't physically fit into our distribution centre locations and will be rejected. Another example would also be weight as this is critical to our transport consignment accuracy.

Foodstuffs

Product Data Correction and Changes

Ensuring dimensioning data is correct and accurate requires a number of areas of excellence to be combined to create a sustainable solution. Consideration to managing corrections and changes within a company and between organisations is an essential element of any data workflow system.

Internal data alignment – ensure that quality dimensioning data is aligned across internal systems and used in data management systems.

Data Quality Management System - is a set of internal processes and best practices that guarantee that good, reliable data including dimensioning data is created and maintained through its flow in the supply chain.

Trading Partners – consideration to developing a feedback loop with your trading partner for restoring incorrect dimensioning data, both suppliers and retailers should consider systems for adoption.

Compliance Checking

GS1 offers a dimension checking service on consumer items.

GS1net validates data against over 500 business rules. Data missing key attributes will be blocked from being stored in GS1net.

Audit Services

In conjunction with industry, GS1 will offer a carton dimensioning and weighing service as a separate offering to the bar code verification service. Cartons will be weighed and measured upon request.

Values gathered from this process will be compared to the supplier maintained values in GS1net. GS1 will report back to the supplier on any variances considered to be outside the industry tolerances.

Certification

A certification program will be put in place by GS1 to enable suppliers to self regulate.

Additional Information Services

Dimensioning Case Studies

Case Studies

www.gs1.org/information_library/case_studies.asp

Dimensioning Data Information Sources

Measurement Rules - Including Tolerances

www.gs1.org/services/gsmp/kc/gdsn/index.html

Data Quality Framework

www.gs1.org/docs/gdsn/gdsn_data_quality_framework.pdf

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