
Inaccurate Package Measurements: A Common, but Preventable Root Cause of Data Quality Problems

Key considerations to help you adhere to GS1 Package Measurement Rules and safeguard the quality of your product information

Checklist for Equipment:

- Be mindful of equipment limitations when working in a cooler or under temperature conditions below freezing
- Be sure to regularly calibrate scale(s) and caliper(s)
- While automatic cubing equipment can be effective for measuring corrugated cases (boxed/squared items), be sure to take extra caution with small items such as carded products and flexible packaging materials as these often cause inaccurate measurements due to incorrectly measuring loose ends.

Checklist for Environment:

- Be sure to minimize moisture conditions as this can impact case dimensions by:
 - Causing fatigue in the corrugate
 - Adding weight to the corrugate causing corrugate expansion
- Avoid measuring products in an environment where moisture can accumulate
- Measure the product in the environment it is intended to be stored in (i.e., dry vs. frozen)
- Be aware that warehouse shelf placement may have adverse effects on measurement accuracy as ceiling area storage may be significantly warmer than lower shelves
- Keep in mind that different packaging locations may source different shipping containers for the same product impacting package measurement consistency

Considerations for Materials:

- Different formulations (colors) can have different weights which impacts weights of product variants of the same brand or product family (i.e., powdered drink mix with different packaging formats – sticks, canisters, envelopes, pouches, etc.).
- Different colors of packaging material (plastics) can have different weights which impact weights of product variants of the same pack configuration.
 - COMMON, but often overlooked MISTAKE: When you measure one item in a product line and assume the same weight across all variants within product family, inaccurate data can quickly get out of control.
- Using the same type of packaging through the entire production network of that specific GTIN (e.g., wrap-around case vs. tray-pack case vs. standard case) can help ensure data accuracy
- Be aware of the practice of corrugate weight change. For example, when a corrugate manufacturer changes the corrugate weight without notifying the supplier (from 100 lb. rated corrugate to 250 lb. rated corrugate, for example), data quality problems are likely to arise. Based on this simple change in packaging material, the case, pallet and truck/shipment gross weights may be affected. Note: stagger-stacking of corrugate is usually preferred because it provides an interlocking of the cases for stability, however, corner-to-corner stacking is the strongest to combat crush.
- Keep in mind the material used to hold or contain the product during the manufacturing process may be different from the final packaging.

- COMMON, but often overlooked MISTAKE: “Light-weighting” occurs when the supplier changes the component of the packaging material (i.e., changing to a PET or Polyethylene terephthalate plastic) to be more environmentally conscious. Even if nothing else changes on the trade item to trigger a new GTIN®, the overall weight of the case, pallet, and/or truck/shipment may be affected and fall outside the tolerance range for gross weight.

Important Do's and Don'ts for Keeping Measurements Accurate:

- Don't use spec data as it may lead to inaccurate measurements as information changes during the innovation process. Please take note that spec data in the United States reflects internal dimensions and sometimes does not follow the GS1 Package Measurement Rules.
- Don't calculate case weights and dimensions by measuring one unit and extrapolating the total. This often leads to undervaluing the dimensions and weight.
- Measure product from a sustained production run (not a sample run) using a relevant sample size, especially for flexible packages.
- Be sure to understand the complete GS1 Package Measurement Rules and the specific applications to your products.
 - Packaging Types (Flexible Packaging vs. Rigid Plastic) – Differences in packaging types can lead to inaccurate measurements.
 - Reference Surfaces (Natural Base vs. Default Front) – Without the proper application of reference surfaces, transposition of dimensional data can occur leading to inaccurate product data.
 - Product Orientation – Inconsistent product orientation can lead to transposition of dimensional data causing data quality inaccuracies.
- Weight tolerance applied on high-cube/low-weight items is the same on low-cube/high-weight items and may cause data inaccuracies.

Recipient Best Practices

- From a recipient or demand-side standpoint, implement a process to help ensure proper receipt of data in order to eliminate data inconsistencies. Some inconsistencies include:
 - Data being mapped to incorrect recipient fields.
 - Not incorporating a timed data reconciliation/refresh process in order to ensure that updated data sent by the supply-side is continually updated.
- These inconsistencies can be remedied by ensuring that information received from suppliers is continuously reviewed and audited for accuracy and incorporated into recipient backend systems.
- Recipients need to hold their suppliers accountable for the accuracy of the information provided as they are “owners” of the data.
- Any discrepancies should be communicated back to the source (supplier/manufacturer) and not just corrected internally to avoid corrections being overwritten by inaccurate data.

Education & Training Protocol

- Invest in education and training for staff to gain and maintain expertise of the GS1 Package Measurement Rules.
- If you have certified professionals on staff, be sure to have them renew their certification regularly and/or execute regular practical exercises to help ensure their expertise in interpreting and applying the GS1 Package Measurement Rules.

For more information and resources to support your data quality efforts, visit www.gs1us.org/dataquality.

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