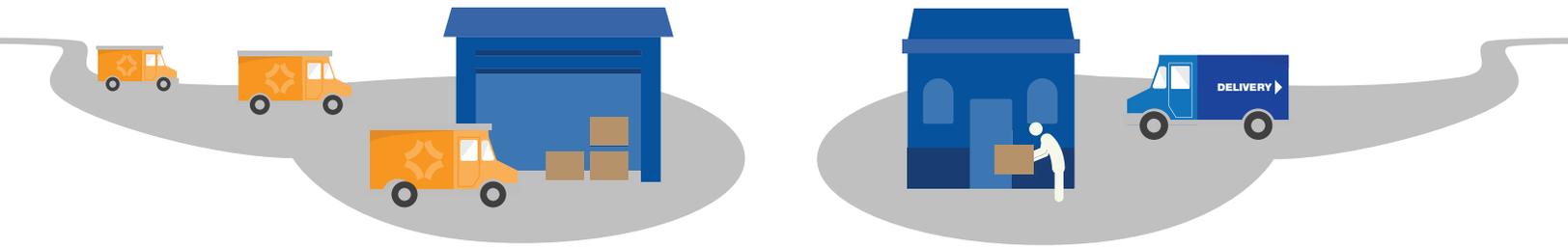


DIMENSIONAL WEIGHT AND ECONOMICS COMPARISONS FOR E-COMMERCE

E-commerce has revolutionized the way we purchase goods, evolving quickly from a niche offering to an indelible part of our daily lives. With shipping miniaturized into an individual unit, the consumer must now consider shipping costs on the path to purchase. That consideration also affects the brand owner, who must consider the dimensional weight impacts of direct-to-consumer and parcel-carrier delivery. As a byproduct of these considerations, the new economics of e-commerce shipping have become anchored by a billable weight process.



Packages are billed and charged by the greater of the following weights:

DIMENSIONAL WEIGHT (L x W x H / Carrier Divisor) **OR** **ACTUAL WEIGHT** (Based on actual product weight)

For most products shipped via e-commerce, dimensional weight is greater than actual weight. The resulting billable weight differential indicates an opportunity for brands to understand dimensional weight drivers to reduce costs.

STREAMLINED E-COMMERCE PACKAGING CASE STUDIES

The objective of these streamlined e-commerce case studies is to determine the influence and quantify the impact of flexible packaging formats on dimensional weight—and therefore on shipping costs. The case studies collectively demonstrate the advantages of flexible formats for e-commerce across multiple categories:

- In **3** of the **4** case studies, the flexible primary format delivered the smallest dimensional weight, which translated to lowest shipping costs when it was the billable weight
- Flexible formats demonstrate great potential to take advantage of Flat Rate Shipping costs, which offer dimensional weight tiers that are cost effective for products under 50 lbs. actual weight
- The cereal case study shows where a primary package made from flexible packaging yielded a much smaller cube and thus shipping cost reduction, including when shipped in a corrugated overbox for e-commerce
- Flexible packaging as the tertiary shipping package for e-commerce applications can drive additional package reduction and savings in shipping costs as highlighted in the shoe case study
- Dunnage can play a role in product protection, but also increase package dimensions
- Some products arrived with an additional e-commerce overbox that could be eliminated if the product went through an e-commerce certification program such as Amazon's Frustration Free shipping program

DIMENSIONAL WEIGHT AND ECONOMIC COMPARISON

Flexible packaging formats demonstrate clear and distinct advantages in reducing dimensional weight across many product category types – lightweight to high-density – when used as either a primary or secondary/tertiary pack format. A flexible pack can help optimize space for products and reduce shipping size and cost. In conclusion, brands and retailers should consider the flexible format as a driver and tool in delivering optimal shipping costs for appropriate products and ultimately profitability in the growing e-commerce channel.

ITEM DESCRIPTION	LENGTH (in.)	WIDTH (in.)	HEIGHT (in.)	CUBIC INCHES	DIM WEIGHT (lbs.)	ACTUAL WEIGHT (lbs.)	FLAT RATE (Carriers)	UPS (STD)
PEANUT BUTTER								
STAND-UP POUCH W/ FITMENT (NO OVERBOX) (36 OZ.)	8	4	7	224	2	3	\$10.95	\$11.95
STAND-UP POUCH W/ FITMENT, AND OVERBOX (36 OZ.)	12	9	6	648	5	4	\$14.95	\$13.15
PET JARS, 3 PACK CASE (48 OZ.)	10	5	3	150	2	4	\$10.95	\$13.15
CEREAL								
STAND-UP POUCH, CASE (60 OZ.)	15	10	4	600	5	6	\$14.95	\$14.70
BAG-IN-BOX, CASE AND OVERBOX (72 OZ.)	17	11	13	2,431*	18	7	\$23.95	\$22.34
BAG-IN-BOX, CASE (72 OZ.)	13	11	7	1,001	7**	6	\$19.95	\$16.12
SHOES								
SHOE BOX WITH FLEXIBLE E-COMMERCE MAILER	15	11	6	990	8	3	\$19.95***	\$14.70
SHOE BOX WITH E-COMMERCE OVERBOX	16	13	6	1,248	9	3	\$23.95	\$17.14
DETERGENT								
FLEXIBLE POUCH W/ FITMENT (84 LOADS)	11	6	11	726	6	11	\$19.95	\$19.51
HDPE BOTTLE (64 LOADS)	16	10	7	1,120	9	8	\$23.95	\$17.14
RIGID POD CONTAINER (81 LOADS)	15	8	8	960	7	5	\$19.95	\$14.70
FLEXIBLE POD POUCH W/ OVERBOX (108 LOADS)	13	8	11	1,144	7	7	\$23.95	\$16.12
FLEXIBLE POD (NO OVERBOX) (108 LOADS)	13	8	9	936	7	7	\$19.95	\$16.12
BAG-IN-BOX (96 LOADS)	10	7	5	350	3	8	\$14.95****	\$17.14

* 4x the volume of the stand-up pouch case.

** Even with the overbox removed, the dimensional weight still nets out higher than the flexible pouch due to the inherent headspace of the bag/box.

*** A flexible mailer results in 17% cost savings since it takes up less space than a corrugated overbox, which in turn lowers the dimensional weight.

**** The bag-in-box yielded the best dimensional weight and resulted in billable by actual weight, leading to the best shipping cost by leveraging flat rate shipping.



For more information and methodologies of assessments, please visit www.flexpack.org to download the "Sustainability and Life Cycle Impacts of Flexible Packaging in E-commerce" report.

Disclaimer: The products selected in this case study were all purchased online from standard e-commerce sites. They were meant to be representative of packages in a particular category, though results may vary based on a specific package that was purchased.