Amazon.com

Amazon Packaging Certification Guidelines

Frustration Free Packaging and E-commerce Ready Packaging

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Version 4.1 Global, Amazon Network, 2014

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Introduction

Amazon.com provides two packaging certification programs: Frustration-Free Packaging (FFP) and E-commerce Ready Packaging (ECR).

In November 2008, Amazon.com launched Frustration-Free Packaging (FFP), a multi-year initiative to make it easier for customers to liberate products from packages. The first products in Frustration-Free Packaging were toys, but FFP has grown to encompass hundreds of categories and millions of packages every year. Our vision is to offer our entire catalog of products in FFP.

Frustration-Free Packaging provides the optimal e-commerce packaging experience through the implementation of the following tenets: *Easy-to-Open*, *Protective*, *Low Waste*, and *Cost Effective*. When these tenets are achieved, customers gain a positive out-of-box experience with less packaging for disposal, while program participants (Vendors, Sellers, Distributors, and Manufacturers) potentially realize reduced waste and lower costs across their respective supply chains.

In January 2014, Amazon.com launched E-commerce Ready Packaging (ECR), a packaging certification program to validate items that can be shipped in their own containers. These products are optimized for e-commerce fulfilment to create supply chain efficiencies and improve customer experience.

1. Overview of Packaging Requirements

This overview is intended to highlight the key requirements and constraints of the Amazon Packaging Certification programs. For complete guidelines, please refer to the Technical Specification (Section 5).

FFP and ECR Requirements

Protective

- Packaging ensures a product can move through distribution undamaged including:
  - Transportation to an Amazon Fulfillment Center
  - Movement within the Amazon network and Fulfillment Centers
  - Shipment to the end customer

Cost Effective

- Packaging must be sealed and capable of shipping to an end customer without additional protection provided by the Amazon Fulfillment Center, also known as 'Ships In Own Container' (SIOC).

- Packaging must have markings essential to distribution and fulfillment such as barcode, product description, and regulatory markings.

Additional FFP Requirements

Easy-to-Open

- Packaging does not contain blister packs, plastic inserts, wire ties, packaging peanuts, shredded paper, or sealed clam shells (plastic ties are allowed to manage cord organization only).
- All contents can be removed from the package within 120 seconds.

Low Waste

- Packaging made of recyclable materials is required.
- Material markings for customer recycling and disposal, recycled content statements, or "Please Recycle" bugs are recommended.
- Shipper must be right-sized to fit contents with no more than 2.0'' (50 mm) of packaging material surrounding the product.

2. Quick Checklist

The following checklist can be used to determine how close your products are to qualifying as Frustration-Free Packaging or E-commerce Ready Packaging. More detailed information is provided in the Specifications section of this document. In addition, examples of FFP designs are represented in Appendix A.

Can your packaging be described by the following statements?

FFP and ECR Checklist

- ✓ *Packaging has no windows or cutouts.*
- ✓ *Packaging can be shipped via courier service (e.g., UPS, FedEx, USPS) without contents being damaged.*

Additional FFP Checklist

- ✓ *Packaging is free of blister packs, plastic inserts, wire ties, packaging peanuts, shredded paper, and sealed clam shells.*
- ✓ *Contents can be removed from packaging within 120 seconds.*
- ✓ *Packaging materials are recyclable.*

Whether or not your package meets the above statements, we are here to guide you through the packaging certification process. To get started, please follow the steps outlined in the following section titled *Starting the Packaging Certification Process.*

3. Starting the Packaging Certification Process

Certification is required to denote your items as having Frustration-Free Packaging or E-commerce Ready Packaging. The packaging certification process is managed within Vendor Central and Seller Central. This process includes a technical review by Amazon packaging professionals and transit testing by either an ISTA-certified facility or by the Amazon Packaging Certification Lab. The process is described below:

- ***Enrollment:*** Enroll your packages using Vendor Central or Seller Central.

- ***Lab Review:*** Provide images of packaging for review and ship samples to the Amazon Packaging Certification Lab for transit testing.
- ***ASIN Launch:*** Once the package passes Lab Review and testing, we will certify your ASINs as FFP or ECR. FFP ASINS are eligible for additional benefits such as site marketing and inclusion in the Frustration-Free Packaging storefront.

4. Packaging Specifications

This section provides further information on packaging materials and transit testing. It is recommended that all program participants review this information in order to gain a better understanding of the program and its requirements prior to enrolling in the program.

Although this specification covers the packaging and testing requirements of the FFP and ECR programs, it is not all inclusive. Any exceptions to this document will be reviewed on a case by case basis. All proposed exceptions require a technical review and final approval by the Amazon Packaging Certification Lab.

The primary purpose of the FFP and ECR programs is to improve the out-of-box experience for the customer. This section gives you an in-depth review of acceptable packaging attributes to qualify as Frustration-Free Packaging or E-commerce Ready Packaging.

FFP and ECR Requirements

5.1. *Protective*: [Applicable to FFP and ECR] Packaging must ensure a product can move through distribution undamaged.

5.1.1. *Packaging Sealing:* Open edges must be adequately sealed to ensure the product remains protected throughout storage and distribution to the end customer.

5.1.1.1. The preferred sealing method for regular boxes is 2.0”- 3.0” packaging tape or water-activated tape. Refer to Appendix B for examples.

5.1.1.2. Sealing methods and materials must not hinder a customer from opening package within 120 seconds.

5.1.1.3. Sealing materials must be capable of withstanding variances in relative humidity and temperature between -40 degrees Fahrenheit (-40 degrees Celsius) and 140 degrees Fahrenheit (60 degrees Celsius).

5.1.1.4. Staples are not allowed as a sealing method, but are permitted on the manufacturer glue joint.

5.1.2. *Packaging Construction:* Package panels must be flat and free of extrusions, windows, and cut-outs.

5.1.2.1. Perforations in the outer shipper are not allowed unless taped.

5.1.2.2. Handle cutouts in the outer shipper to assist in handling are permitted.

5.1.2.3. If the outer shipper has an auto-bottom feature, it must be taped.

5.1.2.4. Non-metal straps or bands are permitted to provide structural integrity to the outer shipper.

5.1.2.5. Bundling multiple packages with straps or bands is not permitted.

Flexible Packaging: For durable products that do not require additional protective packaging, flexible packaging (paperboard and envelopes) may be used. *Durable* items are defined as items that can withstand two (2) consecutive drops from a height of 36" (91 cm) and support a top load of 10 lbs (4.5 kg) without experiencing damage.

5.1.2.6. **Envelopes:** For documents and thin items, the use of envelopes is permitted. In order to improve sorting during distribution, envelopes cannot be plain (unbleached) paperboard. For envelopes to accommodate a shipping label, packages must meet a minimum size.

5.1.2.6.1. (US): Envelope dimensions must be greater than 6.5" (165 mm) x 4.5" (114 mm) x 0.375" (9.5 mm).

5.1.2.6.2. (EU) Europe: Envelope dimensions must be greater than 7.7" (195 mm) x 4.9" (125 mm) x 0.63" (16 mm).

5.1.2.6.3. (JP) Japan: Envelope dimensions must be greater than 10.24" (260 mm) x 7.8" (198 mm).

5.1.2.6.4. (CN) China: Envelope dimensions must be greater than 6.5" (165 mm) x 4.5" (114 mm) x 0.375" (9.5 mm).

5.2. *Cost Effective:* Packaging should be optimized for efficient handling and transportation.

5.2.1. *Ships in Own Container (SIOC):* Packages that ship to an end customer without the need of additional packaging are classified as SIOC. Certified items should be capable of Shipping in Own Container (SIOC). Packages that ship SIOC may experience various levels of cosmetic damage as it moves through distribution.

5.2.1.1. Cosmetic damage such as dented corners, abrasions, and dust is acceptable, as long as the inner product remains undamaged. The Program Participant and the Amazon Packaging Certification Lab determines the acceptable level of cosmetic damage.

5.2.1.2. Highly-gifted items, premium-printed shippers, or items valued greater than $400 require a fitted outer-box for additional protection.

5.2.2. *Package Shape:* Packages should be easy to stack for storage, conveyance, and shipping. Rectangular-shaped packaging with square corners is preferred. Examples of packaging can be found in Appendix A and E of this document as well as in the FFP Design Library in Vendor Central and Seller Central.

5.2.3. *Package Markings and Labeling:* Amazon requires package markings and labeling to clearly indicate contents and communicate any unique handling instructions. The following specifications clarify required markings for certified packages.

5.2.3.1. **Labeling:** Packages with special handling instructions must be clearly labeled with specific information on the proper handling through the Amazon distribution network. Refer to Appendix C for examples.

5.2.3.1.1. Identification Markings (product description, product code(s), and barcode) must be printed on the package or the package label. Exceptions are allowed when the item contents are of a sensitive nature.

5.2.3.1.2. For package labels, Identification Markings must be in a field of solid white for automated identification and human readable-elements must accompany all barcodes.

5.2.3.1.3. When using small or flexible packaging, barcode and product identification must be printed on the largest panel.

5.2.3.1.4. For certified packages that are different than the traditional retail packages (including over-boxed), the barcode (unique identifier) must be different than the barcode (unique identifier) used for the traditional retail item.

5.2.3.1.5. Preferred barcodes are listed below in Table 1.

Table 1: Barcode Requirements

	United States/China/Canada	Europe	Japan	Multi Regional
Minimum Grade for Symbology Contrast when printed directly on packaging substrate	ANSI "D" or Better			
Minimum barcode height	0.5 in (12.7 mm)	10 mm	15 mm	15 mm
Minimum barcode length	-	-	35 mm	35 mm
Minimum bar width	-	0.5 mm	0.25 mm	0.25 mm
Wide space ratio	-	-	1 : 2.5 mm	1 : 2.5 mm
Minimum space between barcode and any other scannable element	0.5 in (12.7 mm)	12.5 mm	12.5 mm	12.5 mm
Preferred barcode type	UPC	EAN type 128	UPC	UPC

** Refer to the North American Vendor Shipment Prep and Transportation Manual for further details

5.2.3.2. **Compliance:** Product compliance information must be clearly printed on the package or barcode label. The Program Participant is responsible for all product compliance and environmental markings on the package. For example, lithium battery warning labels must be included in the package printing.

5.2.3.2.1. For U.S. packages, refer to the U.S. Code of Federal Regulations, Part 172, Subpart D and F for more information on proper labeling and marking of warning labels.

5.2.3.3. **Rebates:** Products that offer rebates or manufacturer discounts in traditional retail packaging are required to maintain the same offer for those products packaged in

certified packaging. Packaging markings or inserts must be included so customers may easily redeem offer(s).

5.2.3.4. **Seal/Marks:** If the package meets all FFP requirements and is properly enrolled and launched, the FFP Seal and related marks may be printed on the package. Refer to Appendix D for FFP Seal, marks and optional printed elements. Currently, ECR program does not provide a certification seal.

5.2.3.4.1. The applicable seal/marks should be clearly displayed on the exterior of the packaging, either directly printed on the carton or printed on the barcode label.

Additional FFP Requirements

5.3. *Easy-To-Open:* Packaging must secure the product and be easy-to-open by the customer with minimum use of additional tools.

5.3.1. A pair of scissors or a letter opener is acceptable when opening the package.

5.3.2. Packaging must not include blister packs, wire ties, shredded paper, packaging peanuts, or sealed clam shells.

5.3.3. Plastic ties are permitted for bundling together items such as cords, wires, and cables. Excessive use of wire ties that hinder removal of the product is not acceptable.

5.3.4. Customers can open the package and remove the product(s) within 120 seconds. When multiple components are present, all must be removed, but not assembled, in this timeframe.

5.4. *Low Waste:* Amazon focuses on three aspects of packaging as they relate to Low Waste: minimizing packaging material, using recyclable materials, and maximizing use of renewable and recycled content.

5.4.1. *Right-Sized:* Packaging must be designed for protection and not over-sized for marketing purposes.

5.4.1.1. To minimize package size, a maximum 2.0” (50 mm) of packing material is permitted around the product.

5.4.1.2. More than 2.0” of packaging is acceptable for large or fragile products if it is determined necessary to protect the product.

5.4.1.3. When a master pack quantity is sold as a single-sell unit and internal packages meet FFP guidelines, the master case is certified as FFP.

5.5. *Recyclable:* It is required that packaging materials be recyclable.

5.5.1.1. Preferred material for non-envelope packaging is kraft paper products such as corrugated or chip board.

5.5.1.2. Plastic resins with SPI codes 1 (PET), 2 (HDPE), 4 (LDPE), and 5(PP) are preferred.

5.5.1.3. Plastic resins with SPI codes 3 (PVC), 6 (PS) and 7 (Other) are not recommended, but are permitted if total volume of resin(s) is less than 10% of total packaging volume.

5.5.1.4. Printing and/or treatments must not affect the recyclability of the package.

5.5.1.4.1. Metallic inks, inks containing heavy metals, or foil stamps are not permitted.

5.5.1.5. It is recommended that packaging materials are clearly marked indicating proper recycling or disposal methods.

5.5.1.6. Packaging materials made with pre- and post-consumer recycled content is recommended, but not required.

5.5.1.7. For U.S. packages, refer to the Federal Trade Commission (FTC) Green Guides (www.ftc.gov) for further information regarding acceptable recycling claims for packaging labeling.

5. Transit Testing to Certify Packaging

The primary purpose of packaging is to protect the product from damage during storage and distribution. In order to ensure the package is delivered through the Amazon fulfillment and shipping network and arrive undamaged to the customer, FFP and ECR packages must pass tests that simulate the effects of a single-parcel delivery system.

The Amazon Packaging Certification Lab tests packages according to the International Safety Transit Association (ISTA) 3A and 3B standards. Complete ISTA testing standards are located at their corporate website (www.ista.org).

6.1. **Transit Testing Options:** There are two ways to complete package testing to achieve the certification, either internally through the Amazon Packaging Certification Lab or externally utilizing an ISTA-Certified packaging lab. Regardless of testing location, the item must be enrolled with Amazon to become certified as Frustration-Free Packaging or E-commerce Ready Packaging.

6.1.1. **Testing at the Packaging Lab:** The Amazon Packaging Lab accepts and tests package samples that meet the following criteria:

6.1.1.1. Sample(s) must be placed in an over-box to prevent damage prior to testing. Sending samples without additional protection may delay testing.

6.1.1.2. In the US, weight of the package cannot exceed 100 lbs (45 kg). For the EU, weight of the package cannot exceed 20 kg.

6.1.1.3. Longest length of package cannot exceed 108" (274 cm).

6.1.1.4. Packages containing liquid, glass, or fragile electronic equipment require five (5) samples for testing.

6.1.1.5. All other packages require at least one (1) sample for testing.

6.1.2. **External Lab Testing:** If the package exceeds the above parameters, it must be tested by an external ISTA-certified laboratory with the formal report and ISTA Lab certification forwarded to the Packaging Lab for review. In addition, external testing is required for the following situations.

6.1.2.1. Oversized packages (refer to Section 6.2.1.).

6.1.2.2. Hazardous materials or any other item that needs special disposal.

6.2. **Package Size Categories:** Packaging testing varies depending on the size of the item being tested. Packages within Amazon are separated into 4 categories based on dimensions and weight per region: *OVERSIZED, STANDARD, SMALL, and TINY*.

6.2.1. **OVERSIZED** packages are defined as any package where either of the following is true:

6.2.1.1. Weight is greater than 100 lbs (45kg).

6.2.1.2. Longest dimension is greater than 108" (274 cm).

6.2.2. **STANDARD** packages are defined as any package where the:

6.2.2.1. Weight is greater than 10 lbs (4.5 kg) but less than 100 lbs (45 kg).

6.2.2.2. Longest dimension is less than 108" (274 cm).

6.2.2.3. (US): Dimensions greater than 9.0" (229 mm) x 6.0" (152 mm) x 0.375" (9.5 mm).

6.2.2.4. (EU): Dimensions greater than 6.7" (170 mm) x 4.7" (120 mm) x 0.7" (18 mm).

6.2.2.5. (JP): Dimensions greater than 7.7" (196 mm) x 4.9" (125 mm) x 0.19" (5 mm).

6.2.2.6. (CN): Dimensions greater than 6.7" (170 mm) x 4.3" (110 mm).

6.2.3. **SMALL** packages are defined by the attributes below. Items smaller than STANDARD (i.e. SMALL and TINY) are not typically eligible for FFP or ECR certification. Exceptions are permitted on a case-by-case basis at the sole discretion of the Packaging Certification Lab. For solutions within the SMALL and TINY categories, please seek guidance from the Packaging Certification Lab through Vendor Central or Seller Central prior to packaging design.

6.2.3.1. Weight is less than 10 lbs (4.5kg).

6.2.3.2. (US): Dimensions are greater than 6.5" (165 mm) x 4.5" (114 mm) x 0.375" (9.5 mm) but less than 9.0" (229 mm) x 6.0" (152 mm) x 0.375" (9.5 mm).

6.2.3.3. (EU): Dimensions are greater than 6.1" (155 mm) x 4.1" (105 mm) x 0.71" (18 mm) but less than 6.7" (170 mm) x 4.7" (120 mm) x 0.7" (18 mm).

6.2.3.4. (JP) To be determined. Refer to Section 6.2.2. for STANDARD package dimensions.

6.2.3.5. (CN) To be determined. Refer to Section 6.2.2 for STANDARD package dimensions.

6.2.4. **TINY** packages are defined by the attributes below. Items smaller than STANDARD (i.e. SMALL and TINY) are not typically eligible for FFP or ECR certification. Exceptions are permitted on a case-by-case basis at the sole discretion of the Packaging Certification Lab. For solutions within the SMALL and TINY categories, please seek guidance from the Packaging Certification Lab through Vendor Central or Seller Central or Seller Central prior to packaging design.

6.2.4.1. (US): Any one dimension is less than 6.5" (165 mm) x 4.5" (114 mm) x 0.375" (9.5 mm).

6.2.4.2. (EU): Any one dimension is less than 6.1" (155 mm) x 4.1" (105 mm) x 0.71" (18 mm).

6.2.4.3. (JP): Any one dimension is less than 7.7" (196 mm) x 4.9" (125 mm) x 0.19" (5 mm).

6.2.4.4. (CN): Any one dimension is less than 6.7" (170 mm) x 4.3" (110 mm).

6.3. **Testing Procedures:** Testing procedures outlined below follow ISTA 3A and 3B standards except for TINY and SMALL packages. Refer to Appendix F for complete Packaging Lab test procedures.

6.3.1. **ISTA 3B** testing for OVERSIZED packages:

6.3.1.1. Refer to the ISTA website (www.ista.org) for information regarding testing procedures and a directory of ISTA-Certified laboratories.

6.3.2. **ISTA 3A** testing for STANDARD packages:

6.3.2.1. First drop sequence (1-9 drops).

6.3.2.2. Vibration test (liquid, glass, fragile, and electronic items only).

6.3.2.3. In cases where a top load is not required according to ISTA 3A, use 20 lbs (9.1 kg) as top load weight.

6.3.2.4. Second drop sequence (10-17 drops).

6.3.2.5. Leak test (liquids only).

6.3.3. **Modified ISTA 3A** testing for TINY and SMALL items is documented below. Items that are smaller than STANDARD (i.e. SMALL and TINY) generally do not qualify as FFP or ECR but the Packaging Lab may do so at their discretion.

6.3.3.1. First drop sequence (1-9 drops)

6.3.3.2. Vibration test (liquid, glass, fragile, and electronics items only)

6.3.3.3. In cases where a top load is not required according to ISTA 3A, use 20 lbs (9.1 kg) as top load weight.

6.3.3.4. Second drop sequence (10-17 drops) is modified to be performed without a mail bag.

6.3.3.5. Leak test (liquids only).

6.4. **Situations Requiring Recertification:** Once a package is certified as FFP or ECR, it does not require recertification as long as the materials and components remain unchanged.

6.4.1. If changes occur, the updated package must be retested to ensure the revisions did not negatively impact packaging performance. Common scenarios are listed below (this list is not all-inclusive).

6.4.1.1. Material change in the primary package, protective material and/or shipper. This includes corrugated flute size changes and material thickness modifications.

6.4.1.2. Design changes to the primary package, protective material, and/or shipper.

6.4.1.3. Pack size quantity changes (ex. 2-pack to a 4-pack).

6.4.1.4. Sealing method changes (ex. glue to tape).

6.4.1.5. Addition or removal of components (ex. adding a carrying case or removing a corrugated partition).

6. Additional Resources, Reference Documents and Websites

The documents below are located in the Resource Center or Help sections of Vendor Central and Seller Central or on the internet. They provide additional information pertaining to Amazon Packaging program and related package shipping and handling information.

6.1. Resources on Vendor Central and Seller Central

6.1.1. Frustration-Free Packaging Design Library with FFP approved solutions for a variety of products

6.1.2. North American Vendor Shipment Prep and Transportation Manual found in the *Resource Center* section of Vendor Central. In the EU, refer to the Vendor Operations Manual.

6.1.3. Frustration-Free Packaging Seal Brand Usage Guidelines

6.1.4. Frustration-Free Packaging Logo Artwork files

6.2. External Websites with Additional information about testing, labeling, and shipping

6.2.1. External Testing Procedures, Institute of Safe Transit Association (ISTA), (www.ista.org).

6.2.2. Proper Labeling, U.S. Code of Federal Regulations, Part 172, Subpart D and F, (www.ecfr.gov)

6.2.3. Reference, Shipping and Handling, United Parcel Service, (www.ups.com).

6.2.4. Reference, Shipping and Handling, Federal Express, (www.fedex.com).

6.2.5. Reference, Shipping and Handling, United States Parcel Service, (www.usps.com).

7. Appendices

Appendix A Acceptable/Unacceptable FFP Designs

Image	Product Description	Easy-To-Open	Low Waste	Product Protection	Amazon FFP (Yes or No)
	Transcend Memory Card	✓	✓	✓	Yes
	Bare Drive	✓	✓	✓	Yes
	Duracell Batteries	✓	✓	✓	Yes
	Sonicare toothbrush	✓	✓	✓	Yes
	LeapFrog Musical Table in FFP packaging	✓	✓	✓	Yes

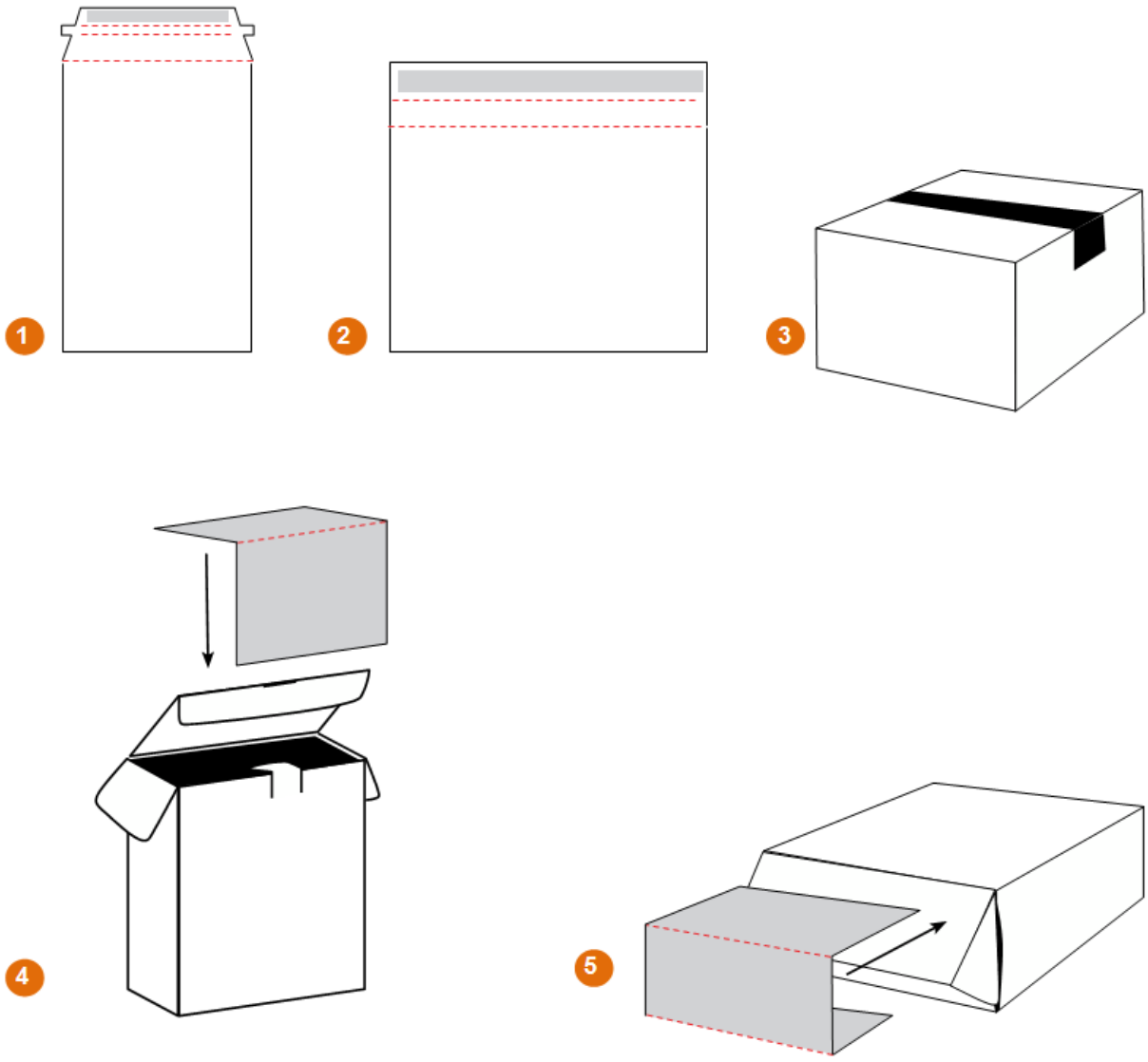
Appendix A (continued)

Image	Product Description	Easy-To-Open	Low Waste	Product Protection	Amazon FFP (Yes or No)
	Wii Charge Station	✓	✓	✓	Yes
	JLab JBuds	✓	✓	✓	Yes
	Pampers Swaddlers	✓	✓	✓	Yes
	Wireless Headset – Bulk in Bag	✓	✓	No	No
	Microsoft Mouse in Clamshell	No	No	No	No

Appendix B – Package Sealing Options

Examples of Sealing Package

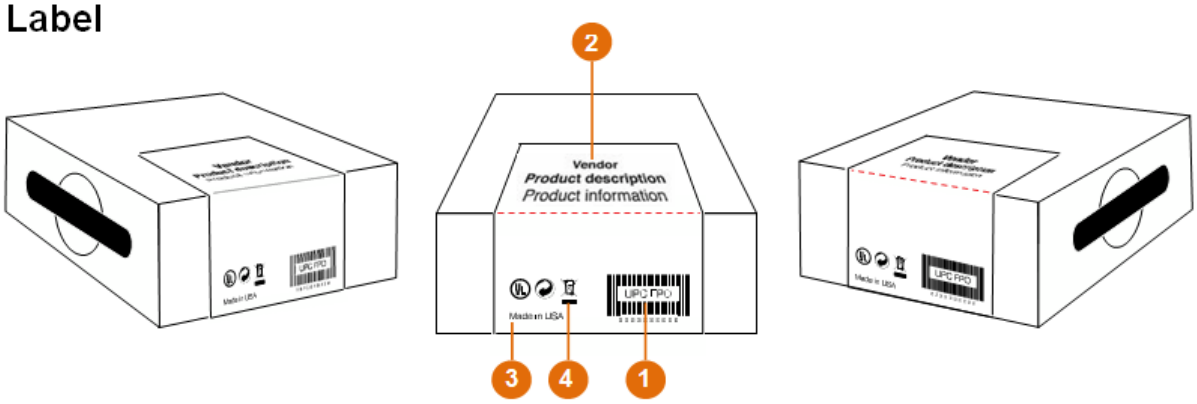
1. Envelope with zip pull
2. Polyethylene bag with zip pull
3. Box sealed with tape or glue
4. Tab box sealed with single fold label
5. Tab tuck box with double fold lab



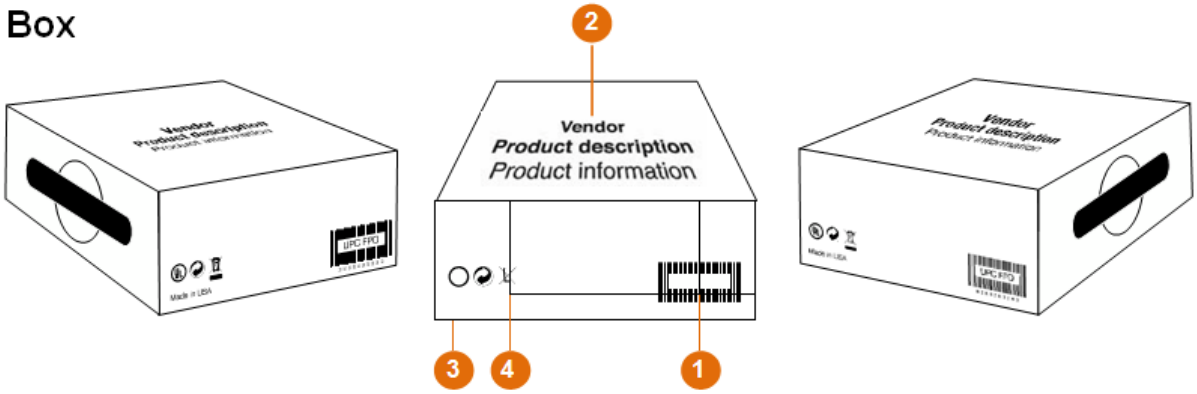
Appendix C - Required Labeling Elements

1. **Barcode** (facing outward as it would be on shelf)
2. **Product description**
3. **Origin of manufacture**
4. **For Placement Only (FPO) compliance information,** such as, but not excluded to: hazard handling, fragile, UL information and green dot. Each Program Participant is responsible for resourcing compliance related information and the proper printing of required information.

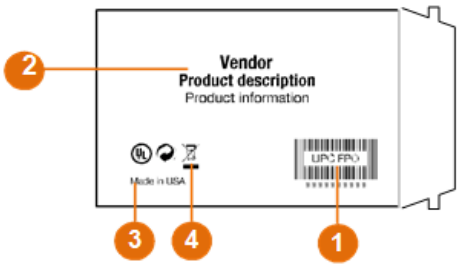
Label



Box



Flexible Packaging



Appendix D - Optional Labeling Elements

FFP certification seal (see logo guidelines)	CERTIFIED FRUSTRATION-FREE PACKAGING	**Fragile**	FRAGILE
Corrugated recycles	Corrugated Recycles	**Glass**	
Recycled content information	This package is made from a minimum of 30% recycled content.	**No water**	
Green dot		**Breakable**	
This end up		**Please recycle**	Please reuse or recycle this box Recycling facilities may not be available in your area.

Appendix E - Design Library – Before and After SIOC

	BEFORE	AFTER
Memory Cards		
Logitech Webcam		
Wii Charge Station		
Fisher Price Pirate Ship		This item is delivered in an easy-to-open recyclable box and eliminates 5 pieces of packaging, including 792 square inches of paper, 29 square inches of PVC plastic, and 30 inches of twist ties.

Appendix F - Transit Test Simulation

The testing procedures below outline the testing protocol and standards an item needs to pass for FFP or ECR certification. All procedures are based on the ISTA 3A and 3B testing protocol. Modifications have been made to the ISTA testing procedures to more effectively represent the needs of the Amazon distribution environment and Courier service shipment. Complete ISTA testing standards are located at their corporate website (www.ista.org).

Packaging program participants that would like to conduct testing by an independent ISTA certified lab may do so and submit the test report to the Packaging lab for approval.

External Lab Testing is required for items that:

- Exceed 100 lbs (45kg)
- Contain hazardous materials or need special disposal
- Have an outside dimension that exceeds 108" (274cm)

Requirements for passing certification

For non-fragile items, at least one sample must pass the two drop sequences of the transit test. For Fragile items, 5 samples must pass the two drop sequences, the vibration sequence and the leak test.

Acceptance Criteria (what is considered to be a passed or failed test):

- The product is not damaged, broken or leaking
- The carton is not ruptured exposing any of the contents to hazard

Definitions

Fragile-Fragile items are defined as items that easily break or could leak during the distribution process.

This includes any item containing:

- Glass
- Ceramic/porcelain/clay
- liquid/semi-liquid
- Solids that can become liquid at temperatures experienced during the distribution cycle (above 70 degrees Fahrenheit)
- Electronics that are easily damaged when dropped from 18" without packaging

Non-fragile- items that meet the following conditions: not considered fragile, under 100 lbs (45kg), longest outside dimension is less than 108" (274cm) and are not hazardous or require special disposal

Most fragile flat surface (drop 16 of 2nd drop sequence)- area of the product that is most prone to damage if dropped on that surface. If multiple damage prone areas exist, choose the most sensitive area. Examples include: caps, handles, spray triggers, areas of thin glass, areas that have only one layer of corrugate between the item and the drop surface.

Section 1: Sample Inspection and Setup

Non-Fragile Items: Follow Group A marking procedure outlined below and shown in Figure 1.

Fragile Items:

1. Sample Inspection: Open 5 units and make sure the items are sufficiently protected and not damaged

* No preexisting damage(broken parts, cracks, chips)

* No glass-on-glass or glass-on-metal contact

* Has air cell or protective layer between the item and the inside perimeter of shipper

2. Follow Group A, B and C marking procedure below

Group A-2 Samples:
Place the smallest flat surface of the carton facing you. Proceed to mark like **Figure 1**.

Group B-2 Samples:
Place the smallest flat surface of the carton facing you. Rotate package so face 2 in the diagram faces up (now face 1). Proceed to mark like **Figure 1**.

Group C-1 Sample:
Place the smallest flat surface of the carton facing you. Rotate package so face 5 in the diagram faces up (now face 1). Proceed to mark like **Figure 1**.

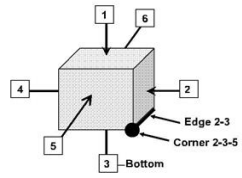


Figure 1: Marking the Sample

Once all items are marked, proceed to Section 2: Testing Sequence

Section 2: Testing Sequence

Section 2.1: 1st Drop Sequence-ISTA 3A testing method

The drops must be made onto a hard flat surface, like concrete.

Fragile Items:

Step 1: Complete the first (Section 2.1) and second drop sequence (Section 2.3) for Group A units. Inspect units. If samples pass both drop sequences, then proceed to Step 2.

Step 2: Complete the first drop sequence (section 2.1) for the remaining 3 samples. If no damage is observed without opening the unit then proceed to Section 2.2 (Vibration)

Non-Fragile Items:

Step 1: Complete the first round of drop sequences outlined in Section 2.1 for all testing units. If no damage is observed without opening the unit then proceed to Section 2.2 (Vibration) or 2.3 (2nd drop sequence). Vibration is not required for non-fragile items but is highly recommended.

Drop Order	Drop Height	Drop Orientation	
1	18 in	Edge 3-4	
2	18 in	Edge 3-6	
3	18 in	Edge 4-6	
4	18 in	Corner 3-4-6	
5	18 in	Corner 2-3-5	
6	18 in	Edge 2-3	
7	18 in	Edge 1-2	
8	36 in	Face 3	
9	18 in	Face 3	

Section 2.2: Vibration under Dynamic Load- according to ISTA 3A testing methods

(Required for all 5 fragile units)

All package sizes- including smalls

Use Group A numbering for all units

*Place test item on table with face 3 down. Place top load apparatus on product with appropriate weight (calculation below). Run test for 60 minutes.

*Rotate test item, place face 4 side down. Place top load apparatus on product with appropriate weight (calculation below). Run test for 30 minutes.

*Rotate test item, place face 6 side down. Place top load apparatus on product with appropriate weight (calculation below) Run test for 30 minutes.

Top load calculations: (weight placed on units during vibration sequence)

With face 3 down (108-H) x L x W x .0035
With face 4 down (108-W) x L x H x .0035
With face 6 down (108-L) x W x H x .0035

Fragile and Non-Fragile Units: Proceed to Section 2.3 (2nd Drop Sequence)

Section 2.3: 2nd Drop Sequence-ISTA 3A modified (mail bag is not used for smalls)

Non-Fragile Units: Conduct the 2nd drop sequence on units. Once complete then proceed to Section 4 (Evaluation).

Fragile Units: Conduct 2nd drop sequence on the 3 samples that did not go though the second drop test outlined in Section 2.1. If the item is liquid then proceed to Section 3 (Leak Test). If the item is not liquid then proceed to section 4 (Evaluation).

Drop Order	Drop Height	Drop Orientation	
10	18 in	Edge 3-4	
11	18 in	Edge 3-6	
12	18 in	Edge 1-5	
13	18 in	Corner 3-4-6	
14	18 in	Corner 1-2-6	
15	18 in	Corner 1-4-5	
16	36 in	Most fragile* flat surface	*most damage prone area of the item
17	18 in	Face 3	

Section 3: Leak Test (liquid items only)

The leak test is for items that are liquid or can become liquid at temperatures experienced during the distribution cycle.

After items have completed Section 2.3 (2nd Drop Sequence), place them on a solid flat surface with the cap or top of the item facing down. Leave in this position for 8 hours. After eight hours proceed to Section 4.

Section 4: Evaluation

Inspect all 5 units for damage. If any damage (breakage, cracks, chips, leakage) is seen then the item receives a "Fail" rating. If no damage is seen then the item receives a "Pass" rating.