

Title	Non-Food Package Test Procedures
Sponsor	Non-Food Packaging Department
Created / Revised Date	06/26/2008; 11/15/2017; 05/01/2018; 10/29/18
Participating Functions	Supplier Package Test Protocols
Document #	PK.PT.18Q4

Purpose

Package tests help to determine the ability of the packaging to adequately protect the merchandise against the hazards of the distribution and handling system from our distribution center to the ultimate customer via small parcel distribution (UPS, USPS, FedEx, etc.). The tests were developed based on industry data, internal analyses, and established testing standards. Each test procedure consists of a series of drop, vibration, and impact tests designed to simulate distribution hazards. Products that pass these tests provide the benefits of reduced damages and product loss, and increased customer satisfaction.

Scope

Applicable to all Colony Brands non-food product where Package Tests are required. Package tests are to be performed on one (1) single unit carton (note this is not performed on master cases).

It is the responsibility of the Supplier to meet all the requirements as outlined in the Package test procedures. Failure to meet the requirements as outlined in each package test procedure may result in chargebacks for Supplier non-compliance.

Tools

- Tape Measure
- Hazard Box - a dense wooden box measuring 12 x 12 x 12 inch (300 x 300 x 300 mm), with one bottom edge covered by an angle iron, onto the test package. The box should have a total weight of 9 lbs (4.1 kg) and be filled with a sand bag and void filled to hold the bag in place.
- Two (2) Wooden Support Blocks – 4” in height, length equal to or greater than the width of the item being tested
- Utility Knife
- Working Surface
- Test Report Template
- Camera
- Scale
- Vibration Tests require a Random Frequency Vibration table.

Outputs/Deliverables

Packaged product must pass inspection when all package tests have been performed. Product must not have damage. It cannot be broken, chipped, cracked, scuffed, scratched, bent or deformed in any way.

Terminology

- **Carton / Package** – The packaging material that protects an individual item, i.e. 1.5 mil polybag, corrugate box, etc.
- **Elongated Package** - The longest dimension is 36 inches or greater and both other dimensions are 20% or less of the longest.
- **Flat Packages** - Shortest package dimension is less than 8" and the next longest dimensions is four (4) or more times larger than the shortest dimension
- **Large** – Any packaged item where the package is equal to or greater than 45 pounds, equal to or greater than 45 inches in length, or equal or greater than 4.5 cubic feet.
- **Master Carton** – A carton (case) that contains 2 or more single unit packaged items -- Example: a master carton could contain twelve cartons or twelve packages. Master cartons are not subject to ship tests.
- **Overbox** – An individual packaged product is not intended to ship in its own container.
- **Reshipper or Remailer** – A single unit carton with **Outer AND Inner protective packaging** able to withstand the distribution, storage, handling, and shipment through the small parcel distribution environment (UPS, USPS, etc.) without any additional packaging or preparation supplied by Colony Brands to ship to our customer.
- **Selling Unit /Single Selling Unit** – The product packaged and shipped as described in the catalog. One (1 each, 1 set, 1 item) selling unit as packaged.
- **Ship-Alone** – A packaged item that is greater than 26" in length, or 15" in width, or greater than 1.50 cubic feet. (See Ship-Alone Packing Requirements section for more information.)
- **Small** – Any packaged item where the package is less than 45 pounds, less than 45 inches in length, or less than 4.5 cubic feet.
- **Small Parcel Distribution** – Distribution environment managed by small parcel carriers, such as UPS, USPS, FedEx, etc.

Steps

A) Identify if a package test is required for your product type

Packaging Test Requirements by Product

*NO PACKAGE TEST	PACKAGE TEST REQUIRED
Beauty and Cosmetics	Basket and Bath Sets in remailers
Bulk Packed or Retail Packaged Candles	Collectibles and Figurines
Cameras	Cookware in remailer
Clothing	Fitness Equipment
Clothing Accessories	Furniture, Indoor
Gadgets	Furniture, Outdoor
Garlands and Wreaths Without Glass Components	Garlands and Wreaths with Glass
Jewelry	Home Accessories and Home Décor
Luggage	Household and Kitchen appliances
Personal Care Items	Kitchen Housewares
Phones	Serving Accessories
Retail Basket and Bath Sets	
Retail Packaged Cookware	
Rugs	
Shoes	
Silverware, Knives and Utensils	
Stereos	
Textile/Bedding	
Tools	
Toys and Games	
Travel and Auto	
TV's	
Wicker, Grass, Hemp or Rafia Baskets	

*Unless requested or listed on your PDR.

Last Updated: 04/2018

B) Does your package require an Overbox or is it a Remailer

1. If the individual packaged product is not intended to ship in its own container, then it will require an overbox during the package test.
2. If the individual packaged product can be used as a remailer or by size is required to have a remailer (see supplier manual Ship Alone Requirements) then it will be tested without an overbox.

C) Determine if the package size of your finished single unit carton is large or small

1. Using a tape measure and a scale obtain the dimensions and weight of your finished single unit carton.

	Large	Small
Weight	Greater than 45 pounds or	45 pounds or less or
Longest Dimension	Greater than 45 inches or	45 inches or less or
Cube	Greater than 4.5 cubic feet	4.5 cubic feet or less

D) Determine Vibration Test Requirement

1. Products that contain any of the following components or finished surfaces must perform vibration testing in addition to shock tests.
 - a) Stained, painted or finished wood or fiberboard (MDF)
 - b) Painted, finished or powder coated metals
 - c) Clay
 - d) Hand painted glass or polycarbonate
 - e) Unglazed or unsealed painted ceramic or resin
 - f) Any time where glass or metal is in contact with a wood or fiberboard (MDF) surface (the surface can be finished, unfinished or laminate).
2. If you have been instructed in writing to perform vibration tests.

E) Determine if your package is Flat or Elongated

1. Elongated - The longest dimension is 36 inches or greater and both other dimensions are 20% or less of the longest.
2. Flat - Shortest package dimension is less than 8" and the next longest dimensions if four (4) or more times larger than the shortest dimension

F) Perform Package Tests

1. Overbox – Packaged product must be placed in an appropriately sized ship carton (200 lb burst strength) with loose void fill prior to testing.
2. Remailer – This packaged product will be tested as is, with no additional packaging.
3. Follow ISTA-1A or 3A procedures as noted below in Sections J and K.

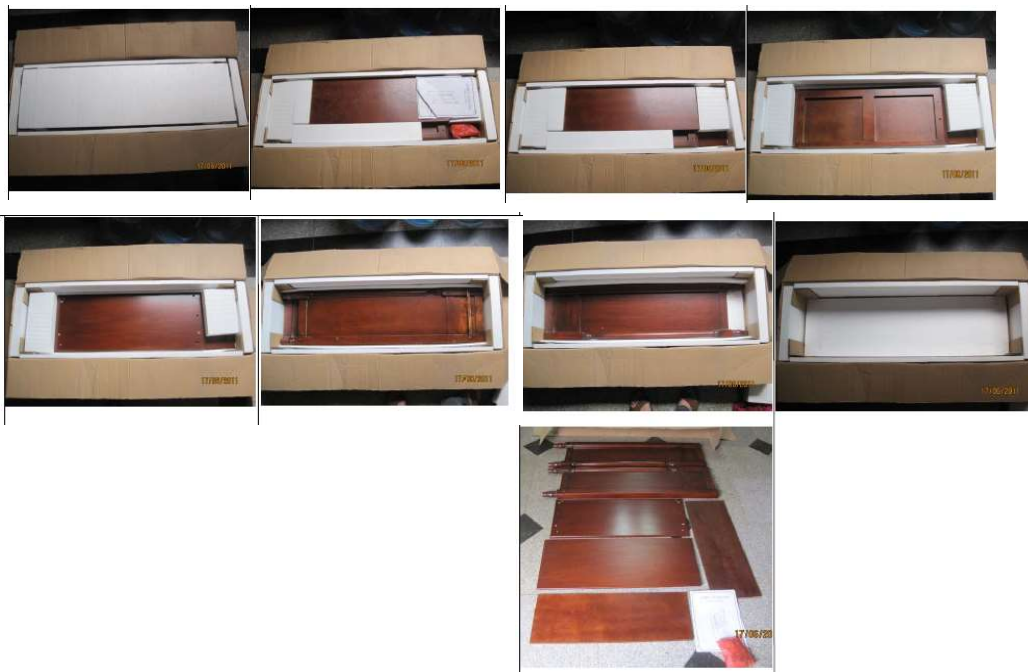
G) Review the product after all tests have been completed

1. Open the tested package and carefully inspect the merchandise
2. Starting from the outside working in take photo images of each piece or layer as you inspect.
3. If the item has any electrical or mechanical components it must be tested and function properly.
4. Upon inspection, the product must not have damage. It cannot be broken, chipped, cracked, scuffed, scratched, bent or deformed in any way.
5. If the item has failed any part of the package test:
 - a) Make corrections or adjustments to the package design, strength or components, product or parts, or placement of pieces within the package to eliminate the reason for the failure.
 - b) Repeat the process as many times as necessary until the item passes all tests.

H) Complete and Submit the package test report.

1. Using one of the Colony Brands, Inc. Non-Food test report templates complete all fields as appropriate for your product.
 - a) Test reports must include the Colony Brands Package Label Number (PLN) with description
 - b) Test Date
 - c) Where the tests were performed
 - d) Details of the packaging including weights and measures, carton material specifications and description of inner protective packaging.
 - e) Each test segment performed must be identified.
 - f) Test results must be documented
 - *Example "XXXX Company has performed Shock and Vibration tests on the above listed item and after inspection has passed all required package tests."*
 - g) Photo images of the item and item parts showing no damage must be included.
2. Package test reports must be submitted to NonFoodPkgTestReports@ColonyBrands.com
 - a) Reports must be received prior to shipment of your product to any of our distribution centers. Unless otherwise specified in writing by Colony Brands, Inc. Packaging Department.
 - b) Packaged product meeting "Large" criteria are required to have package tests received prior to shipment.
 - c) Packaged product meeting "Small" criteria are required to have package tests received prior to shipment when requested in writing by Colony Brands Non-Food Packaging Department.
 - d) Package test reports that have not been received as required or requested may incur chargebacks for non-compliance.

Test Report Image Examples:



- I) All test procedures are to be followed per ISTA-1A or 3A as designated below on single unit packages (this is not to be performed on master cases).

J) Package Shock Test Procedures

a) **Drop Test:**

- ISTA-1A
- TEST BLOCK 3
- All packages

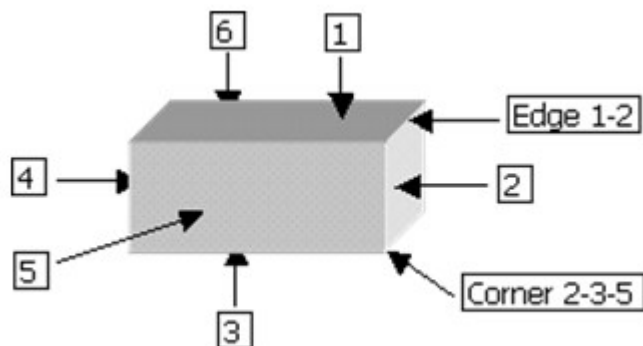
1. This test consists of a series of drops on various surfaces and corners of the package.
2. Identify edges and corners by the numbers of the surfaces that meet to form them.
3. Drop the package in the Drop Order listed. Use the Drop Height parameters, listed depending on the weight of the package.

Required Drop Height

Packaged-Product Weight				Drop Height	
Equal to or greater than		But Less than		Free Fall	
lb	kg	lb	kg	in.	mm
0	0	21	10	30	760
21	10	41	19	24	610
41	19	61	28	18	460
61	28	100	45	12	310
100	45	150	68	8	200

Drop Order

- 1) 2-3-5 corner (most fragile)
- 2) 2-5 edge
- 3) 3-5 edge
- 4) 2-3 edge
- 5) Five face
- 6) Six face
- 7) Two face
- 8) Four face
- 9) One face (top)
- 10) Three face (bottom)



b) Rotational Edge Drop:

- ISTA-3A
- TEST BLOCK 10
- Flat and Elongated packages

1. Conduct the test on a nonyielding steel or concrete base.
2. Place the package with the largest face on the test surface.
3. Support one end of the largest face so it is 4 inch (100 mm) off the test surface.
4. Lift the opposite edge that is being tested so it is 8 inch (200 mm) off the surface and release it so it falls freely onto the rigid surface.
5. Repeat the test following steps 3 and 4.
 - a. Sequence #2: Next longest edge radiating 90° from the edge just tested.
 - b. Sequence #3: The opposite edge tested in sequence #2.



c) Full Rotational Flat Drop:

- ISTA-3A
- TEST BLOCK 11
- Flat and Elongated packages

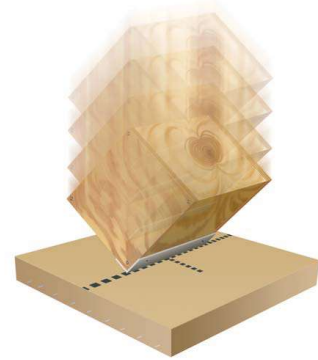
1. Place the packaged-product so that one of the smallest faces rests on a rigid surface such as steel or concrete and in a position that when pushed over the face 3 surface will impact the rigid surface.
2. Using any method apply just enough force to upper half of face 1 to push over the packaged-product without moving the packaged-product from its position.
3. Repeat the test following steps 1 and 2 above testing the next longest edge.



d) **Hazard Impact Test:**

- ISTA-3A
- TEST BLOCK 12
- Flat packages

1. Conduct the test on a nonyielding steel or concrete base.
2. Place the package with its largest surface area on the test surface.
3. Measure and mark the center of the test package in both directions.
4. Position the wooden box so that the angle-iron edge is pointed toward the package and is parallel to the shortest dimension of the largest package face. Mark the midpoint of the wooden box impact edge and ensure that it is lined up with the marked test-package midpoint.
5. The height from the bottom test edge of the hazard box to the top of the test package must be 16 inches.
6. Allow the box to fall freely and impact the package at the marked midpoints evenly.



e) **Bridge Impact:**

- ISTA-3A
- TEST BLOCK 13
- Elongated packages

1. Conduct the test on a nonyielding steel or concrete base.
2. Place the package on two 4" (100 mm) high blocks at each of the longest dimension of the package.
3. Measure and mark the center of the test package in both directions.
4. Position the wooden box so that the angle-iron edge is pointed toward the package and is parallel to the shortest dimension of the largest package face. Mark the midpoint of the wooden box impact edge and ensure that it is lined up with the marked test-package midpoint.
5. The height from the bottom test edge of the hazard box to the top of the test package must be 16 inches (400 mm).
6. Allow the box to fall freely and impact the package at the marked midpoints evenly.



K) Vibration Package Test Procedure

a) Vibration:

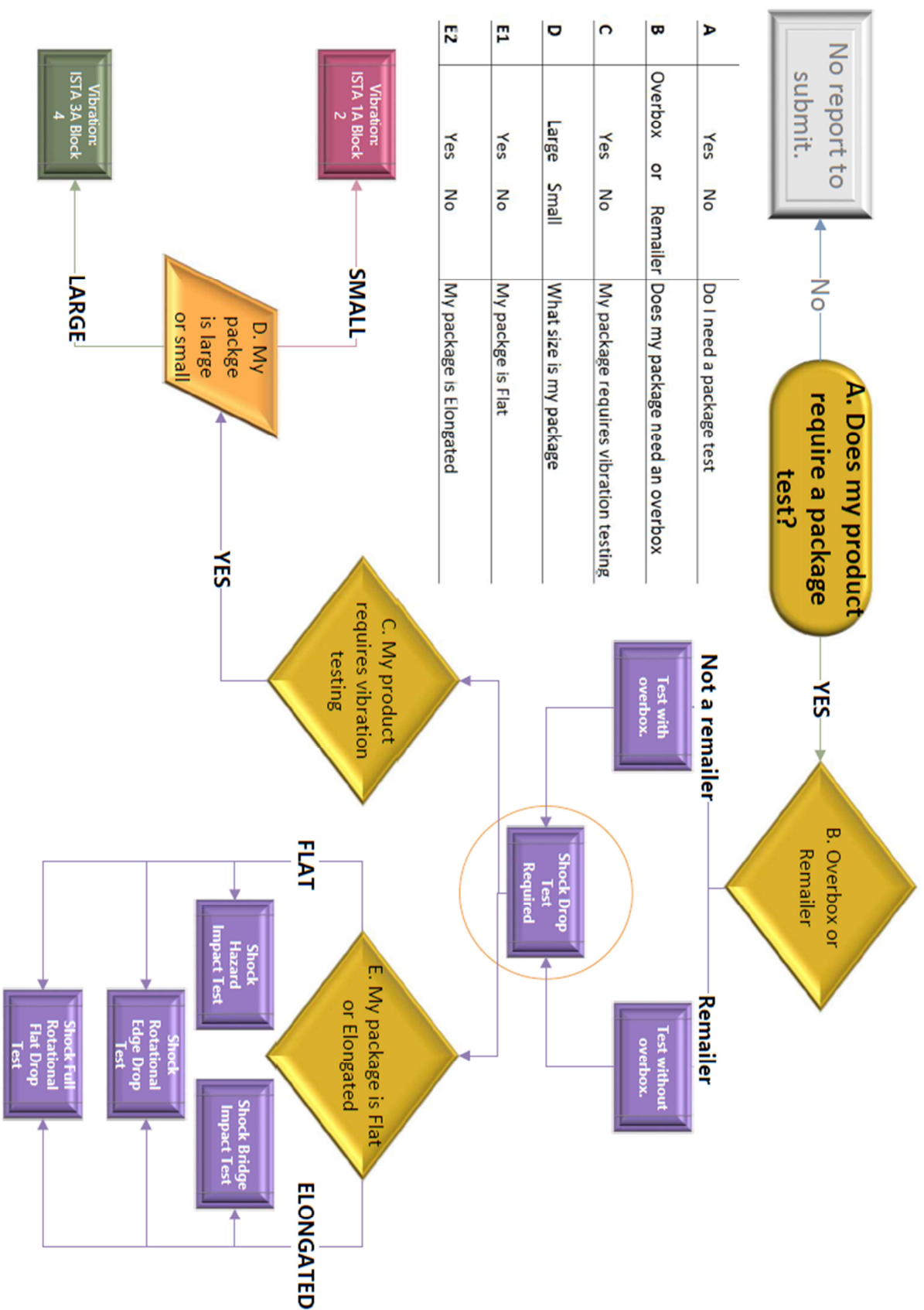
- ISTA-3A
- TEST BLOCK 4
- Packaged item that meets the size and weight criteria of “**LARGE**”

b) Vibration:

- ISTA-1A
- TEST BLOCK 2
- Packaged item that meets the size and weight criteria of “**SMALL**”

This test requires specialized equipment and is required to be performed at a certified lab or vibration test equipment that has been approved by the Colony Brands Non-Food packaging department.

Colony Brands Non-Food Package Test Flowchart





Colony Brands, Inc. Non-Food Package Testing Cover Sheet

Test Reports received without this cover sheet will be returned until cover sheet is completed and submitted with the passing test report. If your item is received at our dock without all required forms you may receive a chargeback.

Please submit all test reports with this cover sheet to: NonFoodPkgTestReports@ColonyBrands.com

Today's Date

Company Name

Contact Name

Contact Email

Factory Name

Item Description

PLN # (s)

(List all)

Notes: