



# PURPLE DIAMOND

TESTING | DESIGN | ENGINEERING

## ISTA

### ISTA 1 Series: Non-Simulation Integrity Performance Tests

<b>Procedure 1A</b>	Integrity Testing for Packaged-Products Weighing 150 lb (68 kg) or Less
<b>Procedure 1B</b>	Integrity Testing for Packaged-Products Weighing Over 150 lb (68 kg)
<b>Procedure 1C</b>	Extended Integrity Testing for Individual Packaged-Products Weighing 150 lb (68 kg) or Less
<b>Procedure 1D</b>	Extended Integrity Testing for Individual Packaged-Products Weighing Over 150 lb (68 kg)
<b>Procedure 1E</b>	Integrity Testing for Unitized Loads
<b>Procedure 1G</b>	Packaged-Products Weighing 150 lb (68 kg) or Less Utilizing Random Vibration
<b>Procedure 1H</b>	Integrity Testing for Packaged-Products Weighing Over 150 lb (68 kg) Utilizing Random Vibration

### ISTA 2 Series: Partial Simulation Performance Tests

<b>Procedure 2A</b>	Packaged-Products Weighing 150 lb (68 kg) or Less
<b>Procedure 2B</b>	Packaged-Products Weighing Over 150 lb (68 kg)
<b>Procedure 2C</b>	Furniture Packages

### ISTA 3 Series: General Simulation Performance Tests

<b>Procedure 3A</b>	Packaged-Products for Parcel Delivery System Shipment 150 lb (70 kg) or Less (Standard, Small, Flat, and Elongated Packages)
<b>Procedure 3B</b>	Packaged-Products for Less-Than-Truckload (LTL) Shipment (Standard,

	Cylindrical, and Palletized or Skidded)
<b>Procedure 3E</b>	Similar Packaged-Products in Unitized Loads for Truckload Shipment
<b>Procedure 3F</b>	Packaged-Products for Distribution Center to Retail Outlet Shipment 100 lb (45 kg) or Less (Mixed Pallet Configuration)
<b>Procedure 3H</b>	Mechanically Handled Bulk Transport Containers
<b>Procedure 3K</b>	Fast Moving Consumer Goods for the European Retail Supply Chain

#### **ISTA 4 Series: Enhanced Simulation Performance Tests**

<b>Procedure 4AB</b>	Enhanced Simulation Performance Test Plans (Web-Based Software Application)
----------------------	---

#### **ISTA 6 Series: Member Performance Tests**

<b>Project 6 AMAZON.COM SIOC</b>	Ships in Own Container (SIOC) for Amazon.com Distribution System Shipment (A-H)
<b>Project 6 AMAZON.COM Over Boxing</b>	e-Commerce Fulfillment for Parcel Delivery Shipment (Over Box)
<b>Project 6 SAMSClub</b>	Packaged-Products for Sam's Club Distribution System Shipment
<b>6-FEDEX-A</b>	FedEx Procedures for Testing Packaged Products Weighing Up to 150 lbs
<b>6-FEDEX-B</b>	FedEx Procedures for Testing Packaged Products Weighing Over 150 lbs

#### **ISTA 7 Series: Development Tests**

<b>Procedure 7D</b>	Temperature Test for Transport Packaging
<b>Procedure 7E &amp; Standard 20</b>	Thermal Transport Packaging Used in Parcel Delivery System

## ASTM

### Distribution Simulation

<b>ASTM D642</b>	Test Method for Determining Compressive Resistance of Shipping Containers, Components, and Unit Loads
<b>ASTM D880</b>	Test Method for Impact Testing for Shipping Containers and Systems
<b>ASTM D951</b>	Test Method for Water Resistance of Shipping Containers by Spray Method
<b>ASTM D999</b>	Test Methods for Vibration Testing of Shipping Containers
<b>ASTM D1185</b>	Test Methods for Pallets and Related Structures Employed in Materials Handling and Shipping
<b>ASTM D4169</b>	Practice for Performance Testing of Shipping Containers and Systems
<b>ASTM D4332</b>	Practice for Conditioning Containers, Packages, or Packaging Components for Testing
<b>ASTM D4728</b>	Test Method for Random Vibration Testing of Shipping Containers
<b>ASTM D5265</b>	Test Method for Bridge Impact Testing
<b>ASTM D5276</b>	Test Method for Drop Test of Loaded Containers by Free Fall
<b>ASTM D5277</b>	Test Method for Performing Programmed Horizontal Impacts Using an Inclined Impact Tester
<b>ASTM D5487</b>	Test Method for Simulated Drop of Loaded Containers by Shock Machines
<b>ASTM D6055</b>	Test Methods for Mechanical Handling of Unitized Loads and Large Shipping Cases and Crates
<b>ASTM D6179</b>	Test Methods for Rough Handling of Unitized Loads and Large Shipping Cases and Crates
<b>ASTM D6344</b>	Test Method for Concentrated Impacts to Transport Packages
<b>ASTM D6653</b>	Test Methods for Determining the Effects of High Altitude on Packaging Systems by Vacuum Method
<b>ASTM D7386</b>	Practice for Performance Testing of Packages for Single Parcel Delivery Systems

### Package Integrity

<b>ASTM D685</b>	Practice for Conditioning Paper and Paper Products
<b>ASTM D3078</b>	Test Method for Determination of Leaks in Flexible Packaging (Bubble Emission)
<b>ASTM D3285</b>	Test Method for Water Absorptiveness of Non-Bibulous Paper and Paperboard (Cobb Test)
<b>ASTM F88</b>	Test Method for Seal Strength of Flexible Barrier Materials
<b>ASTM F1886</b>	Test Method for Determining Integrity of Seals for Flexible Packaging (Visual Inspection)
<b>ASTM F1929</b>	Test Method for Detecting Seal Leaks in Porous Medical Packaging (Dye Penetration)
<b>ASTM F2096</b>	Test Method for Detecting Gross Leaks in Packaging by Internal Pressurization (Bubble Test)
<b>ASTM F2250</b>	Practice for Evaluation of Chemical Resistance of Printed Inks and Coatings on Flexible Packaging Materials
<b>ASTM F3039</b>	Test Method for Detecting Leaks in Nonporous Packaging or Flexible Barrier Materials (Dye Penetration)

### Package Strength

<b>ASTM F88</b>	Test Method for Seal Strength of Flexible Barrier Materials
<b>ASTM F1140</b>	Test Methods for Internal Pressurization Failure Resistance of Unrestrained Packages

### Accelerated Aging

<b>ASTM F1980</b>	Guide for Accelerated Aging of Sterile Barrier Systems and Medical Devices
-------------------	--

### Environmental Conditioning

<b>ASTM D3103</b>	Test Method for Thermal Insulation Performance of Distribution Packages
<b>ASTM D4332</b>	Practice for Conditioning Containers, Packages, or Packaging Components for Testing

## TAPPI

### TAPPI

<b>TAPPI T403</b>	Bursting Strength of Paper
<b>TAPPI T410</b>	Grammage of Paper and Paperboard (Weight Per Unit Area)
<b>TAPPI T411</b>	Thickness (Caliper) of Paper, Paperboard, and Combined Board
<b>TAPPI T412</b>	Moisture in Pulp, Paper, and Paperboard
<b>TAPPI T432</b>	Water Absorbency of Bibulous Papers
<b>TAPPI T441</b>	Water Absorptiveness of Sized (Non-Bibulous) Paper, Paperboard, and Corrugated Fiberboard (Cobb Test)
<b>TAPPI T460</b>	Air Resistance of Paper (Gurley Method)
<b>TAPPI T494</b>	Tensile Properties of Paper and Paperboard (Using Constant Rate of Elongation Apparatus)
<b>TAPPI T576</b>	Tensile Properties of Towels and Tissue Products (Using Constant Rate of Elongation Apparatus)
<b>TAPPI T802</b>	Drop Test for Fiberboard Shipping Containers
<b>TAPPI T804</b>	Compression Test of Fiberboard Shipping Containers
<b>TAPPI T807</b>	Bursting Strength of Linerboard
<b>TAPPI T810</b>	Bursting Strength of Corrugated and Solid Fiberboard
<b>TAPPI T811</b>	Edgewise Compressive Strength of Corrugated Fiberboard (Short Column Test)
<b>TAPPI T829</b>	Score Quality Test
<b>TAPPI T830</b>	Ink Rub Test of Containerboard and Corrugated Board
<b>TAPPI T837</b>	Measuring the Bond Strength of a Glued Manufacturer's Joint
<b>TAPPI T839</b>	Edgewise Compressive Strength of Corrugated Fiberboard Using the Clamp Method (Short Column Test)
<b>TAPPI T844</b>	Determining Construction (Nominal Basis Weight) of Corrugated Board