



How to Pack

Our objective is to get your shipment safely to its destination in the same condition as it was sent. You can do your part by observing a few basic tips when preparing your packages for shipment. This guide will walk you through the steps.

Pack it



Seal and label it



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Pack It: Non-Fragile, Non-Breakable Items

Single-Box Packing Method

- Ship nonfragile products like soft goods inside a sturdy outer container.
- Use fillers like crumpled newspapers, Bubble Wrap® or loose-fill peanuts to fill voids and prevent movement of goods inside the box during shipment.
- Place goods that might be affected by dirt, water or wet conditions inside a plastic bag.
- Consolidate small parts or granular spillable products in a strong, sealed container, such as a burlap or plastic bag, before shipping inside a sturdy outer container.

Bubble Wrap is a registered trademark of Sealed Air Corporation.

Examples:

Machinery parts

Footwear and apparel

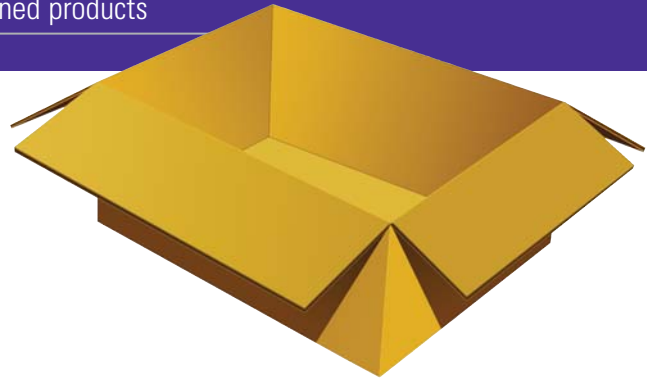
Printed matter

Canned products

Granular products

Carpeting

Tools and hardware



Sturdy box with flaps intact

SPECIAL REQUIREMENTS:

Engines, Transmissions, Lawn Equipment, Motorcycles

- Drain all fluids out of all mechanical equipment before shipping.
- Ship heavy equipment and parts in double- or triple-wall corrugated boxes or wood crates.
- Secure all removable parts, such as the dipstick, and temporarily plug the fill-tube and dipstick opening to prevent fluid seepage.

SPECIAL REQUIREMENTS:

Photos, Posterboard, X-rays

- Tape flat items onto a rigid material like plywood, plastic or layers of fiberboard pad.
- Sandwich flat printed matter between pieces of corrugated pads — preferably double-wall corrugated pads.
- Tape both pads together on all seams.

SPECIAL REQUIREMENTS:

Industrial Machinery Parts, Sheet Metal Parts

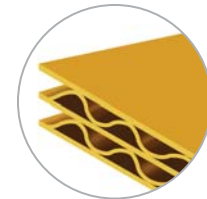
- Pad all sharp edges, corners and burrs.
- Pad or cover precision-machined areas, such as threads and fittings, to prevent damage.
- Cushion and protect all parts susceptible to dents, scuffs and scratches.
- Place documentation and routing labels on flat, clean surfaces for maximum adhesion. Avoid curved surfaces or seams.
- Place labels on the side with the largest surface area.
- Ship metal parts in double-wall corrugated boxes whenever possible and restrict movement inside the box with fillers.

Pack It: Non-Fragile, Non-Breakable Items (continued)

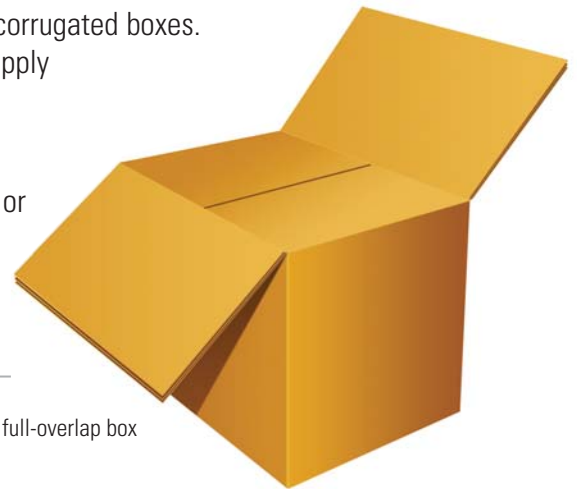
SPECIAL REQUIREMENTS:

Printed Matter

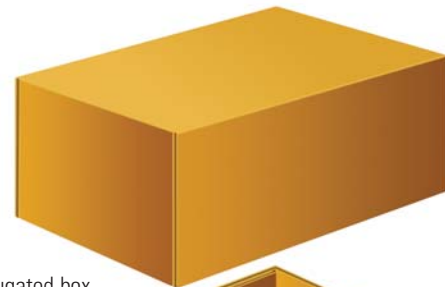
- Ship small amounts of printed matter like reports, legal briefs or correspondence in packaging supplied by FedEx, like the FedEx® Envelope, FedEx® Pak or box for FedEx Express® shipments. (Envelopes not to exceed one pound; paks and boxes not to exceed 20 pounds.)
- Bundle large quantities of loose printed matter by shrink-wrapping or banding to hold units in place in case the box splits open during transit.
- Place stacks of printed matter in double-wall, full-overlap or telescopic corrugated boxes. (Single-wall corrugated boxes, gift boxes, banker boxes or bulk paper supply boxes are not recommended.)
- Fill voids with filler to prevent movement inside the box.
- Tape the seams and the perimeter of the box using plastic packing tape or reinforced fiberglass plastic packing tape (kraft or reinforced paper tape not recommended).
- See [box strength guidelines](#) for box recommendations.



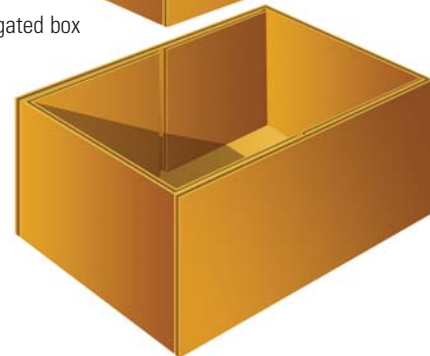
Double-wall detail



Double-wall, full-overlap box



Telescopic corrugated box



Pack It: Fragile Items

Basic Box-In-Box Packing Method

- Wrap product(s) individually with at least 2 inches' thickness of Bubble Wrap® or foam material to fit snugly inside a corrugated box.
- Use a second, outer container that is at least 6 inches longer, wider and deeper than the inner box.
- Fill the bottom of the outer box with 2 to 3 inches of cushioning material.
- Place the inner box in the center of the outer box on top of the cushioning material.
- Fill voids on all sides with more cushioning material.
- [Seal box.](#)

Bubble Wrap is a registered trademark of Sealed Air Corporation.

Examples:

Artwork

Clocks

Pottery

Glassware

Furniture

Computers

Eyeglasses

Electronics

Cushioning material

Corrugated box

Sturdy outer container



Box-In-Box Packing Method for Delicate or Thin Parts

- Wrap product(s) individually with Bubble Wrap® and snugly fit inside the smaller box.
- Restrict product movement inside the box using filler like crumpled newspapers, Bubble Wrap® or loose-fill peanuts.
- Close and tape box to prevent accidental opening.
- Wrap smaller inner box with at least 4 inches' thickness of Bubble Wrap® and place inside a sturdy outer container.
- [Seal box.](#)

Bubble Wrap is a registered trademark of Sealed Air Corporation.

Smaller inner box wrapped in 4 inches of Bubble Wrap®

Sturdy outer container



Bubble Wrap® Packing Method for Large, Thick or Flat Surfaces

- Wrap product(s) individually with at least 4 inches' thickness of Bubble Wrap® cushioning.
- Place the wrapped item(s) inside a sturdy outer box.
- Fill all voids with additional Bubble Wrap® cushioning so that the wrapped item(s) fit snugly inside the outer box.
- [Seal box.](#)

Bubble Wrap is a registered trademark of Sealed Air Corporation.

Fragile products wrapped in a minimum 4-inch thickness of Bubble Wrap®

Sturdy outer container



Pack It: Fragile Items (continued)

Box-In-Box Packing Method Using Loose-Fill Peanuts

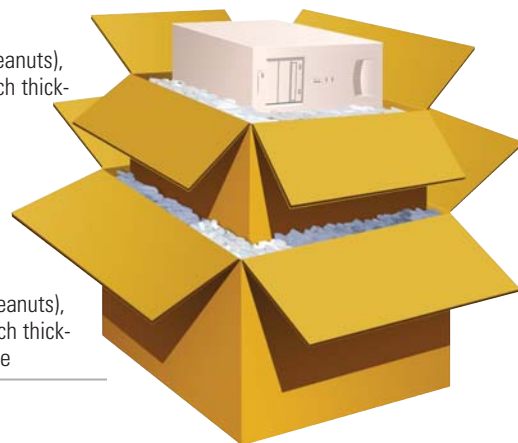
- Start with an outer box that is at least 6 inches longer, wider and taller than the original box.
- Fill outer box with 3 inches of loose-fill peanuts.
- Place inner box in the center of the outer box.
- Fill all spaces around the inner box and top with 3 inches of loose-fill peanuts.
- [Seal box](#).

Inner box

Packing material
(e.g., loose-fill peanuts),
minimum of 3-inch thick-
ness on
each side

Sturdy outer
container

Packing material
(e.g., loose-fill peanuts),
minimum of 3-inch thick-
ness on each side



SPECIAL REQUIREMENTS:

Artwork

- Apply masking tape in a crisscross pattern on the glass or Plexiglas® surface of framed artwork to prevent the glass from splintering if it should break in transit.
- Call the FedEx Packaging Design and Development Department at 1.800.633.7019 for a list of artwork-packaging manufacturers.

Plexiglas is a registered trademark of Rohm & Haas Company.

SPECIAL REQUIREMENTS:

Stringed Musical Instruments

- Loosen the tension on the strings to remove the stress on the neck of the instrument.
- Place the instrument into its case.
- Fill any voids under the neck, around the body and on top of the instrument with Bubble Wrap® to prevent movement within the case.
- Place the instrument in a larger box with a minimum of 3 inches of Bubble Wrap® or loose-fill peanuts between the inner and outer boxes if the instrument is in a soft-sided case.
- Wrap hard cases with 3 inches' thickness of Bubble Wrap® before placing in the outer box. Then fill voids with additional Bubble Wrap®.

Bubble Wrap is a registered trademark of Sealed Air Corporation.

SPECIAL REQUIREMENTS:

Computers and Peripherals

- Use the [box-in-box packing method](#) with manufacturer's original packaging.
- Wrap the equipment in Bubble Wrap® and use the box-in-box packing method using loose-fill peanuts if the manufacturer's original packaging is unavailable.

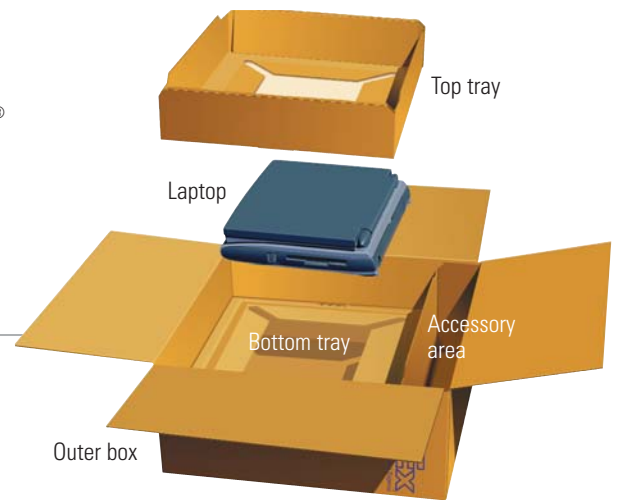
Bubble Wrap is a registered trademark of Sealed Air Corporation.

Pack It: Fragile Items (continued)

SPECIAL REQUIREMENTS:

Laptop and Notebook Computers

- Use the specially designed FedEx laptop kit when possible.
- Call 1.800.GoFedEx 1.800.463.3339 or visit a FedEx World Service Center® for FedEx laptop kits.
- Get a list of approved suppliers for large quantities of FedEx laptop kits by calling the FedEx Packaging Design and Development Department at 1.800.633.7019.



SPECIAL REQUIREMENTS:

Monitors

- Remove the base and any attachments and ship the monitor face-down.
- Follow packing tips for the [box-in-box packing method](#).

SPECIAL REQUIREMENTS:

Printers

- Remove printing cartridge before shipping.
- Place cartridges inside sealed plastic bags to prevent ink or powder leakage.
- Tape down moving parts.
- Remove any paper trays and pack separately.
- Follow packing tips for the [box-in-box packing method](#).

SPECIAL REQUIREMENTS:

Servers, Routers

- Call the FedEx Packaging Design and Development Department at 1.800.633.7019 for appropriate packing recommendations, since values, weights and sizes vary.

SPECIAL REQUIREMENTS:

Magnetic Storage Devices

- Allow 3 to 6 inches of voids inside the shipping container to reduce intensity of magnetic fields that may come into contact with the shipment.
- Label the package with a message like "Keep away from magnetic material" to help prevent it from being placed in close proximity to other radioactive or highly magnetized shipments.

Pack It: Odd- or Irregular-Shaped Items

General Shipping Recommendations

- Consider placing items that might be damaged by adhesive labels or soiling in an outer container. (FedEx will not be liable for such damage to unprotected items.)
- Wrap sharp edges or protrusions with tape.
- Place rolled goods in protective wrap.

Special Requirements for FedEx Ground® Shipments

- Wrap pressure-sensitive tape completely around the object to provide a wide, smooth surface to [apply the bar code and address label](#).

Special Requirements for FedEx Express® Shipments

- [Attach a tie-on tag](#) for airbill pouches.
- Order tie-on tags by calling 1.800.GoFedEx 1.800.463.3339.
- Consult a list of [items that require tie-on tags](#).

Examples:

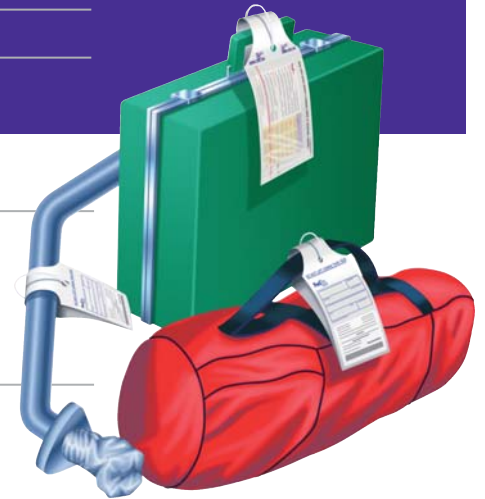
Luggage

Tires

Rugs

Automotive parts

Transit cases



Pack It: Perishables

Keeping Products Frozen During Transit

- Freeze products prior to packaging.
- Precool the expanded polystyrene (EPS) insulated container.
- Double-bag products if the shipment contains liquid or perishables that might melt or thaw. Use a 2-mil watertight plastic bag or line the inside of an EPS container with a minimum 2-mil plastic liner and absorbent material.
- Arrange products compactly but leave space around the products for dry ice.*
- Place a sufficient amount of dry ice in the insulated container on top of and around the products.

Note: Use 3 to 4 pounds of dry ice for every cubic foot of container volume per 24 hours in an EPS container with 2-inch-thick walls. Additional dry ice may be needed during hot-weather months.

*Dry ice is considered a hazardous material for air transport and requires special handling. Please call 1.800.GoFedEx 1.800.463.3339 and ask for the Dangerous Goods/Hazardous Materials Hotline for more information.

Keeping Products Refrigerated During Transit

- Freeze the coolants according to manufacturer's guidelines.
- Precool the expanded polystyrene (EPS) insulated container.
- Double-bag products if the shipment contains liquid or perishables that might melt or thaw. Use a 2-mil watertight plastic bag or line the inside of the EPS container with a minimum 2-mil plastic liner and absorbent material.
- Arrange products compactly inside the insulated container, allowing space for coolants.
- Place a sufficient amount of coolants on top of and around the product. Fill voids with filler to prevent product movement.
- Close and securely seal the insulated container with pressure-sensitive plastic tape.
- Place the insulated container inside a corrugated outer box, unless you have been approved to ship without the outer box.
- Close and seal the corrugated box with pressure-sensitive plastic tape. Apply tape all over box flaps and seams to restrict air movement.

Examples:

Meats

Fruits

Plants

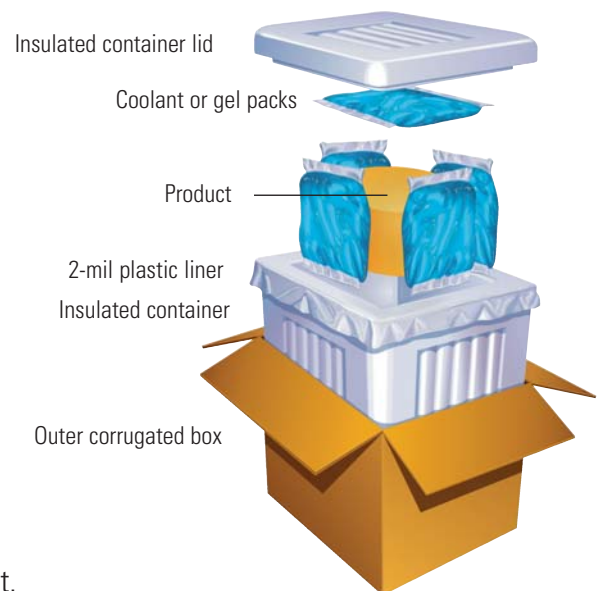
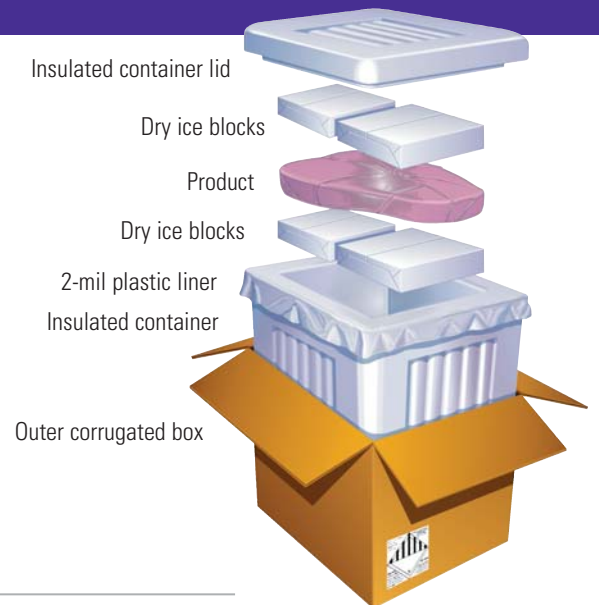
Seafood

Chemicals

Foodstuffs

Cut flowers

Specimens

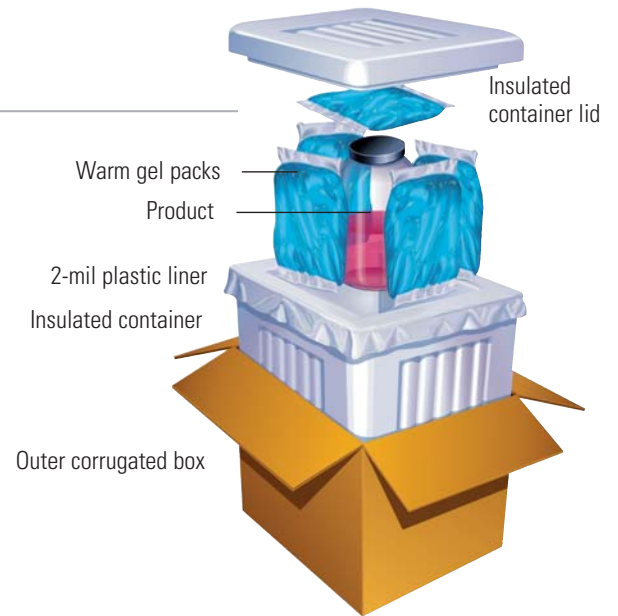


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Pack It: Perishables (continued)

Protecting Products From Freezing

- Place products inside an insulated container and surround them with room-temperature or slightly warmer gel packs.
- Ship the insulated container inside a corrugated box.
- Validate by sending a test package to yourself to ensure desired performance.

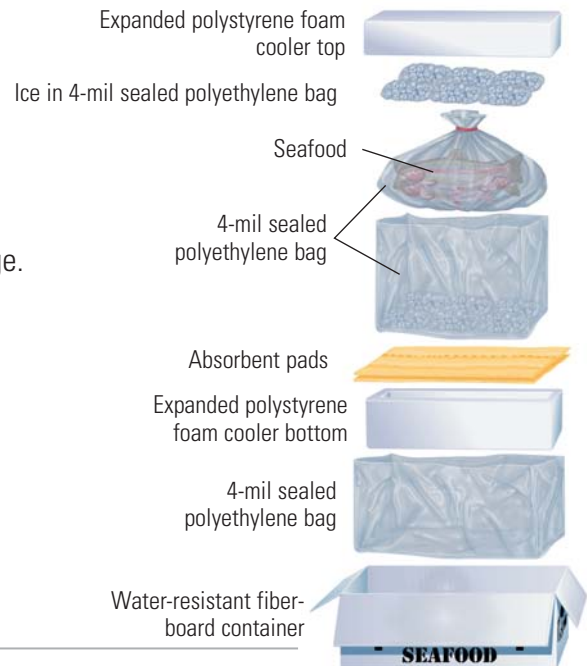


Requirements for Perishable Shipments With Wet Ice

- Use 3 bags of minimum 4-mil thickness for packing.
- Use one bag to contain the perishable product (e.g., seafood, meat).
- Use the second bag to hold the ice.
- Use the third bag to line the inside of the outer container.
- Seal each bag securely with wire or cable ties to prevent leakage.

Note: All wet-ice shipments must be approved by the FedEx Packaging Design and Development Department. All wet-ice shipments must be shipped via FedEx Priority Overnight® service.

Note: “Pointers on Packaging of Perishable Shipments” booklets are available. Call the FedEx Packaging Design and Development Department at 1.800.633.7019 or download the booklets at fedex.com.

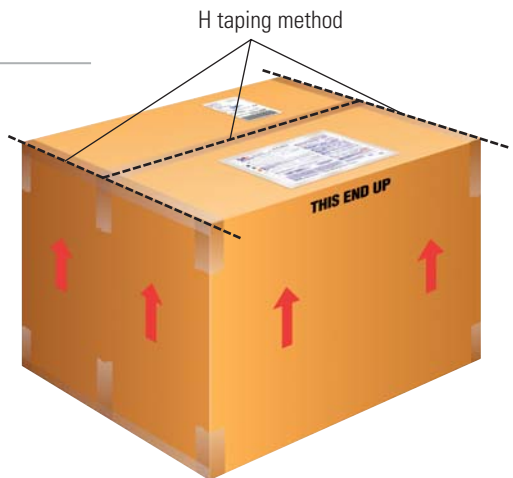


Seal and Label It

Recommended Three-Strip Taping Method

- Use pressure-sensitive plastic tape at least 2 inches wide (3-inch width preferred) for lightweight packages.
- Use water-activated paper tape (minimum 3-inch width, 60-pound grade) or water-activated reinforced tape to seal heavier packages.
- Distribute the tape evenly across flaps and seams, using the H taping method shown.
- Apply at least 3 strips of tape to the top and bottom sides of the carton.
- Tape across all seams and flaps.

Note: Sealing your package is as important as cushioning. If the box flaps open in transit, you're likely to lose the cushioning.



Restricted Taping and Sealing Materials

- Avoid kraft paper tape, household cellophane tape, masking tape, string or rope. Using these materials may result in torn or missing labels and/or damage to the package.

General Labeling Recommendations

- Use an address label that has recipient's full address and your full address clearly marked.
- Make sure country or state, ZIP or postal code and street addresses are correct; FedEx cannot deliver to a P.O. box.
- Identify floor, suite or apartment numbers for multi-unit addresses.
- Remove or cross out any old address labels on the carton.
- Include duplicate delivery information inside the package.
- Apply package labels and packing slips facing the same direction on the same side of the package.
- Avoid seams and closures when applying your address labels.
- Avoid carbon-copy or stenciled labels unless you cover them with clear pressure-sensitive tape; they can smear and cause delays in delivery.

Note: FedEx cannot ensure compliance with orientation markings such as "Up" arrows or "This end up" descriptions. However, placing labels on the top surface of the package increases your chances for preferred orientation.

(continued)

Seal and Label It (continued)

General Labeling Don'ts

- Don't cover sender or recipient information with labels or an airbill.
- Don't place tape or shrinkwrap over labels.
- Don't wrinkle, scratch or mark the label or bar code.
- Don't place labels on airbill pouches.
- Don't wrap a label around the corner or directly on the edge or seam of the package.

Special Requirements for FedEx Ground® Shipments

- Place bar-code label on the largest side of your package as close to the address label as possible.
- Try to keep the label more than 4 inches from the edge of the package.
- Affix the bar-code label to the longest side of an elongated package or to the largest side of a package that does not have a flat top.
- Avoid placing the bar code on a fly tag or on the end of a long package, top of a tall package or corner of a large package.
- Avoid placing the bar code over an edge, on a seam or on a rough package surface.
- Avoid shrinkwrapping or placing straps or clear tape over or near the bar-code label.



(continued)



Seal and Label It (continued)

Special Requirements for FedEx Express® Shipments

- Place the airbill or FedEx shipping label on the largest surface of the container.
- Apply pressure to all adhesive tapes and labels to make sure they stick to the carton.

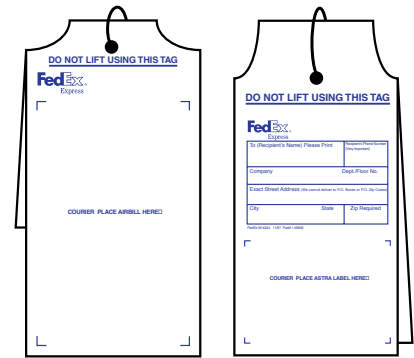
If a product cannot be shipped in a corrugated box, attach the appropriate FedEx tie-on tag for an airbill pouch or a tie-on tag for labels.

Note: You can order more tags by calling 1.800.GoFedEx 1.800.463.3339.

Items That Require Tie-On Tags

Any shipment where the label will not properly adhere to the surface or any product with a handle, for example:

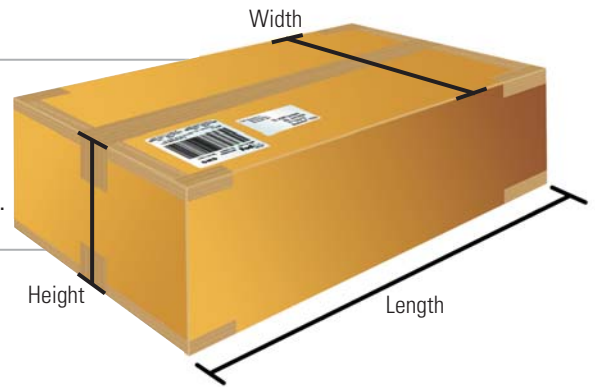
- Canvas bags
- Convention cases
- Expo display cases
- Golf-club bags
- Sports equipment
- Legal and pilot briefcases
- Reels and spools
- Plastic coolers
- Dewar containers
- Luggage
- Trade-show display cases
- Plastic carrying cases
- Ski bags
- Hard-side transit and equipment cases
- Soft-sided garment bags and duffle bags
- Movie film shipping containers
- Soft-sided coolers
- Unpackaged automotive and machine parts



Size and Weight Limits

The Length and Girth Formula

- Measure the length, height and width of the package.
- Length and girth equals length plus twice the height plus twice the width.



Maximum Dimensions for Shipping With FedEx Express

- 150 lbs. or less in weight.
- 119 inches or less in length.
- 165 inches in length and girth combined. (Use the length and girth formula.)

Place packages smaller than 7 inches in length, 4 inches in width and 2 inches in depth in a FedEx® Pak, except where otherwise restricted.

Maximum Dimensions for Shipping With FedEx Ground

- 150 lbs. or less in weight (70 lbs. for FedEx Home Delivery®).
- 108 inches or less in length.
- 165 inches in length and girth combined. (Use the length and girth formula.)

A package weighing less than 30 lbs. and measuring greater than 84 inches, but equal to or less than 108 inches in length and girth is classified by FedEx Ground as an Oversize 1 (OS1) package. The shipping charges for an OS1 package will be the same as a 30-lb. package being shipped under the same circumstances.

A package weighing less than 50 lbs. and measuring greater than 108 inches, but equal to or less than 130 inches in length and girth is classified by FedEx Ground as an Oversize 2 (OS2) package. The shipping charges for an OS2 package will be the same as a 50-lb. package being shipped under the same circumstances.

A package weighing 150 lbs. or less and measuring greater than 130 inches in length and girth is classified by FedEx Ground as an Oversize 3 (OS3) package. The shipping charges for an OS3 package will be based on the greater of the package's actual rounded weight or a 90-lb. minimum billable weight. An oversize charge of \$30 per package will also apply to any package measuring greater than 130 inches in length and girth.

(continued)

Size and Weight Limits (continued)

Box Strength Guidelines

An outer box should be a rigid carton in good condition, flaps intact. Use this box selection chart to determine the maximum content weight allowed for the outer box.

Note: The printed weight on the box stamp may not be accurate and may differ from the FedEx maximum recommended limits.

FedEx Box Strength Guidelines			
Maximum Weight of Contents (lbs.)	Size Limit of Box (inches) L+W+H	Bursting Test (lbs. per sq. in.)	Edge Crush Test (ECT) (lbs. per in. width)
Single-Wall Corrugated Containers			
30	75	200	32
40	75	200	40
50	85	250	44
65	95	275	55
80	105	350	NA
Double-Wall Corrugated Containers			
60	85	200	48
80	95	275	51
100	105	350	61
120	110	400	71
140	115	500	82
150	120	600	NA

Restricted Shipments

Regulatory and Safety Issues

FedEx has restrictions on shipments of certain commodities due to regulatory laws or concerns about personnel safety. We've included a list of commodities that fall under those restrictions. Consult the current FedEx Service Guide on **fedex.com** for additional information.

- Live fish
- Clinical specimens
- Batteries
- Currencies
- Wine
- Human parts
- Tobacco
- Used medical devices
- Alcoholic beverages
- Firearms

Hidden Dangerous Goods

While not obvious, these items are classified as Hidden Dangerous Goods and should not be shipped.

- Breathing apparatus — compressed oxygen
- Camping gear — flammable gas or liquid
- Dental apparatus — hazardous chemicals, resins or solvents
- Cylinders — compressed gas
- Photographic supplies — dangerous chemicals, inks
- Household goods — flammable household liquids, liquid lighters, bleaching powders, aerosol paints
- Car batteries — corrosive, explosive
- Fireworks — flammable substance
- Matches — flammable substance
- Aerosol sprays — compressed gas
- Nail polish — chemical
- Nitrogen-refrigerated liquids — compressed gas

Note: For more information, contact the Dangerous Goods/Hazardous Materials Hotline at 1.800.GoFedEx 1.800.463.3339 and press "81."

Shipping Hazardous Materials With FedEx Ground

Certain hazardous materials are accepted for ground transport within the continental U.S. Refer to the current FedEx Service Guide on **fedex.com** for details.

(continued)

Restricted Shipments (continued)

Shipping Liquids With FedEx Ground

- Avoid containers sealed with friction-top closures.
- Choose screw caps, clips or containers that have been soldered closed.
- Note that a manufacturer's tamper-evident seal over the bottle opening is recommended.
- Select internal packaging that will contain any leakage that may occur during transit.
- Get verification in writing from your cap and/or bottle supplier that the application torque and heat seal are compatible with your product.
- Consult Department of Transportation (DOT) and Performance Oriented Packaging (POP) mandates to ensure that shipment of any liquid hazardous materials meets regulations.

Shipping Pointers Checklist

Final Questions to Ask Before Shipping

- Did you use a sturdy box that meets [box strength guidelines](#) and has all flaps intact?
- Did you wrap contents properly?
- Did you use adequate cushioning material for your [packing method](#)?
- Did you seal all box seams with the [tape recommended for your package](#)?
- Did you provide complete delivery and return address information following [general labeling recommendations](#)?
- Did you include duplicate delivery information inside the package?
- Did you apply all labels correctly, as described in the special requirements for [FedEx Ground® shipments](#) and [FedEx Express® shipments](#)?