

Packaging Information and Recommended Handling of Optical Fiber Spools, Spool Covers, Corrugated Boxes, and Plastic Shipping Totes

Application Note

AN3037

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General

The combination of shipping spool, spool cover, and corrugated box (or plastic shipping tote) along with a proper packaging and handling procedure, protects the fiber during shipping and handling.

Shipping Spool and Spool Cover

All fibers are parallel wound flange-to-flange under controlled tension on plastic shipping spools. A nominal wind tension is sufficient to maintain wind integrity during shipment and storage.

Shipping Container

All spools of Corning Optical Fiber are packed in ISTA (International Safe Transit Association) tested corrugated boxes or plastic shipping totes. Either package can accommodate 8 single-wide or 4 double-wide spools per box. See Figure 1 for details on Corning's plastic shipping tote and Figure 2 for details on Corning's corrugated shipping box.

Pallet Stacking

Corning has deemed it acceptable to double stack full pallets as adequate testing has shown the strength and reliability of our corrugated boxes to be able to withstand the load. Part of Corning's shipping process is to double stack full pallets (16 boxes) for ocean shipments. Containers are usually full to mitigate any movement or toppling of the top pallet. Partially full containers are protected from toppling by locking the load to the inner wall of the container. Air shipments will not be double stacked as air containers are frequently not full which could induce the top pallet to fall into the free space of the container. Air shipments will be placed with "do not stack" labels to eliminate pallet stacking on a plane. It is not intended to prevent stacking in warehouses, only during transport. Please be mindful when double stacking full pallets within your facility to ensure against toppling. At this time, Corning does not recommend triple stacking full pallets.

Package Recycling Program

For customers receiving shipments in plastic totes and for certain regional customers receiving shipments in corrugated boxes, Corning offers a recycling service. This service allows the customers to return the packaging to a pre-assigned location for recycling. Unless requested by Corning, customers receiving corrugated box shipments are solely responsible for the proper recycling or disposal of pallets, spools, spool covers, and corrugated boxes in accordance with all applicable local laws, rules, codes and other regulations; and will indemnify and hold harmless Corning from and against any and all cost and expenses that Corning may incur as a result of any violation. Material Safety Data Sheets (MSDS) are available for all packaging upon request. Customers should contact their local account representative to learn if they are in a pre-assigned collection region.

The Corning logo is a dark blue square with the word "CORNING" in white, uppercase, sans-serif font centered within it.

CORNING

Recommended Handling Procedure

Pallet Unloading

- Remove the plastic stretch wrap from the pallet, being careful not to cut into the corrugated box or plastic tote.
 - Note: If individual boxes or totes are banded, be careful not to cut the box or tote when removing the banding material.
- To remove a plastic tote from the pallet, push to the side with two hands to free the tote from the nested lock pattern. The tote will now slide easily across the totes below.
- Unload the box or tote from the pallet using safe handling/lifting procedures.

Unpacking Plastic Shipping Container

- Figure 1 “How to Unpack, Transport, Store, and Refurbish Optical Fiber spools, covers, and Plastic Totes” is an illustration of the recommended plastic shipping tote handling procedure.
 - Note: If totes are banded, be careful not to cut the tote when removing the banding material.
- Since the top and bottom halves of the shipping tote are identical, the top is indicated by a faint arrow on the “ship-to” label.
- Once the tote is open, remove spools and covers from the tote using the spool cover handle. Spools with fiber should never be returned to the plastic tote without the spool cover. The cover protects the fiber from accidental indentations and abrasions. Disruptions to the wind pattern may cause problems during processing or, if severe enough, fiber breakage.
- It is recommended that the spool cover remain on the spool during storage, transport and general handling. It can be easily removed for processing and the UV inhibitor prevents yellowing in storage.

Unpacking Corrugated Shipping Container

- Figure 2 “How to Unpack, Transport, Store, Optical Fiber Spools, Covers, and Corrugated Boxes” is an illustration of the recommended corrugated box handling procedure.
 - Note: If individual boxes are banded, be careful not to cut the box when removing the banding material.
- Lift the box lid straight up to avoid contact with the fiber reels and remove the top corrugated sheet(s).
- Once the box is opened, remove spools and covers from the tote using the spool cover handle. Spools with fiber should never be returned to the corrugated box without the spool cover. The cover protects the fiber from accidental indentations and abrasions. Disruptions to the wind pattern may cause problems during processing or, if severe enough, fiber breakage.
- It is recommended that the spool cover remain on the spool during storage, transport and general handling. It can be easily removed for processing and the UV inhibitor prevents yellowing in storage.

Spool Cover Removal

- Figure 2 contains an illustration of the recommended spool removal and handling procedure.

Shipping and Storage Procedures

- All spools of fiber must be properly packaged before shipping – spools enclosed by spool covers and placed inside a corrugated box or plastic shipping tote.
- It is recommended that all boxes and totes be palletized prior to shipment and remain palletized throughout transport. Corrugated boxes and plastic totes must be firmly banded and/or stretch wrapped to the pallet.
- All labels on totes/boxes must face outward so they can be easily read by the customer.
- Shipments must be handled with care. Mishandling of boxes/totes can cause damage to spools and/or winding defects in the fiber.
- Boxes/totes must remain in proper orientation. Boxes/totes must not be stored or transported upside down or on their sides.
- Boxes/totes must be kept dry during transport and storage.
- Boxes/totes shall be stacked no more than four high on Corning plastic pallets and more than two high on paper pallets.

In order to maintain optimum wind quality for extended periods of time, Corning recommends a storage temperature range of 20°C to 35°C, at <98% relative humidity. Corning also recommends a minimum 24-hour acclimation period to a customer's ambient environment before attempting to process (unwind) the fiber from the shipping spool.

Documentation

The documentation generated for each order of optical fiber may include:

- An acknowledgement confirming the purchase order that is electronically distributed or mailed directly to the customer following order placement.
- Fiber Data Delivery (FDD) is electronically distributed.

Shipping Container Dimensions and Weights

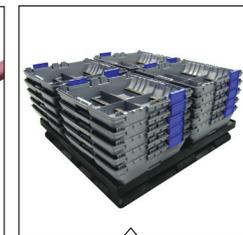
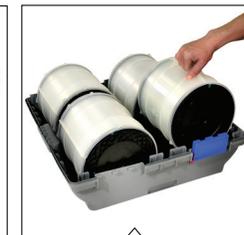
	Length in (cm)	Width in (cm)	Height in (cm)	Max Weight (1) lb (kg)
Plastic Tote	25.3 (64.1)	22.3 (56.5)	11.5 (29.2)	48.0 (21.8)
Corrugated Boxes	23.5 (59.7)	22.9 (58.4)	11.5 (29.2)	41.2 (18.7)

(1) Based on full container with four 50.4 km reels.

Corning optical fiber is shipped palletized and film wrapped, with a maximum of 16 boxes/totes per pallet.

Figure 1:
How to Unpack, Transport, Store, and Refurbish Optical Fiber Spools, Covers, Plastic Totes

Unpacking Totes

			
<p>Do: Remove stretch-wrap from palletized totes</p>	<p>Do: Lift the tote lid straight up to avoid contact with fiber reels</p>	<p>Do: Stack plastic totes, nested 13 high x 2 deep x 2 wide on pallet with top most lid reversed, for easy storage and double-stacking in trailers</p>	<p>Do: Remove spool and cover from tote by handle</p>

		
<p>Do: Secure spool at arbor hole, unclip the spool cover, and remove</p>	<p>Don't: Cut the totes while removing the stretch wrap</p> 	<p>Don't: Lift spool by the flanges</p> 

Transporting Optical Fiber Reels

			
<p>Do: Transport spools while in cover by cover handle</p>	<p>Do: When handling spools without a cover, support from arbor holes; transport in upright position (flanges vertically)</p>	<p>Don't: Transport spool by the flanges</p> 	<p>Don't: Touch the fiber with fingers or foreign objects</p> 

Storing Optical Fiber Reels

			
Do: Store in provided covers in upright position (flanges vertical)	Do: Allow product to reach room temperature before usage (24 hours typical, holding time may vary depending on starting temperature)	Don't: Allow temperatures to exceed 45°C or below 15°C	Don't: Store with flanges horizontal
			

Refurbishing Optical Fiber Reels in North America

					
Do: Leave remnant fiber on spool	Do: Put cover back on spool	Do: Place spools in pallet box provided by refurbisher—empty spools may be returned with flanges horizontal then place pallet boxes and totes in refurbisher's trailer	Do: Stack plastic totes, nested 13 high x 2 deep x 2 wide on original pallet with top most lid reversed, for easy storage and double-stacking in trailers	Do: Stretch-wrap totes to pallet	Don't: Apply labels or tape to flanges of spool
					

		
Don't: Mark or write on spool	Don't: Cut spool	Don't: Damage spool foam
		

Figure 2: How to Unpack, Transport, Store, and Refurbish Optical Fiber Spools, Covers, Corrugated Boxes

Unpacking Corrugated Boxes

<p>Do: Remove stretch-wrap and plastic band from palletized boxes</p>	<p>Do: Lift the box lid straight up to avoid contact with fiber reels</p>	<p>Do: Remove spool and cover from box by handle</p>	<p>Do: Secure spool at arbor hole, unclasp the spool cover, and remove</p>	<p>Don't: Cut the boxes while removing the stretch wrap</p> 	<p>Don't: Lift spool by the flanges</p> 

Transporting Optical Fiber Reels

<p>Do: Transport spools while in cover by cover handle</p>	<p>Do: When handling spools without a cover, support from arbor holes; transport in upright position (flanges vertically)</p>	<p>Don't: Transport spool by the flanges</p> 	<p>Don't: Touch the fiber with fingers or foreign objects</p> 

Storing Optical Fiber Reels

<p>Do: Store in provided covers in upright position (flanges vertical)</p>	<p>Do: Allow product to reach room temperature before usage (24 hours typical, holding time may vary depending on starting temperature)</p>	<p>Don't: Allow temperatures to exceed 45°C or below 15°C</p> 	<p>Don't: Store with flanges horizontal</p> 

Recycling Optical Fiber Reels and Corrugated Boxes



Do:
Put cover back on spool



Do:
Place spools in original box



Do:
Place lid on box



Do:
Stack boxes
4 high x 2 deep x 2 wide
on original pallet



Do:
Stretch-wrap boxes to pallet



Do:
Apply recycle return label
and schedule pick-up



Don't:
Apply labels or tape
to flanges of spool
or write on spool



Don't:
Cut spool
or damage spool foam



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