

Corrugated Board Specifications

To ensure packages get to either Walmart DCs or FCs and to customers in good condition, Walmart has developed the following corrugated board specifications to help maximize the product packing process and minimize damage. The corrugated box chosen must be able to withstand the entire shipping cycle and still retain its protective qualities.

Material Testing

Material testing is critical. Case packs must follow liner weights and box burst tests indicated in Rail Rule 41, using the table on the following pages for minimum requirements. Most large-scale corrugated manufacturers have testing capabilities, either in-house or outsourced.

Gross Weight Limit

This specifies the maximum weight the completely packaged box can contain. This weight limit is published and recognized by the National Motor Freight Industry and is tailored to full truckload and less than truckload carriers.

Specifications for Corrugated Boxes

The chart on the following pages establishes a minimum standard burst test or ECT (edge crush test), depending on the certification test method utilized by the box manufacturer.

These specifications are derived from the National Motor Freight Classification: Item 222. It is the Supplier's responsibility to adequately test and maintain documentation that the boxes produced meet or exceed the strength test certified in BMC printed on the box.

200# Mullen Board Grade - **required**

Palletized displays must be produced with a minimum of 200# Mullen board grade.

Caliper Specifications

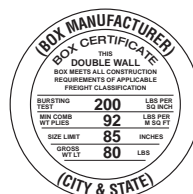
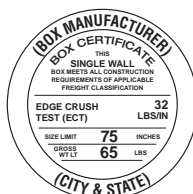
A caliper is a commonly used measurement for corrugated packaging and is a good predictor of performance.

The chart of industry-standard calipers on the following pages is to be used as a target for caliper and flute formation for the commonly used corrugated flute types: **A, B, C, B/C, A/C**.

This chart is not all-encompassing, as there are a variety of flute types. It is intended to focus on the most commonly used types for shipping cases and displays.

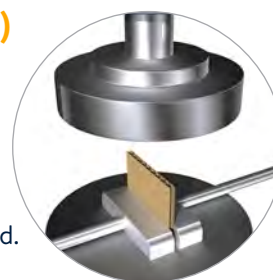
Box Maker's Certificate (BMC)

A BMC is **required** to be printed on all corrugated cases. The BMC strength should be appropriate for the product weight with a minimum rating of 200 lbs. per square inch.



Edge Crush Test (ECT)

A corrugated board test to determine the force that will crush a standard-sized board standing on an edge. ECT indicates the probable compression strength of the container made from the board.



Mullen (Burst) Test

A corrugated board test to measure the pressure required to puncture a sheet of corrugated board as an indicator of its load carrying capacity under specific conditions.



Example (reference chart on following page):

Master Case + Contents = 57 lbs

Measures 39" + 23.6" + 18" = 80.6

1. Using column 2, the correct max loading item is 66-80 lbs.
2. The total girth of this case is 80.6 in. NOTE: This moved to the next higher column as it exceeds the max 75 in. scale.
3. The correct minimum corrugated rating is 250 psi burst strength or 40 ECT.
4. You may achieve the correct corrugated rating using a number of different flute sizes and combinations. Use the charts on the following pages to determine an acceptable combination.



Walmart Automation Compliance

Automation Eligible Case Limits:

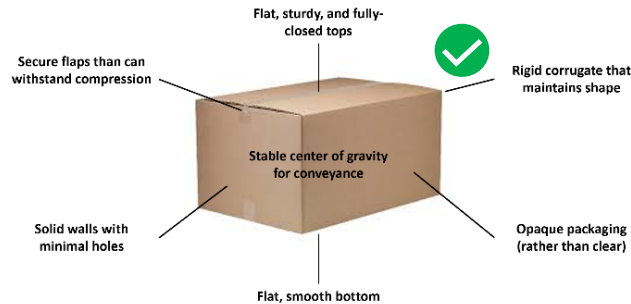
Dimensions		Length [in]	Width [in]	Height [in]	Weight [lbs.]	Aspect Ratio
Ambient Cases	Max	36	24	16	50	1.6
	Min	6.4	5	2	1	
Refr / Frozen Cases	Max	26	20	19	50	1.7
	Min	6	4	2	2	



Aspect Ratio = Height / Width

Case Quality:

Sturdy Corrugated/Flat Sides
 No Loose Wrap/Tape > 0.25"
 No Sides Bulging > 0.25"
 No Open Flaps
 No Collapsed Tops, Edges



Case Barcode Compliance

A 14-digit GTIN barcode is required to be on a minimum of 2 sides of every case
 The symbology of the barcode is required to be ITF-14 or GS1-128 w/ appropriate application identifiers
 Barcode must be min height = 0.75" & min length = 3"
 Barcode is required to be at least (0.75") from the edge of the case and (1.25") from bottom of the case
 Black ink is required and inkjet printing on corrugate is not advised
 Print quality must meet or exceed ANSI Grade B on print and apply labels, and C on direct carton printing
 Barcode must match the "orderable" GTIN field published to Item 360



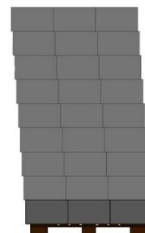
Pallet Quality:

No Split/Broken Boards
 No Raised Nails
 No Tier/Slip Sheets w/ Holes



Pallet Build:

No Leaning/Overhanging Freight or debris > 0.5"
 No Glue Between Layers of Boxes
 No Glued/Stapled Slip Sheets
 No stretch wrap tails
 Maintain Even Layers w/ No Chimney Gap



Validating your packaging meets ISTA standards is critical to the success of your product throughout the Walmart Supply Chain. For more information regarding package testing please see the [General Requirements](#) section of the Walmart Supply Chain Standards. For general packaging, labeling and barcode questions or approvals please contact WMBBarcodeLabeling@walmart.com.

Corrugated Board Specifications, cont...

Max. weight of box and contents (lbs.)	Max. outside dimensions (length + width + depth) in inches	Min. combined weight of facings, including center facings of double wall and triple wall board (lbs. per 1,000 sq. ft.) Min. combined weight of plies, solid fiberboard, excluding adhesives (lbs. per 1,000 sq. ft.)	Min. burst test, single wall or solid fiberboard (lbs. per sq. inch) Min. puncture test, triple wall board (inch oz. per inch of tear)	Min. edge crush test (lbs. per inch width)
SINGLE WALL CORRUGATED FIBERBOARD BOXES				
65	75	84	200	32
80	85	111	250	40
95	95	138	275	44
120	105	180	350	55
DOUBLE WALL CORRUGATED FIBERBOARD BOXES				
80	85	92	200	42
100	95	110	275	48
120	105	126	350	51
140	110	180	400	61
160	115	222	500	71
180	120	270	600	82
TRIPLE WALL CORRUGATED FIBERBOARD BOXES				
240	110	168	700	67
260	115	222	900	80
280	120	264	1100	90
300	125	360	1300	112
SOLID FIBERBOARD BOXES				
20	40	114	125	N/A
40	60	149	175	N/A
65	75	190	200	N/A
90	90	237	275	N/A
120	100	283	350	N/A

Corrugated Board Specifications, cont...

Corrugated Material Caliper Specifications in SAE and Metric (Mullen)

1. Allow .015 cm less than normal for printed areas.
2. Where not specified, medium weight is 30# per msf or 147 grams per square meter.

Single wall board grade		A-flute		B-flute		C-flute	
Lbs.	Kg/cm	In	Cm	In	Cm	In	Cm
125#	8.8	.193	.495	.113	.290	.151	.387
150#	10.5	.195	.500	.115	.295	.153	.392
175#	12.3	.199	.510	.119	.305	.157	.392
200#	14.1	.201	.515	.121	.310	.159	.408
200# + 33# medium	14.1 + 161 GSM medium	.204	.523	.123	.315	.162	.415
200# + 36# medium	14.1 + 176 GSM medium	.206	.528	.124	.318	.164	.421
200# + 40# medium	14.1 + 195 GSM medium	.207	.531	.125	.321	.165	.423
250#	17.6	.207	.531	.127	.326	.165	.423
250# + 33# medium	17.6 + 161 GSM medium	.210	.538	.129	.331	.168	.431
250# + 36# medium	17.6 + 176 GSM medium	.212	.544	.130	.333	.170	.436
250# + 36# medium	17.6 + 195 GSM medium	.213	.546	.131	.336	.171	.438
275#	19.3	.213	.546	.133	.341	.171	.438
275# + 33# medium	19.3 + 161 GSM medium	.216	.554	.135	.346	.174	.446
275# + 36# medium	19.3 + 176 GSM medium	.218	.559	.136	.349	.176	.451
275# + 40# medium	19.3 + 195 GSM medium	.219	.562	.137	.351	.177	.454
350#	24.6	.223	.572	.143	.367	.181	.464
350# + 33# medium	24.6 + 161 GSM medium	.226	.579	.145	.372	.184	.472
350# + 36# medium	24.6 + 176 GSM medium	.228	.585	.146	.374	.186	.477
350# + 40# medium	24.6 + 195 GSM medium	.229	.587	.147	.377	.187	.479

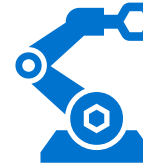
Double wall board grade		B/C-flute		A/C-flute	
Lbs.	Kg/cm	In	Cm	In	Cm
200#	14.1	.258	.662	.338	.867
275#	19.3	.264	.677	.344	.882
350#	24.6	.274	.703	.354	.908
500#	35.2	.294	.754	.374	.959
600#	42.2	.308	.790	.388	.995

Case Quality



Case Characteristics	Automation Eligible	Automation Ineligible	Not Acceptable
Within the automation eligible dimensional/weight limits	✓		
Flat, sturdy corrugated packaging	✓		
Tight fitting, supported shrink wrap packaging	✓		
Product with tapered sides, but flat top and bottom surfaces (glass/plastic bottles)	✓		
Packaging has passed required ISTA testing protocols	✓		
Outside the automation eligible dimensional/weight limits		✓	
Bagged products (dog food, potting soil, deer corn)		✓	
Cases with open flaps			✓
Loose shrink plastic, tape, packaging			✓
Bulging or compacted sides			✓
Product falling out of or extending from the top of packaging			✓
Adhesives causing cases to be stuck together			✓
Missing/unreadable packaging barcodes			✓

Receiving Quality



Pallet Load Characteristics	Automation Eligible	Not Acceptable
Cases are stacked, stable, and free of damage	✓	
Overall pallet + freight height less than 96"	✓	
Pallet meets minimum quality standards	✓	
Layers leaning or tipped more than 0.5" from base of pallet		✓
Same item stacked on pallet in different height orientations		✓
Cases fall or become unstable when wrap removed		✓
Layers adhered together by chemical or mechanical means		✓
Tier sheets stuck/glued between layers		✓
Slip sheets stuck/glued to bottom layer		✓
Missing/unreadable packaging barcodes		✓
Cases Overhang from Pallet Dimensions		✓
Cases Underhang from Pallet Dimensions greater than 7.5" (3.75" each side)		✓
Single pallet layer exceeds 500 lbs total in weight		✓

Automation Eligible Cases

Automation Eligible Shipping Cases

(Vendor Pack Cases)

Packaging and pallet formation must enable product to move successfully from the Supplier to the store shelf through the most efficient distribution process available. Where conveyors and/or robotic technology are used, the product will be clamped and/or conveyed to maximize operations within the distribution center.

GENERAL MERCHANDISE

Minimum requirements

6.4" L x 5.0" W x 2.0" H (minimum 1 lb.)
163mm x 127mm x 51mm (0.45 kg)

Maximum requirements

36" L x 24" W x 16" H (maximum 50 lbs.)
915mm x 610mm x 407mm (23 kg)

REFRIGERATED/FROZEN

Minimum requirements

6" L x 4.0" W x 2.0" H (minimum 1 lb.)
153mm x 102mm x 51mm (0.45 kg)

Maximum requirements

26" L x 20" W x 19" H (maximum 50 lbs.)
661mm x 508mm x 483mm (23 kg)

Automation eligible cases and packaging may be subjected to heavy compression on rollers and belts, as well as vibration, abrasion, temperature, and humidity changes during normal DC handling and processing. Automation eligible cases and packaging, other than glass bottles/jars used for food & consumables, are **required** to withstand a 3-foot drop test.

Automation Eligible Warehouse Packs

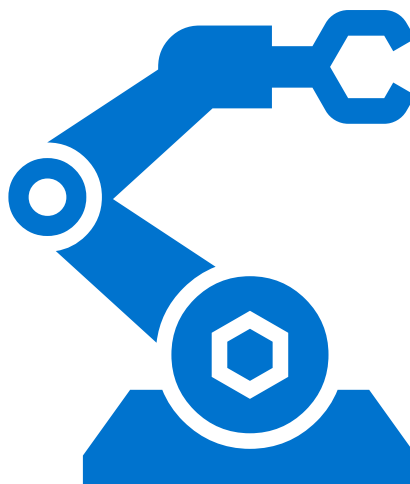
(Inner Packs)

If the warehouse pack meets the automation eligible case requirements, every effort should be made to set the item up with the buyer as a case pack. It is very inefficient for the DC to handle automation eligible freight through the break pack process.

Automation Eligible Cases and Packaging

- Cases are **required** to be free of protrusions on the outer packaging.
- Avoid round or irregular cases or vendor packs.
- Items are **required** to be tightly secured within their corrugated case or tray with minimal head space to prevent shifting during handling.
- It is **required** that hazardous and liquid material must be secure enough not to leak if the packaging breaks.
- A Supplier's internal barcode label should not be placed on the top of the case as it may interfere with the conveyor's scanning equipment. It is **NOT ALLOWED** to cover any case GTIN barcode.

- Avoid using plastic wrap or labels that are highly reflective.
- Black corrugated material and black plastic film are **NOT ALLOWED**.
- Cases should be stacked on the pallet in the automation eligible orientation.
- Pack configurations with an aspect ratio greater than 1.6 (h/w) will be automation ineligible.
- 2" sidewalls are **required** (see "Fragile Product Packaging" section for tray requirements for glass items) and no loose plastic or loose ends. Plastic must be thick enough to avoid tearing or pulling loose through automation. Corrugated board or paperboard sheets with no sidewalls are **NOT ALLOWED**. Lateral support is necessary.
- Automation eligible cases not properly packaged negatively impact the speed and efficiency of freight flow through the DCs. Poor or insufficient packaging will increase overall Supplier costs by adding delays to the store and additional case handling into the shipping process, thereby reducing supply chain efficiency.



NOTE - Refer to the "Fragile Product Packaging" section of this guide for additional requirements on fragile items.

NOTE - D4 – Consumer Paper Goods Items are exempt from the 85" pallet height requirement.

See ISTA Testing section of this guide to review required package performance testing for your items.



Automation Ineligible Cases

Automation Ineligible Cases

While automation eligible cases are preferred, not all cases and packaging can be inducted into the Walmart RDC automation.

Some items are too large or awkward to be automation eligible; for example, bicycles, outdoor furniture, lawn mowers, large TVs, tires, garden tools, and long rugs. These items exceed the maximum dimensions and weight for automation eligible cases but are acceptable automation ineligible items.

GENERAL MERCHANDISE

Maximum Allowable Size **requirements**

72" L x 48" W x 72" H
1829mm x 1219mm x 1829mm

Any single item larger than the dimensions shown above require supply chain approval before shipping into a Walmart DC. Send request for approval to logpkg@wal-mart.com.

Items that are approaching our maximum allowable size shown above are **required** to maintain a flat top surface in order to allow for stacking within the supply chain.

The maximum height for a pallet pull is 85" without a pallet. This is also the maximum height when creating a configuration for a pallet pull item. A pallet pull is an item that is shipped to stores as an entire pallet. **The maximum height for automation ineligible cases with a pallet is 90".**

Straps and Bands

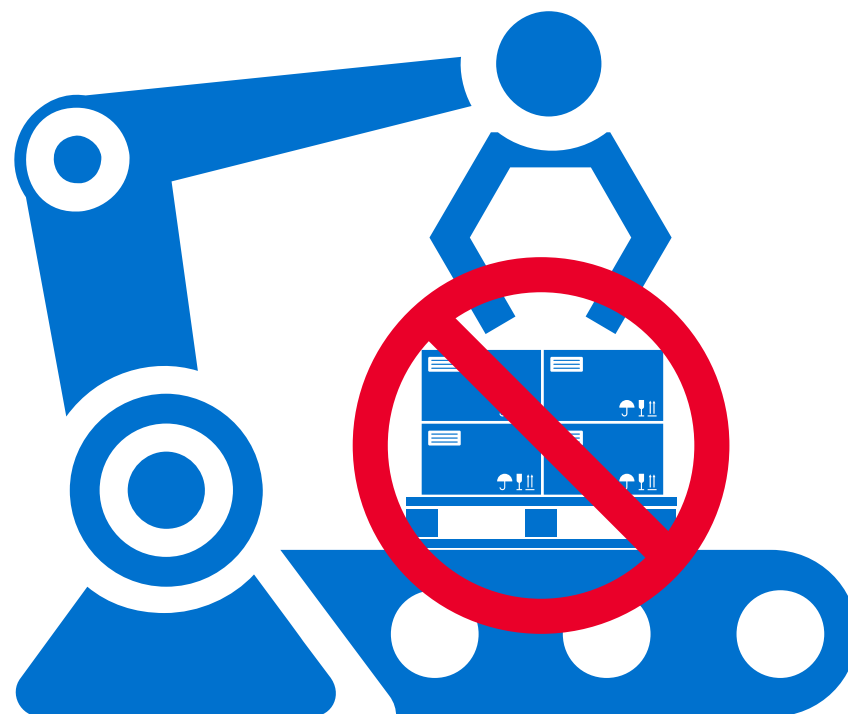
Straps or bands for vendor packs must be tight on the case. Loose bands may damage to conveyors and automation systems. Metal banding is **NOT ALLOWED**. Banding together multiple vendor pack cases is **NOT ALLOWED**.

Straps and bands are allowed on produce pallets and automation ineligible items such as swing sets, tables, or other heavy merchandise over 55 lbs.

NOTE - Straps or bands are NOT ALLOWED on automation eligible merchandise shipped to the eCommerce Network.

Edge Casters or Wheels

Edge casters or wheels integrated into cases that meet automation eligible guidelines are **NOT ALLOWED**. Edge casters or wheels on all automation ineligible cases must be approved by the Walmart Inbound Quality Senior Manager for Packaging before use. Send request for approval to logpkg@wal-mart.com.



NOTE - Do not ship cases of merchandise in metal racks or metal crates without the written approval of Walmart Supply Chain.

Produce Case Label - Produce Traceability Initiative (PTI)

PTI Case Label

The PTI case label provides industry standard data to speed the inventory flow of highly perishable products through the supply chain. The information on the PTI must be both scannable and readable. Use of the PTI label replaces the requirement of general case markings. You are **required** to use the GS1-128 barcode on the PTI label. Use of the PTI case label for items other than produce within Dept. 94 is **allowed, but not recommended**. Use of the PTI label outside of Dept. 94 is **NOT ALLOWED**.

Additional Markings for Produce

All produce shipments for Dept. 94 are **required** to include the following information:

REQUIRED	<ul style="list-style-type: none"> • Packer information • Product description • Net weight • Country of origin 	<ul style="list-style-type: none"> • GS1-128 barcode: Barcode is required to include Vendor pack (Orderable) GTIN, harvest, pack, or sell by date, lot number, and appropriate application identifiers. • Voice pick code
	<ul style="list-style-type: none"> • Harvest date for fresh produce -OR- • Sell by or pack date for pre-packed/processed items 	<ul style="list-style-type: none"> • Consumable GTIN UPC barcode for pre-pack items -OR- • PLU number for bulk items
OPTIONAL	<ul style="list-style-type: none"> • Walmart item number (WMIT) • Handling instructions 	<ul style="list-style-type: none"> • Additional regulatory information

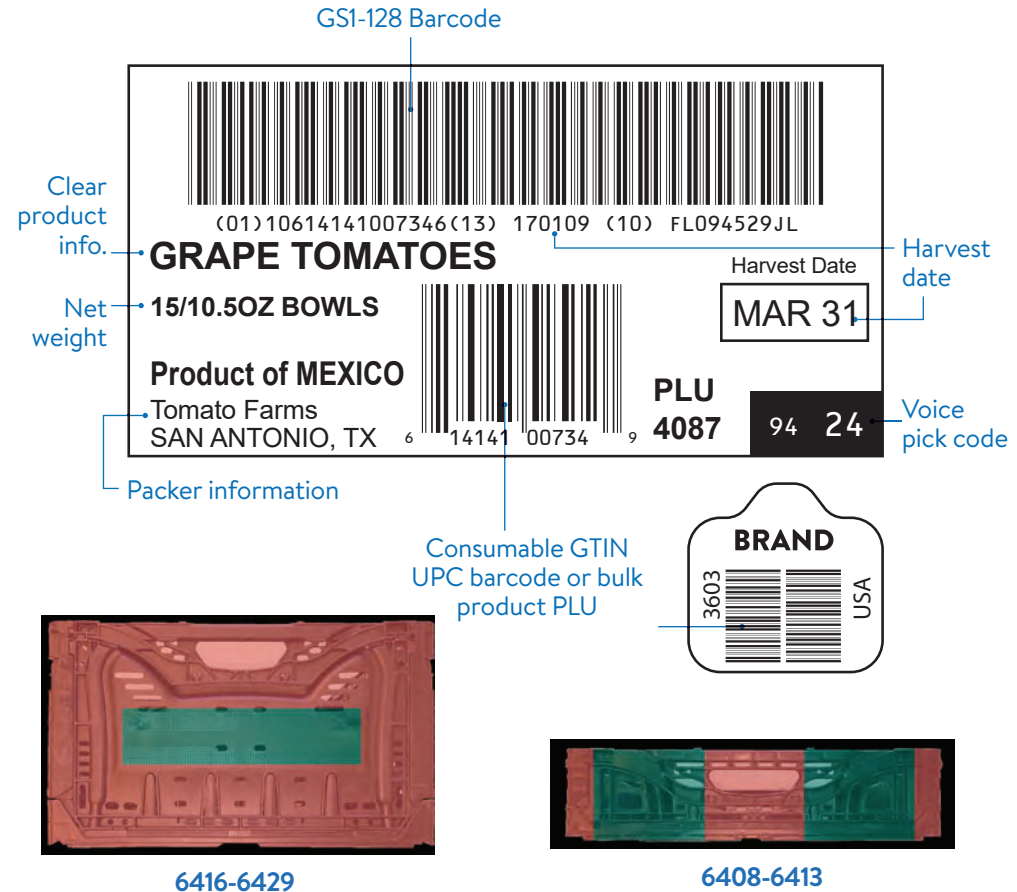
ASN/EDI Requirements for Produce

Produce Suppliers are **required** to submit a Walmart Perishable ZZZZ compliant Advance Ship Notice (ASN) through EDI. The Walmart Perishable ZZZZ ASN provides advanced visibility to incoming shipments and clearly identifies it as produce. For industry information and standards specifications such as label size and formatting, refer to www.gs1us.org and www.produce-traceability.org.

■ For questions regarding PTI labels, contact Labeling@walmart.com.

■ **GS1-128 barcode is required to meet size and print quality standards as referenced in the GS1-128 section of this publication.**

■ For more information on the Walmart Perishable ZZZZ Compliant ASN, see Walmart Retail Link: Retail Link > Apps > Filter Docs "ED" > EDI-B2B > Guides > Perishable ASN.



RPC Label Placement

Suppliers who choose to ship produce in an IFCO RPC are required to adhere to the label placement standards developed by the manufacturer as shown below:

- Apply labels to the short panel end walls only (as **shown in green on the RPC renderings above**), **NEVER** on the long panel walls
- Do not apply labels on the long side panels, bottom or inside the RPC's
- Do not wrap label around handle
- Only 1 label should be applied to each RPC and cannot exceed 4" wide X 2" tall
- If using larger RPC (6416-6429) apply label on dimpled areas, not on corner locks
- Do not adhere labels under tines/card holder prongs, this is for cardstock only that is not glued to the RPC. Do not apply oversized pallet labels directly to RPCs but instead to the outer shrink wrap.

Produce Pallet Label - PTI


PTI Case Label

The pallet label, along with the h barcode in GS1 format associated with your Walmart Perishable ZZZZ ASN, aids in a faster receiving process and better inventory management. Pallet labels are **required** on two adjacent sides of the pallet. PTI labels are **required** to be outward facing on a minimum of 1 side when palletized.

REQUIRED	
<ul style="list-style-type: none"> SSCC-18 barcode in GS1-128 format 	
RECOMMENDED	
<ul style="list-style-type: none"> Ship from address: Supplier's address, city, state, zip code. Ship to address: Walmart DC address, city, state, zip code Facility/location # (Walmart DC number, e.g., 06094). PO number: 10 digits (ORDER #) Department number (Walmart DEPT number, e.g., 00013) 	<ul style="list-style-type: none"> Sequential numbering of pallets Expanded GLN address (if available for the ship to address). Carrier name (if available) BOL number (if available) Pro number (if available) Store number, store information, and store barcode



(Example only)

Ship From: Any Vendor Any Address City, State, Zip	Ship To: Walmart DC 6094A - ASM DIS City, State, ZIP code - GLN address Facility Location - 5 digits
CARRIER Carrier Name PRO: 1234567890 B/L: 1234567890	
DC# 6094	TYPE 0033
DEPT 00012	ORDER# 1234567890
WMIT: 001286123	
 (00) 0 0614141 123456789 0	

For questions regarding the electronic submission of ASNs, contact EDI Support at 479-273-8888.

Refer to the Temperature receiving chart in Appendix D for required receiving temperature.

For more information on the Walmart Perishable ZZZZ Compliant ASN, see Walmart Retail Link: Retail Link > Apps > Filter Docs "ED" > EDI-B2B > Guides > Perishable ASN



Produce Shipments

Inbound Pallet Loads for Produce and Reusable Plastic Containers (RPCs)

- Stack RPCs by layer on a 48" x 40" Grade A pallet.
- Ensure all RPCs interlock for a more secure pallet.
- Cross-stack when applicable for greater pallet stability.
- Cases are **required** to withstand clamping equipment.
- Secure containers to the pallet using stretch wrap and optional corner boards
- Vertical plastic bands that secure the load to the pallet are optional.
- Straps are **required** to run horizontally and be placed at the base, middle, and top of the pallet.
- Product that requires unrestricted airflow is **required** to be secured to the pallet with ventilated stretch wrap.

- Secure containers to the pallet using stretch wrap and optional corner boards
- Gluing, taping, or any other method of fastening the corner boards to the pallet and/or cases is **NOT ALLOWED**.
- Metal bands and clip seals are **NOT ALLOWED**.
- All RPCs on a single pallet are **required** to be the same size. Multiple-sized RPCs on a pallet are **NOT ALLOWED**.
- Shipments may be refused or rejected if not properly secured on the pallet. Less than layer case quantities are **required** to be secured to the pallet.
- Produce pallets should be trailer loaded in a pinwheel pattern to reduce trailer air space and prevent shifting.
- Single pallet positions should be loaded to one side of the trailer and secured with airbags or load locks.

- Netting and twine for pallet containment are **NOT ALLOWED**.

Fiber Corner Boards

In order to increase recyclability, we strongly encourage the use of corner boards made of 100% plastic or 100% fiber. Mixed material corner boards such as composite or those with a metal or plastic interior and fiber exterior cannot be recycled from our DCs and stores.

- See the Unitized Shipments section of the standards guidelines for corner board requirements.

Suppliers are responsible for ensuring the length, width, and thickness of corner boards are adequate to properly protect and support the product.



NOTE - Loose film, fiber, or other loose materials are **NOT ALLOWED** in any open top cartons or containers. All loose material must be removed. All plastic coverings and plastic inner pack bags are **NOT ALLOWED** to exceed the height of the case.

Produce Cartons

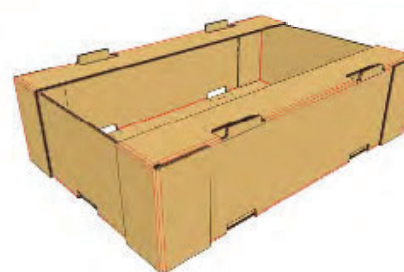
Open Top Corrugate Cartons (Display Ready Cartons) (DRC)

- Open top cartons are **NOT ALLOWED** to have stacking tabs greater than 0.75" (20mm) in height
- Bagged product inside of an open top carton is **required** to be contained within the carton. Protruding bags are **NOT ALLOWED**
- Clamshell products inside of an open top carton are **required** to be sealed close with tape or other mechanical closing method
- Open top cartons for produce are allowed in 2 specific footprint sizes, 5 down (5 Ti) and 6 down (6Ti)
- **6 down DRC Carton Standard:**
 - Top Surface Area/Top Support is **required**. Minimum surface area of 4 in². The surface area shall be equally distributed between 4 corners, 2 short side support bars or 2 long side support bars.
 - 6 down DRC Cartons with no top surface area are **NOT ALLOWED**
- **5 down DRC Carton Standard:**
 - Top Surface Area/Top Support is **required**. Minimum surface area of 4 in². The surface area shall be equally distributed between 4 corners, 2 short side support bars or 2 long side support bars.
 - 5 down DRC Cartons with no top surface area are **required** to comply with the Common Corrugated Footprint industry standard



PARTIALLY AUTOMATION ELIGIBLE

Open Top cartons with no top surface area are automation eligible only in a 5 Ti size that is compliant to the Fibre Box Association Common Corrugated Footprint industry standard



FULLY AUTOMATION ELIGIBLE

Open Top cartons with minimum 4 in² top surface area are automation eligible in a 5 and 6 Ti footprint

NOTE - The Common Corrugated Footprint Standard can be found at the Fibre Box Association website <https://www.fibrebox.org> – Produce suppliers are required to be in compliance with these standards no later than 7/15/25