

Title/Subject: Corporate Packaging Standards

1. Purpose

These guidelines are intended to ensure the integrity of goods, safety, and an overall enjoyable customer experience.

2. Scope

This procedure affects suppliers and Roush shipping operations in understanding and applying packaging requirements for inbound and outbound packages & freight.

3. Forms

None.

4. Exclusions

- Note that packaging instructions agreed to regarding program specific requirements take precedence over these guidelines. Reference your program agreement for details.
- In addition, any special instructions, requirements, or terms & conditions listed on Roush purchase orders or other Roush generated communication (written or verbal) must be adhered to as well.

5. Definitions

In this document the procedures will be defined for the following steps of the packaging/shipping process: Returnable Dunnage, Corrugated Fiberboard Boxes, Interior Packaging Protection, Sealing, Palletizing, Pallet Selection, Shipment Documentation, Dangerous Goods Shipments, International Shipments, Marking & Labeling, and Bar-Coding

6. References

- Packaging@roush.com
- www.phmsa.dot.gov
- Please reference the specification below for proper barcode language and design.

7. Procedure

7.1 Returnable Dunnage

- The use of returnable dunnage is encouraged. Size, shape and weight of such dunnage will be discussed and agreed to with the vendor, Roush program manager, and a Roush packaging engineer.
- Dunnage must take into consideration weight limitations of material handling equipment, storage size, capacity, and transportation mode.
- Arrangement for dunnage return is the responsibility of the shipper within an agreed amount of time. The dunnage must be properly labeled at each return or exchange.

7.2 Corrugated Fiberboard Boxes (cartons)

- The selection of a carton and internal dunnage for a part or several parts will be determined by their size, weight, part configuration, nesting factor, and protection requirements.
- Fiberboard boxes should be durable and robust enough to withstand normal transportation and handling. i.e., cross docking, multiple forklift pickups, etc.
- Selection of a fiberboard box will be determined by the National Motor Freight Classification Item 222 Rule 41 for minimum requirements.
- The durability of a box corresponds to the burst strength and Edge Crush Test data, which is displayed in the Box maker's Certificate typically located on the bottom of the box.
- Boxes must be original containers for the product being shipped or of new construction. The re-use of older boxes is not acceptable.

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7.3 Interior Packaging Protection

- Product should be positioned within center of the package with sufficient protection to prevent damage and eliminate shifting or movement while in transit.
- Protective material should be placed between the product and all six walls of the carton. A minimum of 1" of cushioning, bracing, and/or void fill is required for standard shipments and 2" required for fragile or heavy or uniquely shaped items.
- Environmentally friendly or reusable materials are encouraged.
- Material selected for protection should take into consideration shock & vibration during transit & handling.
- Types of materials, depending on product shipped and level of protection required, can include Kraft paper, engineered paper padding, bubble wrap, air pillows, foam pouches, expandable foam, cellulose wadding, VCI packaging (volatile corrosion inhibitor), etc.

7.4 Sealing

- Reinforced industrial Kraft sealing tape is recommended and preferred, but hot melt and acrylic tapes are acceptable alternatives if they do not fail in shipment.
- Masking tape, duct tape, and cellophane tapes should not be used for sealing cartons.
- Completely seal all flaps, top & bottom.
- If reinforcement is required, seal the sides of the flaps in an "**H**" pattern and cover the corners to prevent corner "burst out".
- Polyester strapping is required for packages greater than 45 pounds.

7.5 Palletizing

- When palletizing, the preferred method is column stacking. Interlocking layers are acceptable if the bottom layer cartons can withstand the weight of all layers stacked above the bottom layer.
- Overhanging, misaligned stacking, or pyramid shaped loads are unacceptable.
- Packages must be stretch wrapped to the pallet for load consolidation and then banded to the pallet for load security.
- Metal banding is unacceptable for shipments into Roush.
- Use edge protectors made from fiberboard or plastic to prevent banding damage.

7.6 Pallet Selection

- Standard pallet shipments should be on a pallet no larger than 48" x 48" with 4-way entry.
- No stringer pallets
- Protruding nails, fasteners, or broken boards are unacceptable.
- Corrugated pallets are an acceptable alternative providing they can support the intended load, have 4-way entry, and are undamaged.
- Spacing between deck boards should be narrow enough to ensure proper load support and prevent damage by forks from below Pallets must be sturdy enough to support the load during normal transportation and handling.
- International shipment wood pallets must meet the specifications required by the European Union.

7.7 Dangerous Goods Shipments

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- All dangerous goods shipments will be processed (Identify, Classify, Package, Mark, Label & Document) according to laws established by DOT and/or IATA and performed by an employee certified in dangerous goods shipments.
- All questions and concerns should be directed to the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the following link.
www.phmsa.dot.gov

7.8 International Shipments

- Must comply with all international shipment laws and regulations with regards to, but not limited to, packaging, pallet fumigation labeling, commercial invoices, import/export documentation, declarations, customs forms, invoices & packing slips.

7.9 Marking & Labeling

- All shipments will be clearly marked and labeled both legibly and durably. This will include full name and address of shipper and consignee. Inbound freight will include the Roush purchase order number as well, at a minimum.
- Appropriate transportation labels will be securely affixed. Such labels may include: "Fragile", "Do Not Stack", "UPS Next Day Air", etc.
- Placement of labels should be affixed to the upper right-hand corner of two adjacent vertical sides of each container.
- If shipment is secured with an overpack or stretch wrap, markings and labels must be placed on the outer surface of the shipment.









7.10 Bar Coding

- Please reference the specification below for proper barcode language and design.
- Vendors will be directed to apply the Roush specified bar code label agreed to for each shipment. Detailed examples are provided below.
- Each pallet will be labeled with a master label (example below). The master label will be affixed to the center of each of the 4 vertical sides. Master labels will contain information specific to the contents of the individual pallet.
- Master labels should be printed in black ink on high visibility color labels such as florescent yellow, orange, pink, green, red, etc.
- Each parts container on the pallet will have the individual bar code label (example below) affixed to the upper right-hand corner of two adjacent vertical sides.
- Individual component labels should be printed in black ink on white labels.









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MASTER BAR CODE LABEL EXAMPLE

M A S T E R	Part # (P)	12345-ABCDE-123456 		
	Quantity: (Q)	10000 	Description: Part description	
			MFG Date: MM/DD/YY	Vendor ID:(V) A123456789 
	P.O. # (K)	R08-00000123456 		Lot # (L) A123456789 
	Pack Slip # (Z)	ABCDE-00000-12345-ABCD 		
	Serial # (S)	12345-00000-12345-00 		Line # : Schd. # 25:05 

INDIVIDUAL COMPONENT BAR CODE LABEL EXAMPLE

Part # (P)	12345-ABCDE-123456 		
Quantity: (Q)	10000 	Description: Part description	
		MFG Date: MM/DD/YY	Vendor ID: (V) A123456789 
P.O. # (K)	R08-00000123456 		Lot # A123456789 (L) 
Pack Slip # (Z)	ABCDE-00000-12345-ABCD 		
Serial # (S)	12345-00000-12345-00 		Line # : Schd. # 25:05 

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Roush requirements for all incoming shipments, labeled with barcodes according to the following general label requirements:

Label Size: 4 inches by 6 inches

Bar-Code Symbol: Code 128

Bar-Code Dimensions: Barcode density is no less than 12 mil. Barcode height is a minimum of 0.25 inches.
Overall printed height of a part number ***must*** be at least 0.50 inches.

Data Identifiers: There will be a requirement to have data identifiers for the following fields, all other fields do not require data identifiers. P for part#, Q for quantity, V for supplier ID, S for serial#, L for lot#, K for purchase order#, and Z for packaging slip#.

Quiet Zone: A quiet zone is the area with no printing a ¼ of an inch, before and after the barcode, (the white spaces between the bar code and the vertical edge of the label or the vertical line inside the label). Please refer to the label examples for more details.

Mandatory Fields: All fields listed below are mandatory unless a deviation is authorized from Roush packaging engineering or a program management representative.

- Part Number
- Quantity
- PO Number
- Packaging Slip Number
- Vendor ID
- PO Line Number and Schedule Number

Detail Requirements for Each Block:

Each Block or sub-block will have its own title such as PART NO. (P) or QUANTITY (Q) etc. Refer to the label for more detail.

PART NUMBER Block “P”

Barcode is required for this field. Maximum bar code encoded 18 characters.

Maximum human readable length 18 alphanumeric characters for part number. Part number bar code must be preceded by the data identifier of P.

QUANTITY Block “Q”

Barcode is optional for this field. Maximum bar code encoded 15 characters.

Maximum human readable length 15 characters for the quantity: Decimal positions are not mandatory, but usable when needed.

The quantity number bar code must be preceded by the data identifier of Q.

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DESCRIPTION and DATE Block

Maximum of 20 readable characters for the part description.
Maximum of 10 readable characters in format (MM/DD/YY), typically manufacture date.

PURCHASE ORDER NUMBER Block “K”

Barcode is required for this field.
Maximum bar code encoded 15 characters. R08 identifies the business unit from the 10- digit numerical PO number separated with a (-) dash, IE R08-0000012345.
Maximum Human readable length 15 characters for the P. O. Number.
P.O. number bar code must be preceded by the data identifier of K.

PACKING SLIP Block “Z”

Barcode is optional for this field. Maximum bar code encoded 22 characters.
Maximum Human readable length 20 characters.
Packaging slip bar code must be preceded by the data identifier of Z.

SERIAL NUMBER Block (used only if and when required) “S”

Barcode is optional for this field.
Maximum bar code encoded 20 characters. Purpose of the Serial number is to uniquely identify a specific item.
Note serial number CANNOT be repeated.
Maximum human readable length 20 can be either numeric or alphanumeric characters for the Serial number.
Serial number bar code must be preceded by the data identifier of S.

SUPPLIER/VENDOR NUMBER Block “V”

Barcode is optional for this field. Maximum bar code encoded 10 characters.
Maximum human readable length 10 digits for supplier/vendor number. Supplier/vendor number will be provided by Roush purchasing department. Supplier/vendor number bar code must be preceded by the data identifier of V.

LOT NUMBER Block (used only if and when required) “L”

Barcode is optional for this field. Maximum bar code encoded 11 characters.
Maximum human readable length 11 alphanumeric characters. Lot number bar code must be preceded by the data identifier of L.

Line # : Schedule # Block

Barcode is optional for this field. Maximum bar code encoded 7 characters.
Maximum human readable length 7 alphanumeric characters. No data identifier required human readable text and barcoded.

8. Records

- Packing slips clearly identifying shipment contents, order number, purchase order, shipper and consignee (at a minimum) must be included with each shipment.
- Packing slip may be attached to the exterior of shipment in clear envelope marked “Packing Slip” or packed inside of a package clearly labeled “Packing Slip Inside”.

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9. Authorization

- Supplier PPAP packaging documentation should be submitted for approval with time for review and revisions if changes are required for inbound shipment to Roush.
- Packaging documentation should be submitted to Packaging@roush.com
Concerns or questions regarding Roush approved packaging methods should also be directed to Packaging@roush.com.

10. Change Log

Date	Rev.	Section	Description	Author
10/6/16	R00	All	Initial Release as new document	W. Christen
3/29/23	R01	All	Updated Formatting, Standards, Contact Info	D. Moll
4/11/23	R02	References	Corrected Hazardous materials link	D. Moll