

# **CDBS Packaging Playbook**

Guidelines to Foster Value  
in Our Supply Chain

Reference Document 6.1 – July 2024

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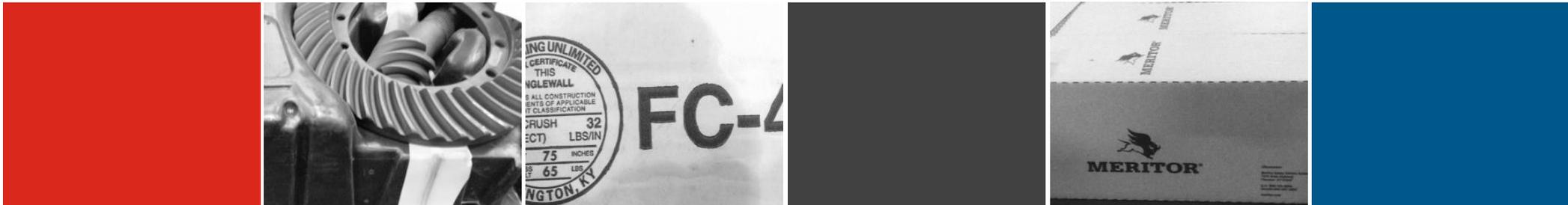
# 1. Introduction and Policy

The **Packaging Playbook** establishes guidelines for packaging systems used across Cummins Drivetrain and Braking Systems (CDBS) supply chain. Adhering to this manual will ensure:

- Appropriate quality packaging and labeling so that materials and products move in damage-free condition
- On-time delivery of great high-value products, within optimal costs
- Safe conditions for employees, customers and suppliers
- Compliance with regulatory aspects set forth by the industry

The **Packaging Policy** establishes:

- Compliance to guidelines is mandatory for all suppliers and will be monitored by each CDBS receiving site
- Failure to comply with these guidelines results in charges for repacking and returning of materials, unless otherwise specified by CDBS
- When developing or improving products, the incurring parties address packaging standards and specifications
- Changes to current packaging must go through trial shipments before approval. Exceptions must first get written acknowledgement by the CDBS Packaging Team

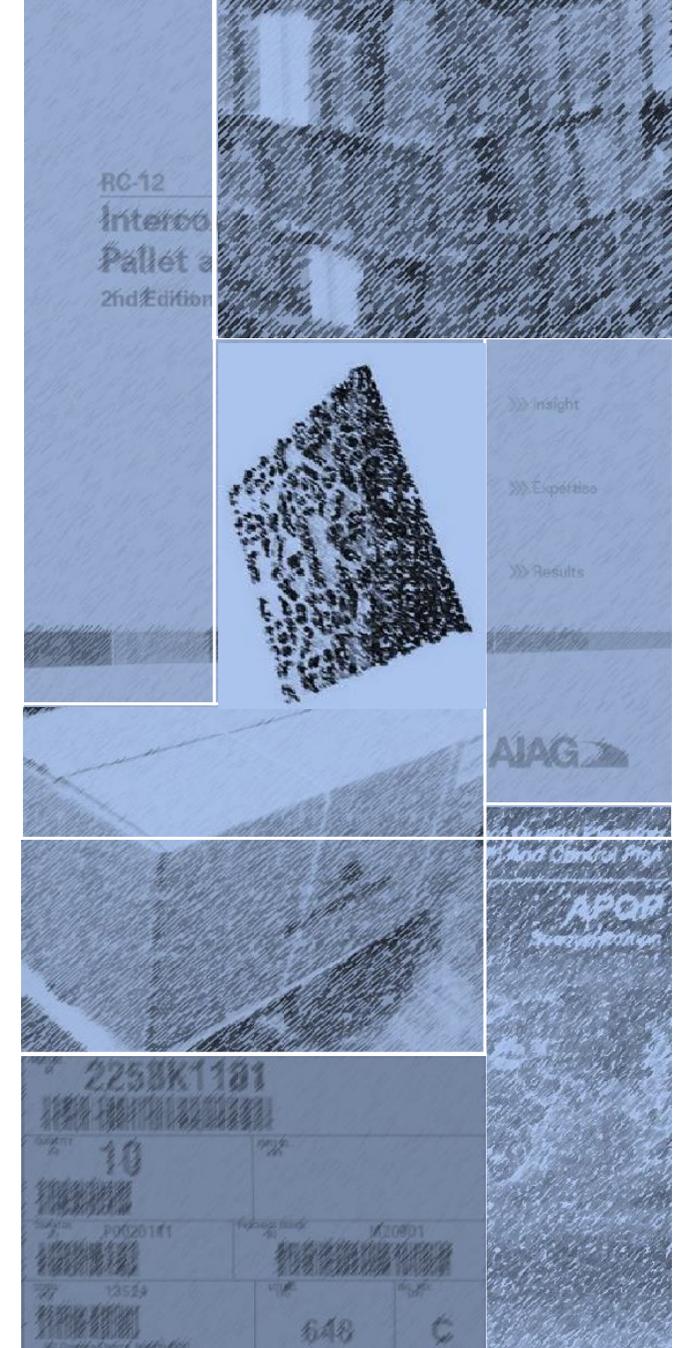


# 2. AIAG Standards

Cummins Drivetrain and Braking Systems (CDBS) supports compliance to the **Automotive Industry Action Group (AIAG)** for packaging requirements:

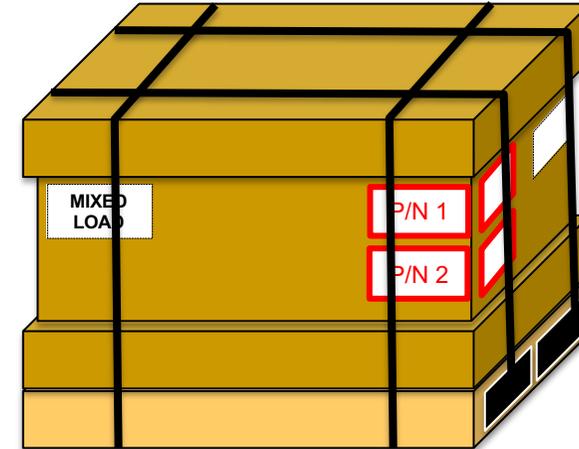
- Bar Code and Two-Dimensional Symbols for Shipping, Transport and Receiving Labels (I15394-09)
- Guideline for Manually Handled Containers (OHS-4)
- Intercontinental Pallet and Carton Standard (RC-12)
- Labeling and Direct Product Marking with Linear Bar Code and Two-Dimensional Symbols (ISO 28219:2009)
- Linear Bar Code and Two-Dimensional Symbols for Product Packaging (I22742-05)
- RFID-Enabled Labels and Packaging Supporting ISO/IEC 18000-6C (I247291-08)
- Solid Waste Management Packaging Material Guideline (RC-7)
- User's Guide for Corrugated Plastic (RC-4)

For additional information, please refer to <http://www.aiag.org>.

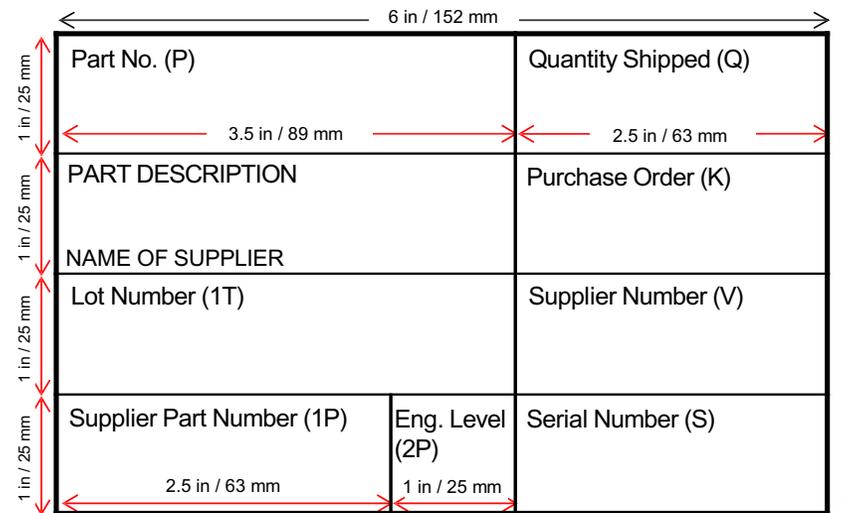


# 3. Labeling and Barcode Specifications

- Use 6" x 4" labels
- Include dimension numbers with readable characters and readable barcodes using Code-39 for all fields [Exceptions: Part Description and Engineering Level]
- Place 2 identical labels with same data on container, each one over the adjoining sides; Place at 1"-3" from the container edges
- When needed, place 1 "MIXED LOAD" label for packaging sets with more than one part number inside
- Refer to AIAG's standard B-10 ["Trading Partner Labels Implementation Guideline"]

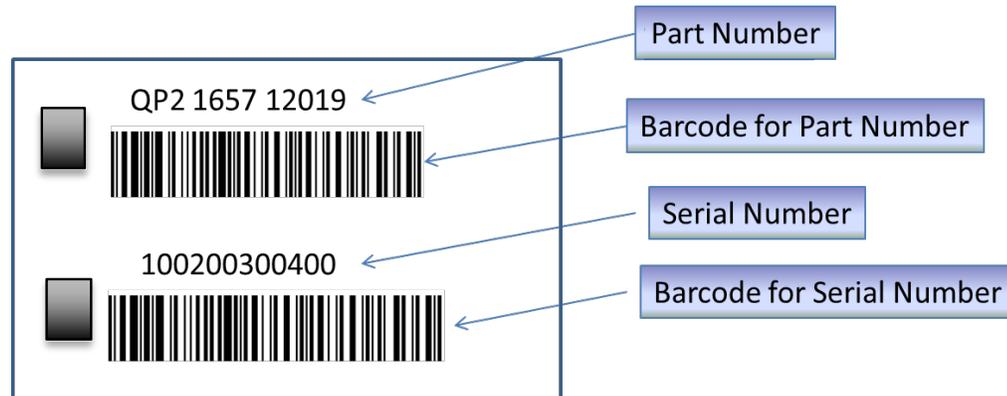


PART# CUST (P) <b>3101D1070</b>		QUANTITY (Q) <b>240</b>	
PART DESCRIPTION & NAME OF SUPPLIER		Lot Number (1T) 00001234	
Supplier Part N P/N 1P1	ENG. LEVEL <b>D</b>	Serial Number (S) S/N 12345678	



# 3a. Part Labels

Part number with corresponding barcode (1) and serial number with corresponding barcode (2).



**Serial Number (for individually labeled component)  
– or –  
Lot Number (for label on dunnage)**

Must be AIAG B-10 compliant, with the exception of having no data identifier in either the human-readable or barcode fields. The supplier shall format both the human-readable and the barcode fields exactly as it is shown on the purchase order.

## ACCEPTABLE EXAMPLES:

- QP2 1657 12019 – Matches the CDBS PO and part number format
- QP2-1657-12019 AND barcode includes dashes – Matches the CDBS PO and part number format

## UNACCEPTABLE EXAMPLES:

- QP2-1657-12019 – Unacceptable to include dash characters unless dashes are also included in barcode
- QP2165712019 – Unacceptable to remove blank spaces
- 12019 – Unacceptable to truncate the part number
- P) QP2 1657 12019 – Unacceptable to include a data identifier
- QP2 1657 12019 rev B – Unacceptable to include a revision level

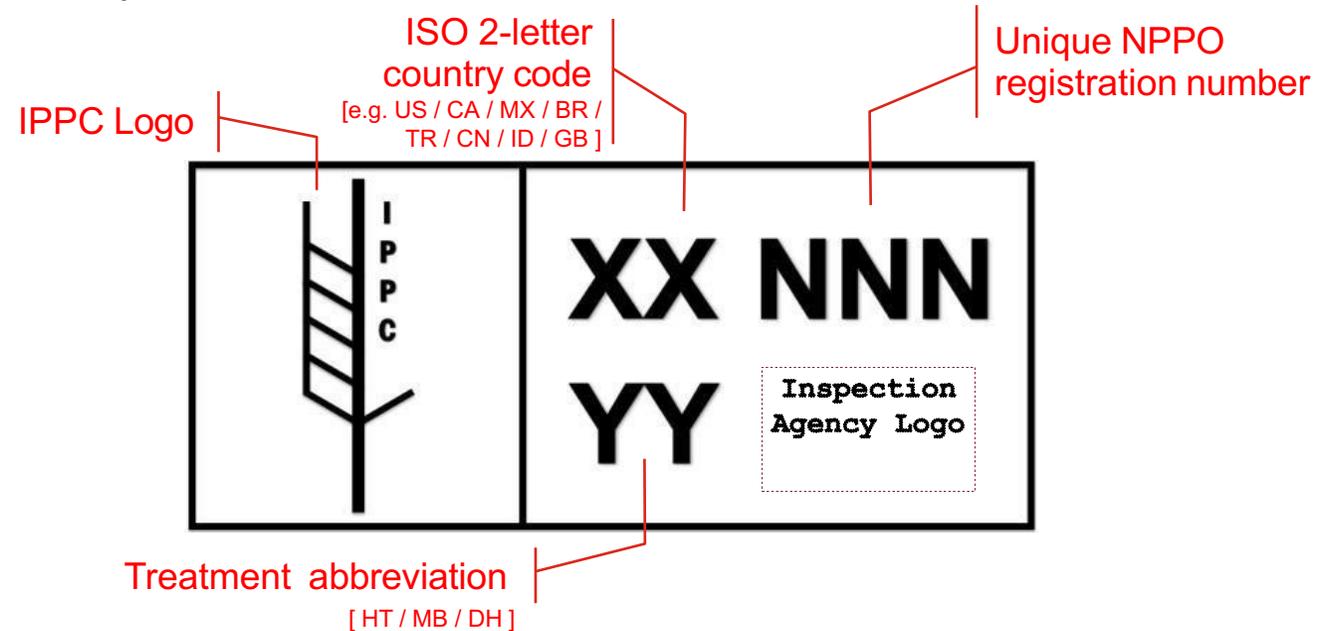
# 3a. Part Labels Continued

## **ADDITIONAL REQUIREMENTS:**

- Be no smaller than 0.75 inches x 0.75 inches (upper size limit is based on the size of the component part)
- Have 0.1 inches of white space on all four sides
- Have human readable font above the barcode for CDBS part number and serial number
- Label shall have white background with a non-glossy finish
- The supplier shall propose label location(s) and get agreement from CDBS
- Supplier must place the barcode label in a location that will ensure no transportation damage
- The supplier must ensure label material will not tear, mark, become non-scannable or fall-off due to normal handling conditions
- Barcode label shall be sent to the Quality Team at the Laurinburg facility for approval
- The supplier is responsible for ensuring the correct barcode label is applied to the component (Mis-identified and mis-labeled components, along with all containment and correction costs, will be billed back to the supplier as part of our normal supplier quality process)

# 4. ISPM Rule

Cummins Drivetrain and Braking Systems (CDBS) requires that all wood packaging materials shipped to its operations in North America comply with the phytosanitary rule described in ISPM-15 under the International Plant Protection Organization. Wood treated via Methyl Bromide are forbidden and shall not be used. The ISPM stamp must be legible, durable, non-transferable, and placed in at least 2 visible locations when in use.



On September 16, 2005 the U.S. Customs and Border Protection (CBP) began enforcing import regulations as per the *United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS)* rule for **wood packaging material (WPM)**. **The rule mandates WPM, such as pallets, crates, boxes, and dunnage used to support or brace cargo, to be treated and marked.** "Treatments" over WPM intended to eliminating pests are (1) HT-heat treatment to a minimum wood core temperature of 56°C for a 30 minutes at least, (2) MB-fumigation with methyl bromide, (3) CPI-chemical pressure impregnation and (4) KD kiln-drying. The "Mark" is (1) the ISO 2-letter country code followed by (2) the unique *National Plant Protection Organization (NPPO)* registration number assigned to the WPM producer, (3) the abbreviation for treatment method and (4) the *International Plant Protection Convention (IPPC)* symbol. Noncompliant WPM will be subject to immediate export along with accompanying cargo. This action may be subject to applicable fees and corresponding penalties. **Refer to the latest release of "ISPM No. 15 – Guidelines for regulating wood packaging material in international trade"** for details; this standard is available in IPPC website: <http://https://www.ippc.int> under 'Adopted Standards (ISPMs)'.

# 5. Sustainability



- Cummins Drivetrain and Braking Systems (CDBS) strives to be best in industry for packaging sustainability. Packaging design, choice of materials, processing and lifecycle are all taken into consideration as part of a packaging economy model aimed to increase sustainability.
- All suppliers are required to include sustainability when shipping new or existing products to CDBS. Returnable packaging will be the preferred shipping system if the business case allows for it.
- Visit <http://www.sustainablepackaging.org> for more information on sustainability in the packaging field.

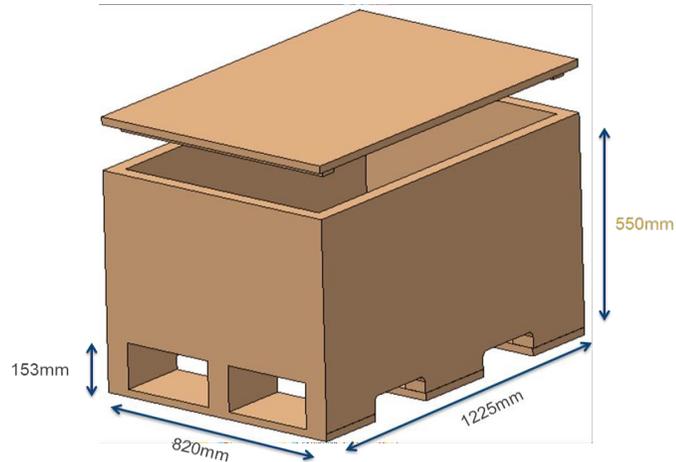
# 6. Roles & Responsibilities

Incumbent functional areas own **Roles & Responsibilities** around packaging to ensure compliance, minimize costs, and achieve Cummins Drivetrain and Braking Systems (CDBS) strategies and goals.

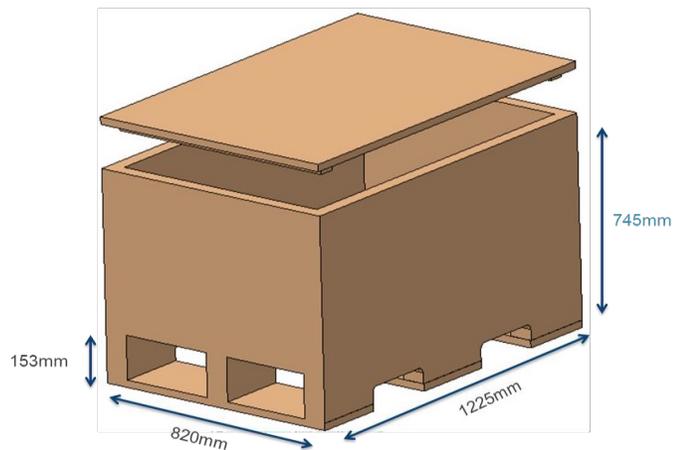


# 7a. Overseas Packaging Requirements

M550 Wood Crate



M745 Wood Crate

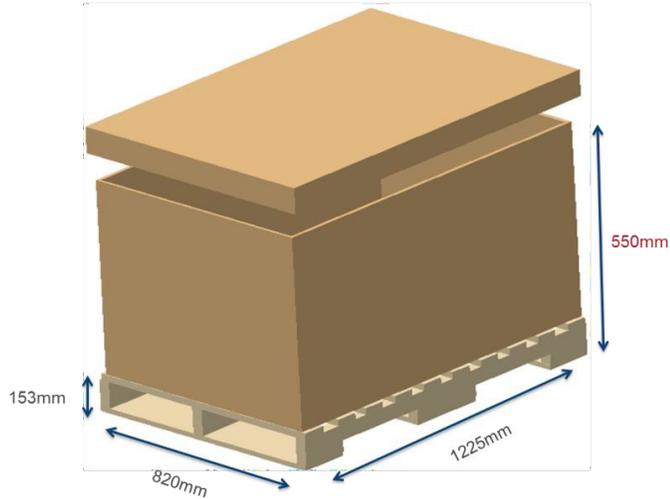


## CRATE REQUIREMENTS

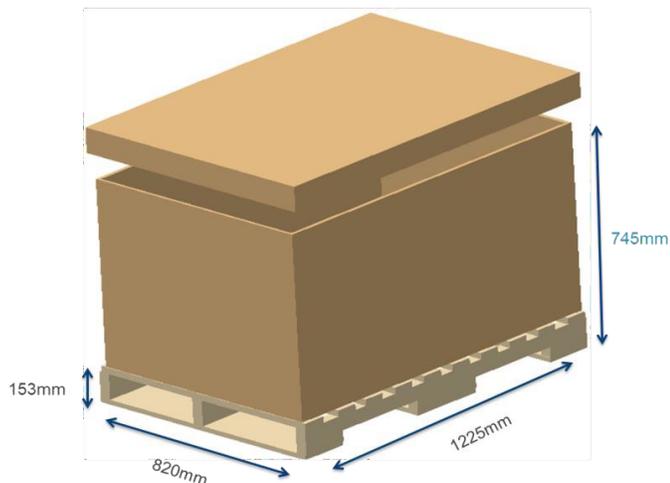
- Must adhere to the one of the crate sizes
  - Any deviations must be approved by CDBS Packaging prior to SOP
- Lid must be banded down, not nailed down
  - This can be achieved by placing wood strips under the lid so that lid cannot slide
- Crate must be nailed together, no exposed metal strapping
- 4-way forklift entry preferred
- Wood must be heat-treated for export use

# 7b. Overseas Packaging Requirements

**CB550 Carton on Pallet**



**CB745 Carton on Pallet**



## **CARTON REQUIREMENTS**

- Carton must be moisture sealed to protect parts
- Carton must have a lid that is banded down
- Triple wall corrugated is preferred to ensure parts arrive safely
- Double wall is permitted with the use of corner posts to support the load

## **PALLET REQUIREMENTS**

- Pallets must be heat treated according to ISPM15 requirements
- 4-way entry preferred

# 8. Rust Prevention Best Practices

Parts shall arrive to Cummins Drivetrain and Braking Systems (CDBS) plant facilities free of debris (i.e., dirt, metal chips, shavings or other particulate) that could be detrimental to the fit, form, or function within our product. Suppliers will be responsible for treating and packaging all parts in such a manner as to keep them free of corrosion and debris as specified by the print requirements.

## **RUST INHIBITING BEST PRACTICES**

- Use of a Volatile Corrosion Inhibitor (VCI) bag (plus, as necessary, VCI paper, foam or a pouch) to impart a deposition on the parts increasing shelf life of the component without rust
- Dip parts into a water-based rust inhibitor approved by CDBS Materials
- Engineering according to Process Specification 703
- Use of specified corrosion protection agents specifically identified on part drawing

# 8a. Volatile Corrosion Inhibitor (VCI)

**VCI is the preferred method for rust inhibiting metallic components.**

## **WHAT IS IT?**

- VCI is a vapor emission imparting a thin residue on metallic parts to inhibit corrosion; Vapors settle on all surfaces contained within the VCI pack environment

## **WHY IS IT PREFERRED?**

- VCI does not impart residue on parts that must be removed prior to machining or assembly
- VCI is a dry process
- VCI can be used at intermediate processing stages to protect WIP

## **VCI BEST PRACTICES**

- All wood (and wood bi-product) retains moisture; Barriers between wood and metal parts must be present
- All metal parts contained within a VCI bag must be cool (<90°F) and dry prior to closing
- All water-based machining coolants must be dry before packing
- VCI bags should be zip tied tightly closed, if possible
  - Do not tape the VCI bag closed unless the bag is compatible with tape