



# NORTH AMERICAN PACKAGING STANDARDS—METALS

Packaging Protection and Containment Requirements for Production Parts

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## Introduction

The goal of this manual is to provide suppliers with the information needed to develop the most efficient packaging system to properly protect the contents they intend to transport into a ConMet facility. This manual will assist suppliers in choosing the most cost-effective packaging that meets ConMet quality, production, receiving, and purchasing requirements. The result of using this manual will be a cohesive packaging solution that provides the end user (ConMet) with a pristine product and packaging that can either be safely recycled or sent back to the supplier for additional use.

ConMet does understand that some packaging cannot be reused or recycled, though all efforts should be pursued to ensure that a minimum impact to the environment is made.

ConMet's expectations is that these guidelines are followed, and the resulting packaging adheres to them. Non-conformance to these guidelines requires written approval from ConMet's packaging engineering group.

## 1. General Requirements

This manual is for reference to North America only, specifically relating to product that is shipped into a metals' component manufacturing facility. The supplier should be aware of the rules that govern packaging disposal/recycling for all the locations to which they ship. Questions about these processes should be addressed with the appropriate location or the corporate packaging engineering group prior to the initial product shipment.

### 1.1. Packaging Expectations

The expectations of ConMet is that all packaging will arrive intact and be capable of further transport through our facilities. The following guidelines, if adhered to, should provide a blueprint for packaging that meets this criteria.

Expectations for packaging in ConMet are as followed:

- ▶ Product remains inside the container.
- ▶ Container is able to be stacked or racked as designed.
- ▶ Structure of container intact.
- ▶ Cleanliness requirements are met.

### 1.2. Packaging Documentation

The result of following these guidelines should be a packaging system capable of moving product from the producer to the consumer. As a result, the packaging system will have characteristics that need to be documented. The mandatory documentation of these characteristics will be with the use of the ConMet Packaging Data Sheet, or PDS. This document will capture all the details about the packaging system so that future review can be conducted should an issue arise in the future. The PDS is the method in which all packaging sent into ConMet will be approved for use.

### 1.3. Returnable Versus Expendable

When setting out to design packaging to ship your product into ConMet, one must determine if their product is a candidate to ship via a returnable packaging system. The need to remove waste from the production environment is overwhelming and returnable packaging assists with limiting this burden.

Expectations at ConMet are that a returnable solution is reviewed before any expendable solution is put into motion. This solution can be proposed by the supplier or worked in tandem with the packaging engineering group at ConMet.

Please refer to the Consolidated Metco Reusable Packaging Design, Quality and Safety Standards for guidance on preparing returnable packaging designs.

## 1.4. Product Characteristics

Product submitted to a ConMet metals facility typically has key attributes that need to be protected by the packaging utilized in order to help maintain those attributes. Great care must be taken at the onset of developing that packaging to ensure that these attributes are documented BEFORE any packaging creation starts. Once the supplier has outlined the attributes, the packaging system can be designed to support their protection.

There are many characteristics that have resulting packaging requirements, too many to list here, though the supplier must take measure to identify them and ensure the packaging system employed addresses them all.

## 1.5. Product Protection

Once the product characteristics have been identified, the packaging system is ready to be created. The supplier can start laying out the framework for the methods needed to protect the part and the overall system of the packaging to use. Does the product need to be protected from moisture? Will the product be compromised if it is contaminated due corrugate dust from the container? Could the product be dented or marred if it is able to impact other items inside the container? These are just a few of the questions the supplier will need to answer before getting started on the packaging system.

If assistance is needed with identifying packaging countermeasures for key product characteristics that need protection, please reach out to the ConMet packaging engineering group.

## 1.6. Container Ergonomics

Now that the part characteristics have actions identified to maintain their intended attributes, the overall container system can be designed. This system needs to take into consideration the actions of the operator who will work with and into the container. The maximum weight of a handheld container with product is 30 pounds. Anything more will need to be packaged into a container that is capable of being moved with a fork truck. Or the quantity in the container needs to be reduced to accommodate the weight requirement.

In addition, design of the system needs to look at other factors, such as reaching or bending into the container. In order to protect all our colleagues, producer and consumer, communication needs to take place to ensure that all parties have the means to safely remove product from the designed container systems without causing bodily harm to the operators.

There are many other ergonomic considerations to review, and all should be reviewed before settling on a packaging solution. If questions arise regarding the safety of the container system, please reach out to the ConMet packaging engineering group.

## 1.7. Hazardous Packaging

To find regulations for shipping of hazardous product please refer to Title 49, Code of Federal Regulations parts 100-177 and 178-199. These regulations have been established by the United States Department of Transportation. The following items have been included in this category:

- ▶ Explosives
- ▶ Compressed Gases
- ▶ Flammables
- ▶ Oxidizing Materials
- ▶ Poisons
- ▶ Irritating Materials
- ▶ Etiological Agents
- ▶ Blasting Agents
- ▶ Corrosives
- ▶ Hazardous Wastes
- ▶ Radioactive Materials

If shipping through a small package carrier, please view their website for specific guidelines about shipping hazardous product.

## 1.8. Container Labeling

Suppliers must ensure that all materials shipped to ConMet plants are correctly labeled and that the labels are properly attached. Each unit load will require a barcode label. The label must meet AIAG B-10 guidelines.

If the unit load is a single container, such as a pallet box or a knockdown container, the ConMet standard label is to be applied in two locations. If the unit load is composed of multiple containers secured to a pallet, each container shall be individually labeled, and the unit load shall have a master label. The master label shall be identified as such and show the total quantity of parts in the unit load. Suppliers must check with the receiving plant before shipping mixed loads. A mixed load label is required if unitizing more than one-part number in the same unit load. Refer to the ConMet Supplier Labeling Requirements for further labeling guidance.

If the label is placed on stretch wrap unitizing the load, the label must be present when that unitization method is removed.

## 1.9. Securing Containers

All containers must be secured to pallets by utilizing banding and/ or stretch or shrink film. When banding is utilized, a minimum of two bands lengthwise and two bands widthwise shall be used to secure the load. Metal banding should be avoided unless poly banding will not suffice due to the weight of configuration of the load. The use of metal banding will need written approval from the ConMet packaging engineering group.

Stretch or shrink films must be applied in a manner such that the load is secured to the pallet, i.e. "roping" and bottom wrapping.

The result of securing the containers onto the pallet is that they will not be able to move or migrate on the pallet.

## 1.10. Standard Packs/ Counts

Standard packs and counts must be established and used. Weigh counting is acceptable only when accurate within +/-0.1%. The quantity per container must be consistent with anticipated shipping schedules, shipping methods and manufacturing procedures – finished good pack size.

## 2. Returnable Container/ Rack Programs

As stated earlier, the desired packaging solution to any ConMet facility is with the use of returnable packaging. Whether the packaging solution is a bulk knock-down container to replace a corrugate box and pallet or a special designed steel rack, limiting the amount of recyclable/disposable material is the desired outcome. For further information on designing returnable packaging, please refer to the Consolidated Metco Reusable Packaging Design, Quality and Safety Standards.

Further questions regarding this activity can be directed to the ConMet packaging engineering group.

## 3. Expendable Container Shipping Systems

Expendable containers are to be used only one time to ship product from the supplier to a ConMet location. The standard material used to create the primary packaging is corrugated fiberboard and should only be reused upon approval by the receiving plant and the supplying plant. Expendable pallets are fabricated from wood and constructed per the National Wooden Pallet & Container Association Standards. Within ConMet plants, there are areas where wood fiber material is not allowed. Suppliers should check with the ConMet receiving plant prior to the initial shipment to see if their parts will be in a sensitive area.

### 3.1. Interior Expendable Dunnage

Dunnage selection is critical to the overall protection of the product. The following are options that are acceptable for use as expendable packaging within ConMet.

- 3.1.1. High-density and low-density polyethylene bags (HDPE/LDPE). A minimum thickness of 2 mils is required unless written approval for a thinner gauge is obtained by the ConMet packaging engineering group. If a poly bag is used, it must cover the entire surface of the product. The use of VCI treated bags is highly encouraged if the product is susceptible to corrosion. Polybags used as dust covers or moisture barriers can be fabricated from materials thinner than 2 mils. This will need to be communicated to the ConMet packaging engineering group.
- 3.1.2. Desiccants and VCI Materials. If the product being produced is susceptible to corrosion due to moisture in the atmosphere, it may be required to be protected with a volatile corrosion inhibitor (VCI) product. Vapor corrosion inhibitors work by diffusing corrosion inhibiting molecules from a source (packaging film or paper for example) to metal surfaces. These molecules settle on metal surfaces and form a protective corrosion inhibiting layer that inhibits the electro-chemical reactions that cause corrosion to form.

In addition, limiting the amount of moisture in the packaging system can be done with the use of desiccant pouches. Clay, silica gel, indicating silica gel, molecular sieve, and activated carbon are all acceptable desiccant types. Care must be taken to ensure that the proper amount of desiccant is added to the container system to properly remove the unwanted moisture.

- 3.1.3. Corrugate pads/partitions/inserts. Product can be separated using corrugate. Product surfaces that should be free of defects should not be oriented against corrugate as it can be abrasive and cause scuffing. Also ensure that the product does not have cleanliness requirements as corrugate can introduce dust/debris into the package. There is no minimum requirement for board strength or flute size regarding internal use of corrugate. The most economical solution is the recommended one for this material.

- 3.1.4. Polyethylene (PE) foam. In sheet form, should have a minimum thickness of 1/8". Use of blocks is acceptable as well. When using block foam, the minimum density is 1.2 pounds per cubic foot (pcf) unless written acceptance is acquired.
- 3.1.5. NON-ACCEPTABLE MATERIAL. Material such as expanded polystyrene (EPS) planks or peanuts are not permitted. Starch based packaging peanuts are also not permitted.

There are various other materials that could be substituted for internal dunnage. Please contact your packaging engineering group regarding any material not on this list.

### 3.2. Corrugated Containers

The shipping container is the most integral component of any packaging system. It is needed to properly contain the entity it is holding and keep it protected from the outside environment. The container should be able to withstand a compressive force and be able to repel punctures from sharp objects (within reason). When selecting a corrugated container to use for shipment, it is important to take into consideration the environment that it will be subjected to. Due to the different environments a package may encounter when shipped to a ConMet facility, it is important to look at two different corrugated guidelines. The two methods of shipment that need to be looked at are LTL/FTL (Less than Truck Load/Full Truck Load) and small package carrier (UPS, FEDEX, DHL).

- 3.2.1. If a package is to be sent through an LTL or FTL carrier, the corrugated shipping container must meet the requirements of the Uniform Freight Classification (UFC) Rule 41 or the National Motor Freight Classification (NMFC) Item 222. These guidelines determine the strength of the corrugated board needed in relation to container size and weight of contents. Either burst strength grade and edge crush test (ECT) are acceptable assuming they meet the guidelines of the provided Rule 41 and Item 222.

Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimension (Length, Width and Depth Added) (inches)	Minimum Bursting Test for Single and Double Wall (lbs. per sq. inch)	Basis Weight (Minimum Combined Weight of Facings)	Minimum Edge Crush Test (ECT) (lbs. per inch width)
<b>Single Wall Corrugated Fiberboard Boxes</b>				
20	40	125	52	23
35	50	150	66	26
50	60	175	75	29
65	75	200	84	32
80	85	250	111	40
95	95	275	138	44
120	105	350	180	55
<b>Double Wall Corrugated Fiberboard Boxes</b>				
80	85	200	92	42
100	95	275	110	48
120	105	350	126	51
140	110	400	180	61
160	115	500	222	71
180	120	600	270	82



3.2.2. All corrugated shipping containers must be tested before implemented. This will require a trial test to be performed and evaluated by the packaging engineer at ConMet. While the corrugated board may be adequate by the preceding chart standards, it may not be stout enough to contain multiple products that are stacked on top. ConMet reserves the right to increase and decrease corrugated board strength for LTL/FTL shipments based on container performance. All LTL/FTL corrugate containers must be designed for double or triple stacking in a warehouse environment or static storage. It is ideal that the same requirements remain for stacking in the distribution environment, but due to the weight of product often shipped, the FTL is weighed out before it is cubed out, negating the need for double stacking. The distribution channel will need to be identified and verified before final selection of corrugate board strength for the container.

For items that will be shipped through a small parcel carrier or for items that will be shipped both FTL/LTL and small carrier, please refer to the following guidelines. These guidelines are to help the designer choose a much stouter corrugated board that will be capable of traversing a small package carrier's distribution environment.

### SMALL PACKAGE CARRIER CORRUGATED BOARD GUIDELINES

Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimension (Length, Width and Depth Added) (inches)	Minimum Bursting Test for Single and Double Wall (lbs. per sq. inch)	Basis Weight (Minimum Combined Weight of Facings)	Minimum Edge Crush Test (ECT) (lbs. per inch width)
<b>Single Wall Corrugated Fiberboard Boxes</b>				
30	75	200	84	40
40	85	250	111	44
50	95	275	138	55
60	105	350	180	-
<b>Double Wall Corrugated Fiberboard Boxes</b>				
60	85	200	92	48
70	95	275	110	51
85	105	350	126	61
100	110	400	180	71
125	115	500	222	82
150	120	600	270	-

3.2.3. The preceding guidelines are in place to ensure proper containment and protection while traveling through the small parcel distribution environments. Studies have shown that the small parcel environment is much harsher to corrugated containers than the LTL environment, necessitating the need for stronger corrugated shipping containers.

3.2.4. The design also needs to take into consideration environmental elements. Moisture in the air, such as humidity, can quickly degrade the quality of the corrugate container. If product is produced in a warm, wet climate, the resulting corrugate strength needs to incorporate that hazard into consideration.

- 3.2.5. All corrugated shipping containers will be marked with an appropriate Box Makers Certificate (BMC). This will ensure that the proper corrugated board is used to contain the product weight and size that is outlined in the preceding charts. The BMC will be located on the bottom flap of the shipping container and identify if the corrugated board is rated in bursting strength or ECT value.
- 3.2.6. The use of packaging materials coated or impregnated with wax or polyethylene must have prior approval of ConMet packaging engineering. Poly bags may be used to reduce contamination.
- 3.2.7. All containers should have glued or stitched manufacturer's joint with outside tab construction or proven equivalent performance. Care must be taken with stitched joints and class A product as the stitching can mar product in proximity. Taped joints are not acceptable.
- 3.2.8. Head Space - There are other factors that need to be considered when designing a shipping container. The first of which is head space in the container. Head space is the gap between the top of the product in the box, to the top of the box. Depending upon the dunnage/product/container orientation, there may be significant head space in the box. Headspace can create a situation where the carton fails and the weight on top previously supported by the carton is now supported by the contents in the carton. In order to combat this issue, it is necessary to either eliminate the head space by reducing the height of the box or bring the dunnage to the top of the box. A gap of 1/8" to 1/4" is an acceptable amount of head space in a container.
- 3.2.9. Closure - In order to keep the packaging system unitized and contained any flaps or lids on the container need to be secured. This should be done with either a 3" wide pressure sensitive poly tape or a 3" wide reinforced Kraft tape. Staples are appropriate if the weight of the container necessitates them, otherwise tape is the preferred method. At minimum, a single strip of tape with 3" of overhang on each side. It is important to note that proper pressure needs to be applied to the surface of all tape to ensure that it adheres to the corrugate board.
- 3.2.10. Design - The standard design for a corrugate container used at ConMet is a regular slotted container (RSC). This is also the most standard design in the corrugate industry. Half slotted containers (HSC) with lids or inverted trays are acceptable as well if the need to work out of the container is desired. These two container systems should be the main design for a container used with any product coming into ConMet. Other containers to consider are full overlap containers (FOL), five panel folders (5PF), one-piece folders (1PF), and telescoping design style containers. All these containers have their design merits but can be hard to utilize in a manufacturing environment. Written permission from the ConMet packaging group must be obtained for any container other than an RSC or HSC.

### 3.3. Wood Pallet Size and Construction

The following information is a guideline on pallet construction. For full wood specifications and requirements, please reference the ConMet Wood Packaging Standards.

- 3.3.1. Pallets must be rack-able, conveyable in four directions and have 4-way fork truck entry. Pallets must follow the conventions outlined in the National Wooden Pallet and Container Association's Uniform Standard for Wood Pallets, retrievable from:
- 3.3.2. Wooden pallets are either stringer pallets or block pallets.
- 3.3.3. Wooden pallet naming convention states the length of the pallet in inches, followed by the width of the pallet in inches. The length of the pallet is defined as the length of the notched stringer. The width is defined as the length of the deck boards. For a 4-way block pallet, the length of the pallet is defined by the stringer deck board length. Common examples are: 48"x 42", 42"x 42", 36"x 36", 48" x 40"

- 3.3.4. **The preferred size for a ConMet metals facility is 48" x 42". However, some manufacturing locations require a 42" x 42" pallet for use. Please check with the ConMet packaging group regarding the size of the pallet/container so that it may be checked for use with the assembly cell.**
- 3.3.5. For stringer-style, non-reversible pallet construction, the primary entry must have a minimum opening of 3.5 inches (90 mm).
- 3.3.6. Deck boards should have a minimum thickness of 0.9" and a minimum width of 3.5".
- 3.3.7. Nailed construction is required using a minimum 2+1/4 inches (57mm) long, screw shanked with a 65-degree threaded angle.
- 3.3.8. Wooden pallets must be heat treated. The heat treatment must be in compliance with ISPM 15. Treatment of the pallets can be heat for 30 minutes at 133 degrees Fahrenheit or treated with methyl bromide. All heat-treated pallets must be marked as so per the same ISPM 15 guidelines.
- 3.3.9. Modular Crates – Containers made up of a standard pallet and collapsing frames is a common design in automotive packaging. In order to allow ConMet to work out of the container without the possibility of product falling out, each individual frame needs to be banded to the pallet. For example, if a container is made up of three frames and a lid, there should be a minimum total of two additional bands to hold the bottom two frames in place. For guidance on this matter, please reach out to the ConMet Packaging Group.

### 3.4. Unitization of Containers and Product to Pallet – Corrugate or Other

- 3.4.1. The first priority for unitization of corrugated containers is to completely fill the surface area of the pallet. **OVERHANG IS PROHIBITED.** If the corrugated containers do not completely fill the surface area provided, the containers should be unitized in an orientation that both maximizes the containers per layer and the support for the containers on the bottom layer. If the container is designed to carry the load of the containers on top of it, the container should be oriented so that the corners of the container are supported on the deck boards of the pallet to maximize the strength of the container.
- 3.4.2. To maximize the strength of the containers, column stacking the containers is preferred.
- 3.4.3. All containers must be secured to pallets by utilizing banding and/ or stretch or shrink film. When banding is utilized, a minimum of two bands lengthwise and two bands widthwise shall be used to secure the load. Metal banding should be avoided unless poly banding will not suffice due to the weight of configuration of the load. Minimum width of acceptable banding is 1/2". Fiberboard angle board should be implemented if banding can cut through corrugate containers and damage the product. Minimum thickness of the angle board should be 1/8". All metal banding applications need written approval from the ConMet packaging group before implementation.
- 3.4.4. If product is directly secured to the pallet, it needs to be blocked and braced using 1/2" plywood sheets to assist with securement. Use of other materials for blocking and bracing is subject to approval from the ConMet Packaging Engineering Group.
- 3.4.5. Stretch or shrink films must be applied in a manner such that the load is secured to the pallet, i.e. "roping" and bottom wrapping. Clear films fabricated from linear-low-density polyethylene are preferred. Alternative films will need written approval from ConMet's packaging group before implementation.

- 3.4.6. Maximum load height from the floor to the top of the unit load shall not exceed 42" (1070mm). Suppliers unable to meet the 42" height requirement must contact ConMet packaging engineering for resolution. Only a part size that exceeds 42" may be cause to alter height. The ConMet receiving plant must be notified prior to changes in height.

## 4. Identification Labels

Labels may vary between ConMet plants but will have the same general structure. Additional information may be found on the ConMet Supplier Label Requirements. If any questions remain, please reach out to your determined ConMet ship-to location or contact the packaging engineering group.

All materials must be identified in compliance with AIAG B-10 label specifications.

### 4.1. Container Label Placement

- 4.1.1. Every container must be marked in accordance with the ConMet Supplier Label Requirements. For expendable solutions, mainly corrugate cartons, the label will be placed at the top two adjacent corners.

For returnable containers, the labels must be placed on the designated label location, normally dictated by the clean release label placard on the container. Typically labels on returnable packaging are on opposite sides for standard containers.

### 4.2. Multiple Common Item Packs

- 4.2.1. A master label shall be used to identify the total contents of a multiple pack unit load where all sub-packs contain the same part number.

### 4.3. Mixed Pallets

- 4.3.1. Mixed pallets should only be used if requested by a certain plant for cost savings reasons. Suppliers should check with the receiving plant before shipping. A mixed load label is required if sending more than one-part number on the same pallet or container. Contact the receiving plant for the required label location.

## 5. Packaging Performance and Evaluation

Once the packaging system is designed for the product being shipped, it is imperative that testing is done on the system. Through the distribution environment, the system can be subject to constant vibration and repetitive shock. Furthermore, the system can undergo compression in two forms, static and dynamic. Static compression is while the system is at rest, such as in a warehouse. While dynamic is while the system is in motion, like in a trailer with a second stack of product on top. Dynamic compression is much harsher on the packaging system overall and something that needs to be verified, specifically if expendable packaging is utilized.

Any package system that is set up for testing needs to be properly conditioned to the environment it will face. Temperature and humidity can degrade the performance of the packaging system even before the physical testing starts. Keep in mind that if the packaging is being designed in the winter when it is cool and dry, it will also need to perform flawlessly in the summer when it is hot and humid. This is also the same case in reverse.

## 5.1. Package Testing

Confirming that the packaging system selected protects the product as desired is mandatory. There are two methods to achieve this. Testing via a certified laboratory or submitting a minimum of one field test. Multiple field tests are recommended to ensure as much exposure to different elements as possible.

- 5.1.1. Lab testing is conducted in a certified laboratory that specializes in such procedures. A certified lab can be found by visiting the International Safe Transit Association (ISTA). The preferred test methods for ConMet are bulleted below. ASTM D4169 DC 6 and ISTA 3H/3E are tests suited for palletized loads that will ship either LTL or FTL. For packaging systems that will be shipped through the small parcel environment, ISTA 3A is the preferred test.

- ▶ ASTM D4169: Standard Practice for Performance Testing of Shipping Containers DC 6
- ▶ ISTA 3H or 3E
- ▶ ISTA 3A

- 5.1.2. If lab testing is not feasible, field testing is the alternative. Field testing of new packaging systems is mandatory. Please be aware that field testing may not subject the packaging system to all the hazards that it will be subjected to in lab test. This may provide a false positive. To combat this, it is recommended to send multiple field tests. The field test should represent the main course of distribution to the end destination. For example, if the normal shipment to a ConMet facility is utilizing an LTL carrier, the field test should do the same. Please coordinate your field test with the packaging engineer group so that they can review the results. Feedback will be provided when available.

## 6. Disposition of Damaged Materials

To ensure fast, accurate disposition of material damaged due to packaging, each ConMet plant must contact the Packaging Group for resolution. The Packaging group is responsible for all necessary corrective action. Damage determined as carrier responsibility will be filed against the delivering carrier.

### 6.1. Disposition of Damaged Containers

Containers that are ConMet owned and damaged, must be identified and returned to ConMet for disposition. State the concern with the container and the location of the concern on the method of identification, which can be a tag or sheet of paper. Whichever method is used, the identification method must stay affixed and legible on the container.

## 7. Standard Parts

Standard small parts are any nuts, bolts, screws, washers, small fasteners or similar dense material. All small parts must be shipped in containers weighing no more than 30lbs. (13.6kg) gross weight. Containers are of three primary recommended designs:

- ▶ Regular slotted cartons with an inner liner if necessary.
- ▶ Returnable tote containers that fit standard pallet sizes.
- ▶ Custom trays that orient parts for delivery.

## 8. ConMet's Packaging Responsibility

### 8.1. Economic Feasibility Study

When negotiating the price of a component, supply chain management will coordinate an economic feasibility study prior to finalizing cost to assure acceptable return on investment.

### 8.2. Packaging Design

Coordinate the packaging designs between the receiving plant, engineering (when needed), and supplier, evaluate what is necessary for total system needs (e.g., quality, safety, cost, manufacturing, transportation, assembly, etc.) to be met.

### 8.3. Returnable Packaging

Determine quantity and distribution of returnable shipping containers required for a JIT loop. Under no circumstances will ConMet be responsible for supplying containers used for in-process work at the supplier.

## 9. Supplier Requirements

### 9.1. Sufficient Supply

Maintain sufficient supply of expendable packaging to be used for premium shipments, production run-ahead programs, container shortages, and other similar circumstances. Require expendable supplier to maintain packaging to sustain a week of production.

### 9.2. Cleanliness

It is the responsibility of the supplier to deliver clean parts. If the ConMet drawing requires parts to meet a certain level of cleanliness per ConMet Cleanliness Specification, the supplier must ensure that the method of packaging such parts will allow compliance to the specification. It is also advisable that the supplier keep containers clean to reduce potential contamination. If this is not a normal practice, then it should be discussed with ConMet during negotiations.

### 9.3. Traceability

Maintain continuous shipping and receipt records of returnable packaging which shows the location of all consigned material, including supplier in-plant reserve and balance not returned to ConMet. If a returnable container program is initiated, then a returnable container inventory must be taken at the end of each month and be reported to the materials department of each plant by the fifth day of the next month.

### 9.4. Transport

Load production parts in containers and then into transportation equipment in a manner which maintains part quality and cleanliness. Inspect each returnable container for debris or foreign material and if applicable clean containers. Containers should also be checked regularly for damage which compromises the structural integrity. Do not use damaged containers. If the supplier is unsure whether a container is suitable for shipping parts, contact the ConMet receiving plant for instructions and/ or disposition.

## 10. Packing Slip and Bill of Lading Requirements

A packing slip, prominently displayed, must accompany each shipment and contain the following information:

- ▶ Date shipped
- ▶ Carrier (shipped via)
- ▶ Description
- ▶ Part number
- ▶ Revision level
- ▶ Supplier manufacturing lot number, by part number by pallet
- ▶ Quantity and unit measure as shown on ConMet purchase order
- ▶ Number of containers shipped
- ▶ Bill of lading number if different from the packing slip number
- ▶ Weight shipped



# APPENDIX A: Alternative Packaging Approval Request

## Alternative Packaging Approval Request



Supplier Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Part Number: \_\_\_\_\_

Reason Alternative Packaging Needed:

\_\_\_\_\_

Type of Material used in Alternative Packaging:

\_\_\_\_\_

ConMet Associate contacted: \_\_\_\_\_

Date Contacted ConMet: \_\_\_\_\_

Total Cost of Alternative Packaging if ConMet Cost: \$ \_\_\_\_\_

Approved By: \_\_\_\_\_ Date Approved \_\_, \_\_, \_\_\_\_

ConMet Purchase Order Number assigned for Packaging: \_\_\_\_\_

Total Number of Parts Effected: \_\_\_\_\_ Ending Date of Alternative Packaging Use \_\_, \_\_, \_\_\_\_

|



APPENDIX B: New Model Label



PACKAGING  
SAMPLE PARTS



## APPENDIX C: PPAP Approval Sample Parts

MAKE SURE TO PUT THIS LABEL ON PPAP PACKAGE

Supplier Name	0 _____		
Supplier Location:	0 _____		
ConMet Part Number:	0 _____	ConMet Revision #	0 _____
Quantity of Parts:	_____	ConMet Location:	_____
PO Number:	_____	Date of Shipment:	_____

### REASON FOR SUBMISSION

- Initial submission (New Parts and Part Number Changes)
- Engineering Change: New/Revised drawing or other specification
- Tooling:** transfer, replacement (new), refurbishment, modified or additional
- Correction of Non-conformance or discrepancy
- Change to optional construction, material or component
- Yearly Submittal
- New Supplier, New material or new source for existing material
- Change of supplier, material or non-equivalent materials/services
- New process or a change in production process or method
- Change of manufacturing location, sub-supplier or additional location
- Other - please specify

Supplier:

Attach this label to the outside of the packaging when sending PPAP parts to ConMet

Enclose the PPAP documentation records with the PPAP samples and send files to: PPAP@conmet.com

Label size should be a min of 4"x6" with a Yellow background attached to 2 sides of the container

**ConMet Receiving Department: please quarantine product and notify the ConMet QA Manager or designee**



# APPENDIX D: ConMet Packaging Data Sheet (PDS) Example

(ACTUAL PDS FORM IS ELECTRONIC BASED)

ConMet Packaging Data Sheet		
SUPPLIER - COMPLETE ALL APPLICABLE BLUE FIELDS YELLOW FIELDS RESPONSIBILITY OF CONMET		
SUPPLIER DATA		
Parts Ship To:	Part Is Carryover	Date Submitted
	Packaging Is Carryover	9/29/2020
Program Number:	Supplier Code:	Date Packaging Approved
Part Numbers	Annual Part Volume	Daily Part Volume
		Fleet Size
	Suppliers Contact Name	
Suppliers Name and Shipping Location		
Suppliers Email Address		
Suppliers Phone Number		
Suppliers Mailing Address (If Different From Shipping Location)		
PART AND PRIMARY PACKAGING DATA		
Weight of Part (lbs):	Part Dimensions (in):	Photo of Part
	Length: Width: Height:	
Part Material:	Part Protective Dunnage:	
Quantity Per Container	POLY BAG / FOAM THICKNESS	
Electrostatic Discharge Packaging (ESD) Utilized?		
SECONDARY PACKAGING DATA		
Container Type:	Weight of Primary Container:	Photo of Part in Container with Associated Dunnage
Corrugate Container Style		
Primary Container Dimensions (in):	PRIMARY CORRUGATE MATERIAL DETAIL	
Length: Width: Height:	Flute Size	
Pallet Type	Test	Photo of Unitized Load
Pallet Quality	Strength	
Pallet Size Length: Width:	Does Corrugate Meet NMFC Rules?	
Weight of Pallet or Pallet/Lid		
Pallet/Container Unitization	DUNNAGE CORRUGATE MATERIAL DETAIL	
Containers Per Pallet	Flute Size	
Total Weight of Primary Container and Parts:	Test	
Parts Per Unit Load	Strength	
Total Weight of Unitized Load	Volatle Corrosion Inhibitor (VCI) Utilized?	
Cost of Packaging Per Part		
Cost of Packaging Per Year	LABELS	
Will Packaging Be Shipped Small Parcel?	Quantity of Labels Per Individual Carton	
	Quantity of Master Labels Per Unit Load	
	AIAG Guidelines Followed	
	Label Scan Verified	
Additional Notes Regarding Packaging:		
PACKAGING PERFORMANCE		
Proposed packaging solution has been subjected to a field test.		
Date		
Proposed packaging solution has been subjected to a Package Lab Test.		
Test Procedure		
Pass or Fail		
Proposed packaging solution reviewed lineside by MFG Engineer		
Date		
Container label scan has been verified by receiving facility.		
Date		
APPROVAL SIGNATURES		
I have read and understand the ConMet Supplier Packaging Guidelines		
REQUIRED APPROVERS	Signature	Date
Supplier Representative		
ConMet Plant MFG Engineer		
ConMet Packaging		
ConMet Plant Materials/Supply Chain		