

B/E AEROSPACE INC. WORK INSTRUCTION

Packaging Requirements	WI-0922	06/11/2018
	REVISION: IR	Project: N/A

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Approved By: Quality Assurance Representative	Process Owner: Supply Chain	
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1.0 Purpose

The purpose of this document is to flow down the procedure to all Suppliers as recommendation of the best packaging and labeling practices that will assure the product quality until final use at B/E Aerospace Inc.

2.0 Responsibility

Supply Chain management is responsible to ensure compliance to this procedure and flow down to all suppliers. Supplier procurement organization shall reference this Work Instruction in purchase documents as a supplier packaging requirement.

3.0 Definitions

ACRONYM	DEFINITION
ESD	Electro-Static Discharge
NCR	Non-conformance report

4.0 Associated Documents

DOCUMENT NUMBER	TITLE
SP-PUR-001	Purchasing and Procurement

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5.0 General Packaging Requirements

Packaging is understood as all materials used to wrap, contain, protect, move, deliver and present goods from the manufacturer to the final consumer, assuring the integrity and quality of the material contained in it.

- 5.1 Packages shall be designed for the material maximum safety considering the lowest volume and weight as possible in order to facilitate transport
- 5.2 The supplier is responsible for selecting packaging materials. Materials shall be chemically compatible with transport material and the mode of transport used (maritime, air or road).
- 5.3 Packaging must prevent damage such as corrosion, mildew, scratching, denting, and salt contamination of part.
- 5.4 Every package shall assure the best ergonomic conditions at the operations executed throughout the logistics cycle. Access to packaged material shall be practical and safe, not offering ergonomic and safety risks to the operators.
- 5.5 The supplier shall assure that every package, whatever its size, is without dirt or foreign objects that may be characterized as "FOD".
- 5.6 Cardboard packaging shall tolerate the logistics cycle and assure the integrity of the product until its final use. Use cardboard of appropriate thickness to weight, type and fragility of the material. All package inner space shall be filled (bubble wrap, kraft paper, etc.) to prevent the box from crushing during stacking and transportation.

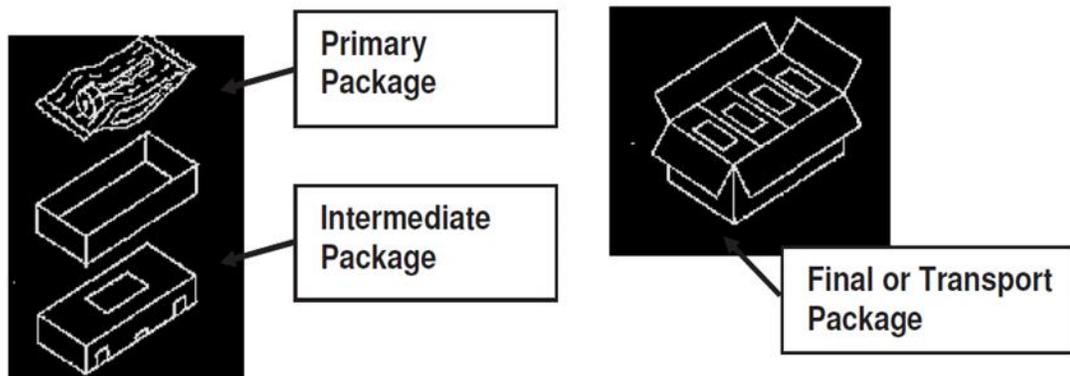
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- 5.7 The package shall withstand all openings throughout the logistics cycle. The opening operation may happen at custom inspection and at reception at B/E Aerospace.
- 5.8 The supplier is responsible, when necessary, for providing, along with the material, instructions on package transport, handling and opening.
- 5.9 Serialized, fragile, and segregated-for-use items shall be packed individually, in primary packages and then placed into intermediate packages. The intermediate packages shall be placed into final packages for transport, when required. See illustrations:



Picture 1: Example of packages for serialized, fragile, or segregated-for-use items shall be packed individually.

6.0 Special Packaging

6.1 PCB's - ESD (Electrostatic Discharge) Sensitive Material

To prevent ESD damage to static sensitive components and devices it is necessary to protect the material from static shock at all times. During transport and storage, the static sensitive components and devices must be shielded from electrostatic fields by being packaged in ESD protective material.

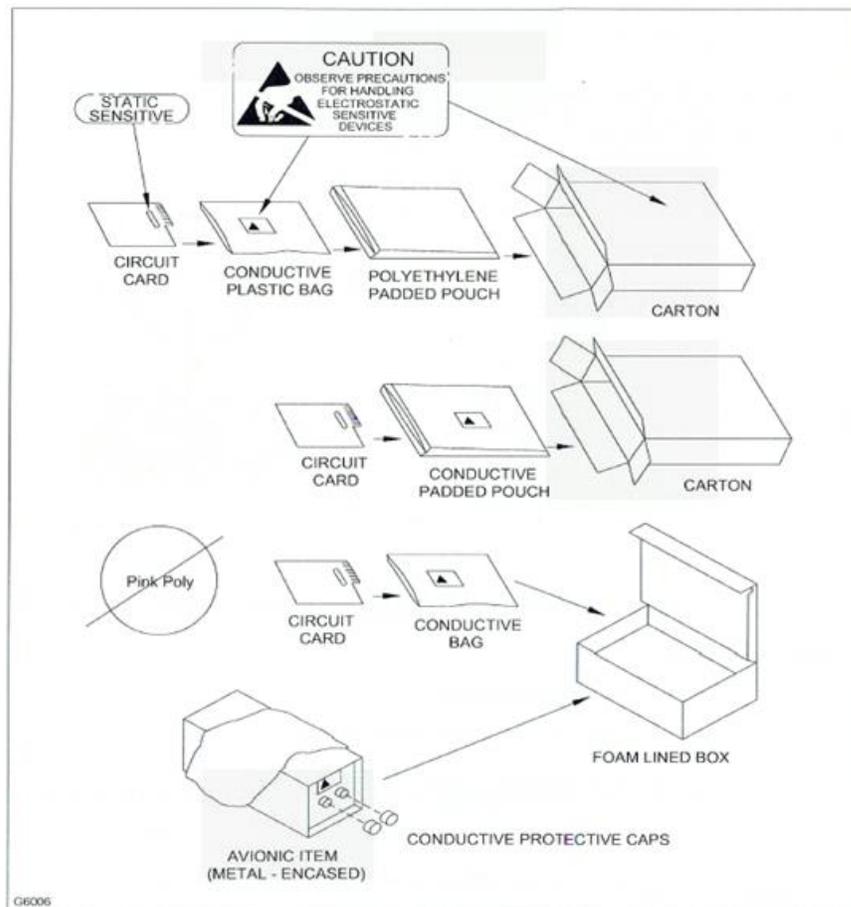
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- 6.1.1 Place static sensitive components in static shielding sleeves or static shielded bags. See illustration 2.
- 6.1.2 Place completed or partially completed printed circuit boards to suitable static shielding sleeves or static shielding bags (depends on size). See illustration 2.



Picture 2: Typical ESD packaging method

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- 6.1.3 For avionics boxes that contains static sensitive components, cap all connectors with ESD protective caps and package in static free cushioning material.
- 6.1.4 For any other special packaging of ESD material, the supplier is responsible to review the drawing for additional requirement.
- 6.1.5 Seal static shielding bags or static shielding material and identify as static sensitive by means of a static awareness label placed in readily visible location. See illustration 3.



Picture 3: Typical ESD device caution/advisory labels

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6.1.6 Receipt verification of components identified as static sensitive shall be performed at a static free work station with the verifying personnel grounded. Material received in nonconforming packaging will be quarantined and forwarded to MRB for disposition.



Picture 4: Examples of unacceptable packaging



Picture 5: Example of acceptable packaging before placing in cardboard box:

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6.2 Mirror packaging

6.2.1 Mirror packaging requires extra care and protection to avoid three major conditions:

- Need to *shock-proof* shipments to cushion and keep from bending and breaking when tossed or dropped.
- Need to *scratch-proof* shipments to protect delicate surface applying thin self-adhesive film over entire mirror.
- Need to *slide-proof* shipments to remove empty space inside the box.



Picture 7: Protective film and Custom design foam and box

6.3 Plating packaging

6.3.1 The handling of parts with plated surfaces shall be performed by trained and skilled personnel.

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- 6.3.2 For handling, personnel shall wear gloves, such as cotton gloves (E9413735) fine grained leather gloves (E9410561) or gloves made of any other soft and light material to prevent scratches, oxidation (tarnishing) and color tone change.



Picture 8: Plated parts

WARNING

PLATED PARTS SHALL BE HANDLED WITH PROTECTION

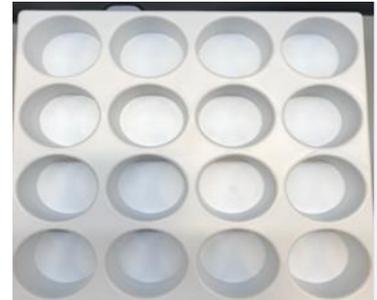
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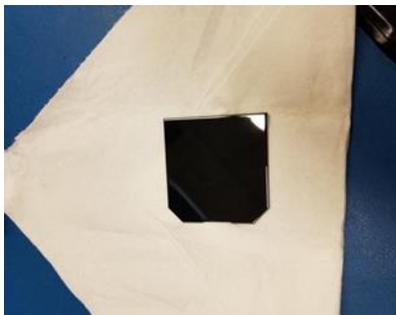
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- 6.3.3 The individual responsible for handling should not be wearing objects such as watches, rings, bracelets or other object which may harm the plating surfaces.
- 6.3.4 Each part should be sufficiently packaged to prevent scratches and part deformities during shipment.
- 6.3.5 Multiple items may be consolidated into larger containers for shipment but the critical surfaces of each item must be protected from contact with other items.



Picture 9: Examples of preferred containers-trays are shown here:



Picture 10: Parts may also be wrapped individually in clean scratch-resistant, and lint free cloths or equivalent.

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- 6.3.6 Plated parts shall not be placed in areas of difficult access or next to aisles where people circulate.

6.4 Polished skins

- 6.4.1 The handling of skins with polished surfaces shall be performed by trained and skilled personnel.
- 6.4.2 For handling, personnel shall wear gloves, such as cotton gloves (E9413735) fine grained leather gloves (E9410561) or gloves made of any other soft and light material to prevent scratches, oxidation (tarnishing) and color tone change.
- 6.4.3 The individual responsible for handling should not be wearing objects such as watches, rings, bracelets or other object which may harm the plating surfaces

WARNING

POLISHED PARTS SHALL BE HANDLED WITH PROTECTION

- 6.4.4 Polymeric film shall be applied on the sides and around the edges/corners of polished surfaces in order to prevent damage of the part during handling, transportation and storage.
- 6.4.5 Components such as skins and transparencies that have sharp edges are further required to be wrapped in soft foam to prevent chipping during transit (See picture below).
- 6.4.6 Unless otherwise specified in the purchase order, all parts shall be packed such that when carried out in boxes they cannot move.
It is preferred to design special boxes and inserts so movement is restricted for polished parts.
- 6.4.7 Skins/transparencies shall not be stacked on top of irregularly shaped or sharp-edge parts. Parts shall not be stacked on top of skins.

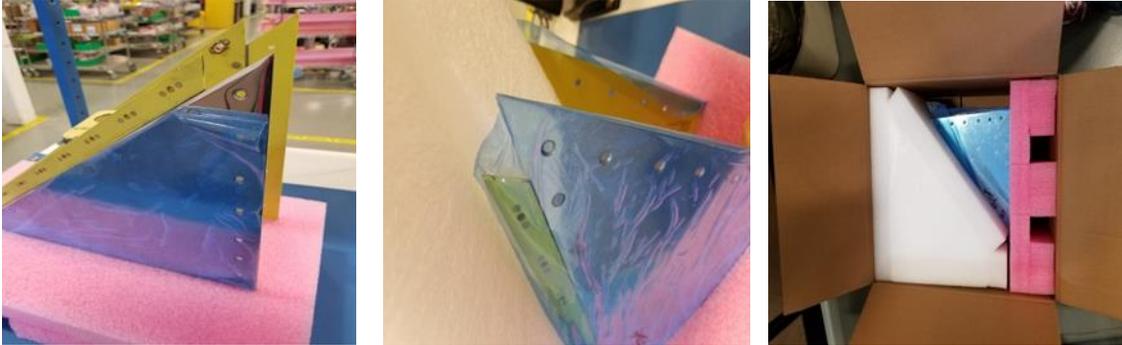
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- 6.4.8 Polished parts shall not be placed in areas of difficult access or next to aisles where people circulate.



Picture 11: Examples of Preferred packaging for skins

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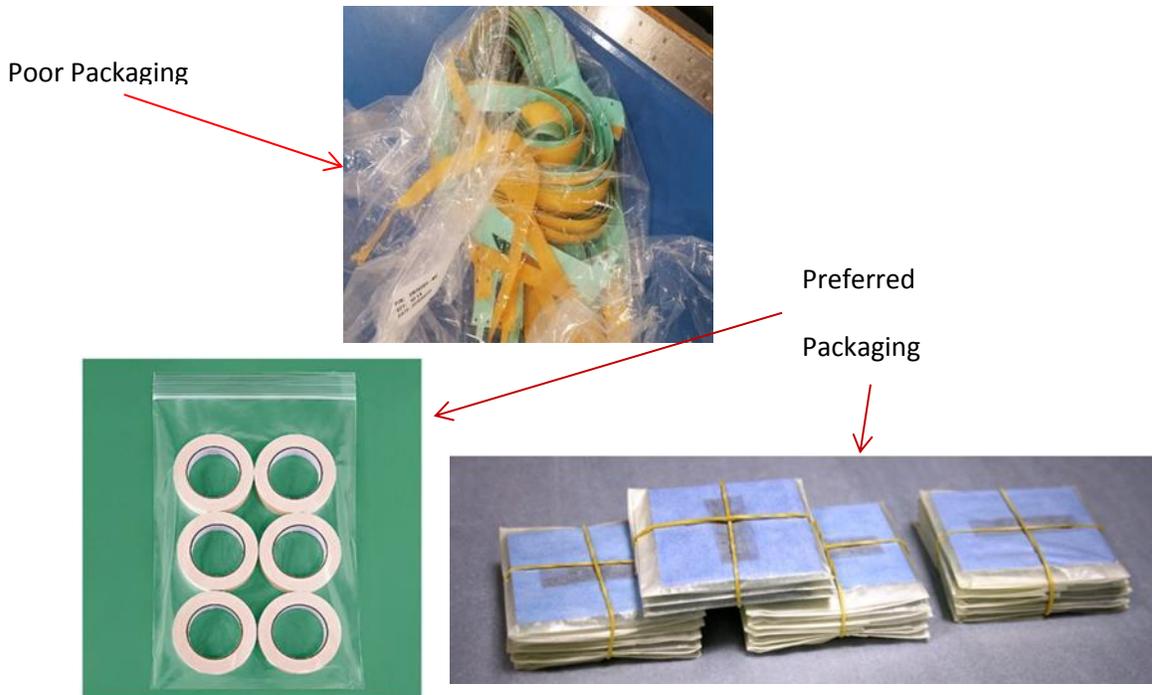
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6.5 Gaskets, pads, tape, tubing, seals, etc....

6.5.1 Time and temperature sensitive parts such as gaskets, pads, tape, tubing, seals, etc.... shall be protected against ultraviolet light (UV), deformation, expiration, and temperatures.



Picture 12: Poor vs Preferred Packaging

6.6 Packaging of optics, glass, lenses, etc...

6.6.1 The handling of optics, glass, and lenses shall be performed by trained and skilled personnel.

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- 6.6.2 For handling, personnel shall wear gloves, such as cotton gloves (E9413735) fine grained leather gloves (E9410561) or gloves made of any other soft and light material to prevent scratches, oxidation (tarnishing) and color tone change.
- 6.6.3 The individual responsible for handling should not be wearing objects such as watches, rings, bracelets or other object which may harm the plating surfaces.

WARNING

Optical components are fragile and poor packaging can lead to damage during the delivery process. Excess handling should be avoided; package immediately after inspection and cleaning.

- 6.6.4 Products shall be carefully wrapped in high quality tissue paper -individually if possible - and placed in bubble bags to ensure no dust or debris settles on the product.



Picture 13: Parts falling off from package and packed individually in small bags or wrap in clean cloths and bagged

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6.7 Metal parts, connectors

- 6.7.1 Parts shall be packaged individually in suitable bags or boxes that there is no risk of scratching, denting, corrosion, mildew, salt contamination or any other damage.
- 6.7.2 The size, shape and weight of the part will determine the type of bag or box to be used. When practical, boxes shall have compartments and parts shall be placed singly in compartments. Boxes shall be of such a construction that they will withstand collapsing if boxes are stacked.
- 6.7.3 The selection of packaging method(s) shall be based on evaluation of the size, weight and shape of the part, the surface finish or the part and the fragility of the part.
- 6.7.4 Painted, Anodized or Alodined Aluminum Structural; items, such as angles, brackets, machined fittings, etc. shall be wrapped or bagged in transparent plastic material. Bags shall be closed by appropriate methods other than staples.
- 6.7.5 When required, parts in containers shall be protected so that movement is restricted.
- 6.7.6 External threads, splines and close tolerance surfaces shall be provided additional protection by means of individual ferrules or additional wrapping.

NOTE 1 All parts shall be packed with absolute protection in mind.

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7.0 Labeling and Marking

All shipping boxes must be properly identified per contract, program and/or specific site requirements. Suppliers shall apply the correct marks and labels to every package and over pack.

Common marking requirements are:

- Shipper and/or consignee information
- Proper shipping address
- Purchased order number
- Item number
- Handling information (i.e. "This way up", "Cargo Aircraft Only", etc...)

7.1. Multiple Purchased Orders

7.1.1 Multiple purchase orders consolidated into one shipping box shall be individually packaged and properly identified per the contract.

7.1.2 Packing Slips shall list all purchase order numbers.

7.1.3 Each Line Item, whether from the same or different purchased orders, shall be packaged separately and properly identified.

7.2 In multiple boxes shipments, the number of each box shall be marked (e.g. 3 of 4)

7.3 Certifications, test reports, or other technical data about the parts shall be attached to the packing sheet when required by purchased order or contract.

7.4 Date of manufacturing (DOM) should be visible to determine shelf life of product.

7.5 If parts packed in wooden crate, Heat treated stamp should be visible for inspection.

7.6 Depending upon content, boxes must identify with instruction such as: "Fragile Handle with Care", "Delicate Unit", "This Side Up", up arrows, "Center of Balance", "Keep Dry", "Do not Use Fork Lift", "Do Not Stack", "Open This Side", "Do not open This Side", "Glass-Fragile", etc....

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8.0 Summary

Failure to comply with the requirements specified in this Work Instruction or any of its applicable specifications without written consent may be subject the supplier's product to rejection and return at the supplier's expense. If goods are damaged or have deteriorated as a result of improper packing or packaging, The Supplier shall, at Buyer's option, either repair or replace the Goods or reimburse Buyer for the damaged or deteriorated goods.

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IR	06/11/2018	EC-XXXX-XX	ALL	Initial Release	Vesna Novakovic	Yes

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