ATL Packaging Standards for Suppliers

Purpose:

This document outlines Alpha Technologies Ltd. (“ATL”) standard requirements for packaging of custom manufactured, fabricated or otherwise processed parts.

Scope:

This document applies to all suppliers who supply to ATL manufactured, fabricated or processed parts as part of meeting the contractual requirements of an ATL-issued and supplier-accepted Purchase Order. Specific requirements within this document apply as appropriate to the parts or services being supplied to ATL. These requirements do NOT apply to non-customized product unless clearly requested by ATL (such as for re-branded products).

Definitions:

ATL: Alpha Technologies Limited.

ATL Part Number: The unique identifier applied to an ATL-custom designed or manufactured part. This number is explicitly noted on any ATL-provided drawing(s) as well as the ATL PO.

Batch Code: Each continuous production run must be identified by a unique batch/lot code. The code must be visible on product labeling and all packaging/shipping labels. One example of a Batch Code is WW-YYYY where WW is the work week and YYYY is the calendar year that corresponds to the date of manufacturing of a part.

Revision: A character or digit that identifies an unique configuration of a part. The revision of a part will, in general, increment if a change is made to the configuration.

Supplier: An organization that supplies finished goods, raw materials and/or services to ATL.

Supplier Part Number: A Supplier-generated and controlled unique identifier, if one exists, that is applied to a Supplier standard part. This number may be noted on ATL POs.

Supplier Code: ATL-assigned three-digit code which is a unique identifier for an ATL Supplier. This code is noted on the ATL PO, beginning with “V” (zeroes that trail the “V” character only may be dropped i.e.: “164” may be used in place of “V000164”, but “16” would not be an acceptable substitution for “V000160”).

1.0 General Packaging Requirements

All parts shall be packaged in such a manner as to protect the parts from damage during transit and/or handling, and to meet any environmental or regulatory compliance requirements.

1.1 Packaging Materials

Corrugated Cardboard should meet or exceed the requirements of *ASTM D5639 / D5639M - 11 Standard Practice for Selection of Corrugated Fiberboard Materials and Box Construction Based on Performance Requirements,* and ideally should be environmentally friendly, with maximum recycled product content and minimal use of toxic inks/glues. Compliance to ISTA 1 Series Test requirements is strongly recommended.

Wood must meet the requirements of IPPC Standard ISPM No. 15: *Regulation of Wood Packaging Material in International Trade (2009)*. Note that this standard does not apply to plywood products.

Packaging Fill Materials such as shaped foam packaging ("peanuts") are not acceptable as packaging fill materials without prior written approval from ATL. Fill materials used should be as reusable and/or recyclable as possible without compromising the ability of the fill to protect products.

Packaging Wrap Materials must be transparent to a degree that allows for a visual confirmation of the part(s) general condition and quantity.

1.2 General Packaging Instructions

All parts shall be packaged as follows:

- Shipping Cartons, including Inner and Outer Shipping cardboard boxes, shall:
  - Be sealed using at least one strip of adhesive tape.
  - Sealing Tape should be 2 inch or 3 inch width with a minimum burst strength of 90 Lbs to meet the requirements of ASTM D5486 / D5486M.
  - Have a maximum gross weight limit of 40 Lbs to meet all construction requirements of Canadian Freight Classification.
  - Meet or exceed UFC (rail) and NMFC (motor) Rule 41, Item 222
  - References:
    - *ASTM D5639 / D5639M - 11 Standard Practice for Selection of Corrugated Fiberboard Materials and Box Construction Based on Performance Requirements.*
    - *ASTM D5486 / D5486M - 06 Standard Specification for Pressure-Sensitive Tape for Packaging, Box Closure, and Sealing*
    - *ISTA 1 Series Test Procedures, International Safe Transit Association:* http://www.ista.org/
- Wooden Crates shall meet or exceed:
  - *ASTM D6039 Standard Specification for Crates, Wood, Open and Covered; and/or*
  - *ASTM D7478 Standard Specification for Heavy Duty Sheathed Wood Crates.*

- Pallets shall meet *ISO Standard 6780: Flat pallets for intercontinental materials handling—Principal dimensions and tolerances*.
    - Be 1219mm × 1016mm (width by length) in size. Other sizes require prior written approval from ATL.

1.3 General Labeling Instructions

All Outer **and** Inner Shipper boxes shall be labeled, on a minimum of one side of the box that is facing out, in a manner that clearly identifies the following information:

- The ATL Part Number and revision (Barcode and Human Readable)
- Serial Number for Items with Serial Number (Barcode and Human Readable)
- Quantity of parts inside
- ATL PO number
- Date of Manufacture (DOM) or Batch Code
- Software Revision (if requested by Alpha)
- Country of origin
- An indicator if the contents are fragile
- An indicator if the contents must remain dry
- Note: pictograms are acceptable i.e.:

Additionally, all Outer Shipper boxes shall include the following information:

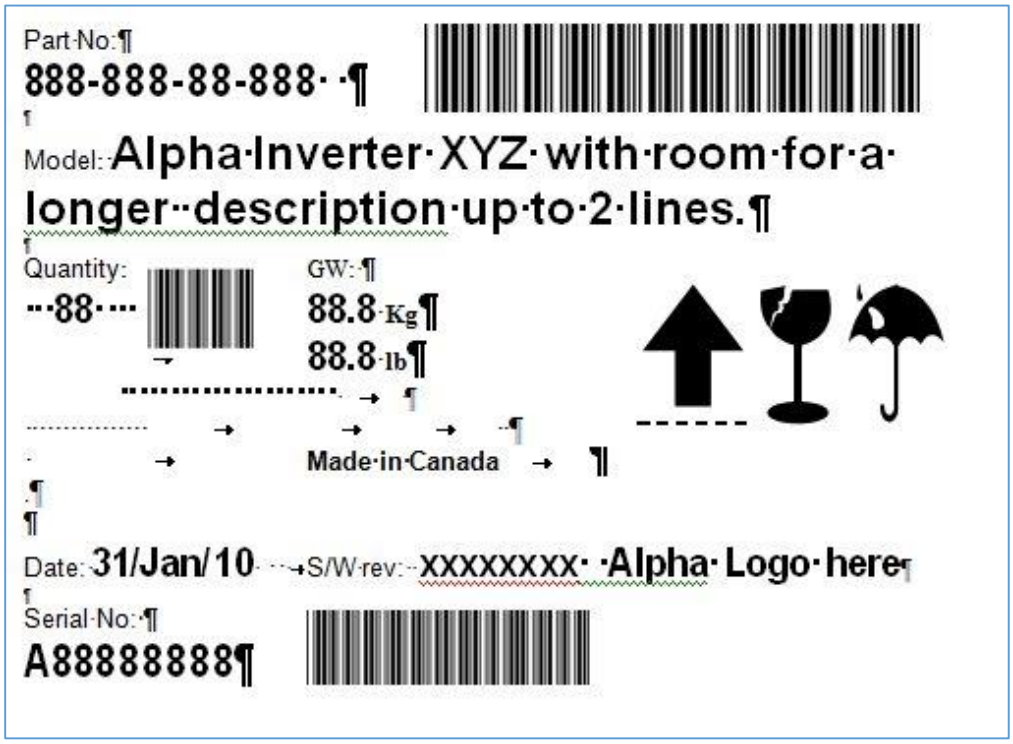
- The quantity of Inner Shipper boxes (pieces) contained within
- The total quantity of parts inside the Outer Shipper (total quantity of parts shipped)
- Supplier name, address and (optional) supplier code
- An indicator if the contents are fragile
- An indicator if the contents must remain dry
- Weight of the Outer Shipper, once packaged, in both metric and imperial units.
- A directional indicator noting TOP of the Outer Shipper box (i.e.: “UP” Arrow or “This Side Up” label) on a minimum of two (2) faces of the box.

Label type:

- The label size shall be minimum 4” by 5.5”, or A6 (105x148mm) size. If a larger size is used, all text and graphics shall be scaled up proportionately. Notify ATL for approval if label size is less than specified.
- The material shall be computer imprintable polyester or equivalent. Paper labels are not preferred.
- The colors shall be black text on white background.

- The quality of printing shall be 300 dpi or better.
- Label text (“Model”, “Part No”, etc) should be Arial font or equivalent, minimum 10 point.
- Any barcodes shall be code 39 or code 128 format, minimum 10mm (3/8”) high.

A sample label is shown here:



Parts shipped to ATL on a pallet shall be secured to the pallet and wrapped with an appropriate film-like material to protect any product. A label shall be applied to the wrapped surface that clearly identifies the following information:

- The ATL Part Number and revision
- Quantity per wrapped pallet
- ATL PO number
- Supplier name, address and (optional) supplier code
- Country of origin
- An indicator if the contents are fragile (including directional indicator)
- Weight of the pallet and parts, once packaged, in both metric and imperial units.

Parts shipped to ATL in a crate shall be secured inside the crate and wrapped with an appropriate film-like material to protect any finished surfaces. Foam inserts are permitted. A label shall be applied to the crate exterior, on a minimum of two (2) faces of the crate and the top of the crate, that clearly identifies the following information:

- The ATL Part Number and revision
- Quantity of parts inside
- ATL PO number
- Supplier name, address and (optional) supplier code
- Country of origin
- An indicator if the contents are fragile
- An indicator if the contents must remain dry
- Weight of the crate and parts, once packaged, in both metric and imperial units

Additionally, a shipped crate shall have a directional indicator noting TOP of the crate (i.e.: “UP” Arrow) on a minimum of two (2) faces of the crate.

2.0 Specific Packaging Requirements

2.1 Printed Circuit Board Assemblies (PCBAs)

Each individual assembly is to be enclosed in a static shielding bag. The following static shielding bags are pre-approved by ATL for use:

Description	Manufacturer	Manufacture P/N
Bag Static Shielding 4”x6”	3M	1900 – 4 – 6
Bag Static Shielding 6”x10”	3M	1900 – 6 – 10
Bag Static Shielding 6”x18”	3M	1900 – 6 – 18
Bag FRU-6, 12”x10” W/4” Flap Cushioned Anti-Static	Seco Industries	77-2 12”x10” W/4” Flap
Bag, VXI 16”x12” W/4” Flap Cushioned Anti-Static	Seco Industries	77-2 12”x10” W/4” Flap

Alternate shielding bags may be used with prior approval from ATL.

Each open end is to be folded over and sealed using a tamper proof label that incorporates a JEDEC electrostatic warning symbol.

2.2 ESD Sensitive Parts
ESD sensitive parts shall remain in the manufacturer's original packaging wherever possible. These parts shall be enclosed in a static shielding bag, and each open end is to be folded over and sealed using a tamper proof label that incorporates a JEDEC electrostatic warning symbol.

2.3 Moisture Sensitive Parts
Moisture sensitive parts shall be packaged in accordance with JEDEC J-STD-033B.1. A HIC card and appropriate amount of desiccant shall be included in the package.

2.4 High-Finish Surfaces
All items with high-finish surfaces shall be packaged in a manner that eliminates the risk of marring due to normal material handling or distribution, jostling or vibrations.

2.5 Painted Surfaces
All items with painted surfaces shall be packaged in a manner that eliminates the risk of marring due to normal material handling or distribution, jostling or vibrations.

2.6 Heavy Items (>35kg/>75lb)
Final packages that weigh in excess of 35kg/75lbs shall have an appropriate indicator such as a “HEAVY” label, on a minimum of two (2) faces of the package.

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