

# LMSSC PACKAGING STANDARD

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## HEAT PIPE EXTRUSION REQUIREMENTS (NON HAZARDOUS)

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### 1.0 SCOPE

This standard provides a method for packaging of contamination controlled extrusions at the suppliers facility prior to shipment assuring retention of the cleanliness level achieved through normal extrusion processing practices.

### 2.0 REFERENCES

None

### 3.0 REQUIREMENTS

#### 3.1 GENERAL

- 3.1.1 Heat Pipe extrusions from this standard are not filled with refrigerant (at this assembly level).
- 3.1.2 The quantity per unit package shall be one (1) each.
- 3.1.3 The item shall be manufactured on standard extrusion equipment with the level of cleanliness applicable for Aluminum extrusion processing.
- 3.1.4 Environment controlled work area, using clean processes and materials typical for extruded aerospace and medical components.
- 3.1.5 Special attention shall be given to the handling of clean hardware prior to packaging, to ensure that any extraneous particulate and liquid contamination is not introduced into clean processed hardware before packaging.
- 3.1.6 All materials/devices making intimate contact with a significant interior surface shall be as clean as required for item. The materials or equipment in direct contact with significant interior surfaces shall not deposit particulate or liquid contaminants.
- 3.1.7 Internal plugs or push-on type caps shall not be used. No materials, other than those described herein shall be used for extrusion packaging.
- 3.1.8 Pressure-sensitive, commercially available, packaging tape can be used to secure foil and polyethylene sheeting.
- 3.1.9 Halogenated plastics (materials containing elements of fluorine, chlorine, bromine or iodine) shall not be used for any packaging application.
- 3.1.10 Any conflict between the use of packaging materials or methods specified in this standard and the item specification requirements, the requirements of the item specification shall take precedence.

#### 3.2 UNIT PACKAGING

- 3.2.1 Unless otherwise specified, the clean processed extrusion ends shall be first protected by applying an Aluminum foil (2.0" x 2.0" x 0.002 to 0.005"), folded over open end surfaces and securing with commercially available packaging tape (see Figure 1). Provide 'dog eared' ends on tape for easy removal (see Figure 2).

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**Figure 1. EXTRUSION PACKAGE MATERIALS : ALUMINUM FOIL & TAPE**



**Figure 2. FOIL SECURED WITH TAPE on BOTH ENDS**

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- 3.2.2 Over foil sealed extrusion ends, wrap a short length of 0.004" polyethylene sleeve around each end of the extrusion and secure using commercially available packaging tape, rubber bands optional. Provide 'dog eared' ends on tape for easy removal (See Figure 3).



**Figure 3. FOIL PROTECTED EXTRUSION WITH POLY SLEEVE TAPED ENDS**

- 3.2.3 Install complete casing, with protected ends, into a 0.004" polyethylene sleeve (See Figure 4).



**Figure 4. SEALED POLYETHYLENE SLEEVE with FOIL AND POLY SLEEVE TAPED ENDS, READY FOR SHIPMENT**

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3.2.4 Expel excess air, as much as possible, from bag and close by heat sealing both ends. Allow sufficient material to permit at least one additional heat seal.

### 3.3 INTERMEDIATE PACKAGING

Not applicable.

### 3.4 PACKING

3.4.1 Each bagged extrusion shall be packed into a container(s) of appropriate size. Shipping containers as packed shall protect each item and package during ordinary handling and shipping and shall meet the minimum packaging requirements of the common carriers for acceptance.

3.4.2 Dunnage used to immobilize clean packaged extrusion(s) shall provide adequate protection to the extrusion(s) to prevent damage during handling/shipment.

### 3.5 MARKING

3.5.1 Unit Packaging Marking – None, provided on extrusion exterior.

3.5.2 Shipping Container Marking – Label or mark each container to show part number per contracting document, the LMSSC contracting document number, supplier, destination and quantity of parts.

3.5.3 Special precautionary and handling markings shall be applied as required.

## 4.0 QUALITY ASSURANCE

4.1 Packaging shall be accomplished in such a manner as to prevent physical damage to, or degradation of, the packaged items during delivery to the using activity. It shall be the prerogative of LMSSC to return damaged items, at supplier's expense, when such damage is attributable to improper or inadequate protection.

## 5.0 NOTES

Not applicable.

## REVISION HISTORY

Release Date	Rev	Change Description	Responsible Engineer
07-07-2009	0.0	Original Release	Allen Elsmore
03-28-2016	0.1	Admin Change. Section 3.2.1: Changed thickness of aluminum foil to a range of 0.002" to 0.005".	Bill Manning

## APPROVALS

Approvers	Disciplines	Date: MM-DD-YYYY
Tom Shanley	PHST (Lead)	07-07-2009