



# Lenovo Packaging Specification 41A0615

## Field Replaceable Unit (FRU) Packaging

Written by:	Benson Li	19NOV2018	Worldwide Package Engineer
Reviewed by:	Yuhji Takizawa	20NOV2018	Worldwide Package Engineer
	KK Chen	20NOV2018	Worldwide Package Engineer
Approved by:	Royal Bai	20NOV2018	Manager, WW Packaging PE

PN 41A0615	REV: A4	Release Date:			
Page 1 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.

**REVISION HISTORY**

Rev	Revision Description	Date	Approved By
A0	Creation	15SEP06	M,Shayesteh
A1	Update	16JUN12	Royal Bai/Karen Lee
A2	1.Update: 2.3 Corrugated container (Carton/Box) requirement 2. Update:2.6 Security Seals 3.Update 3.0Special Requirements. Add photos for supplement and redefine heavy weight 12kg.	30NOV12	Royal Bai/Karen Lee
A3	1.Update security label and Tape PN on page 6 2.Update HDD Packaging photo on page 8	02APR2018	Royal Bai
A4	Update 2.2 Environment.Add India plastic waste management rules on page 5	19NOV2018	Royal Bai

PN 41A0615	REV: A4	Release Date:			
Page 2 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.



## Table of Contents:

- 1.0 Instruction
  - 1.1 Applicability
  - 1.2 Deviation
- 2.0 General Requirements
  - 2.1 Packaging Design
  - 2.2 Environment
  - 2.3 Corrugated container (Carton/Box) requirement
  - 2.4 Cushion
  - 2.5 Packaging Testing
  - 2.6 Security Seals
  - 2.7 Consistency
  - 2.8 FRU Marking and Labeling
- 3.0 Special Requirements
  - 3.1 Fragile Parts
  - 3.2 Electronic Parts
  - 3.3 Moisture Sensitive
  - 3.4 Heavy Parts

PN 41A0615	REV: A4	Release Date:			
Page 3 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.

## 1.0 Instruction

This document addressed the minimum packaging requirements for FRUs. The following terms are also occasionally used to describe the FRU's and are equivalent;

- Customer Replaceable Unit
- Field Service Part
- Spare Part.

### 1.1 Applicability

The minimum requirements that appear in this document have been established for the purpose of achieving damage free delivery. Additional measures may be taken to achieve even higher assurance of damage prevention. Conformance to these requirements is mandatory for all shippers of Field Replaceable Units (FRUs) distributed to Lenovo customers.

### 1.2 Deviation

No deviations are to be made without written approval from Lenovo World Wide Packaging Engineering team.

PN 41A0615	REV: A4	Release Date:			
Page 4 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.

## 2.0 General Requirements

The following minimum requirements which will apply to virtually all shipments of Field Replaceable Units (FRUs).

### 2.1 Package Design

1. The package must provide superior product protection but must also be designed with the needs of the customer in mind. The package must be easily handled, unpacked, and repackaged repeatedly in the field to be effective. The individual pack is required to meet the various shipment requirements.

### 2.2 Environment

There are several ways to design environmentally friendly packaging.

1. Source reduce by increasing the recycled material content in the package.
2. Reduce the size of package without compromising protection.
3. Do not permanently commingle (bond together dissimilar materials)
4. Use materials that are widely recycled.
5. Reusable packaging should be considered only where a closed loop logistics system is practical.
6. India plastic waste management rules:
  - 1> No plastic bags, plastic sheets used for the products, accessories, pub groups etc. should not be less than 50 microns
  - 2>All plastic bags, must have printed the thickness and type of plastic.
  - 3>These all should be in natural shades

The details. please refer to Lenovo engineering specification 41A0613 – “Recyclable Packaging Materials Selection and Identification”.

### 2.3 Corrugated container (Carton/Box) requirement

Single wall carton and tuck style box is strongly recommended and the minimum requirement is 200 psi/ECT 32.

### 2.4 Cushion

FRU packages must provide sufficient protection to ensure damage free delivery and minimize the use of cushioning material consumption while driving the use of environmentally sustainable materials. In addition to specifying the use of easily recyclable materials, Lenovo Corporation promotes recycling through its purchase of products that contain recycled materials. To assist in achieving this objective, Lenovo requires that

PN 41A0615	REV: A4	Release Date:			
Page 5 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.



plastic packaging must be manufactured using the maximum possible post consumer recycled resin. This requirement is contingent upon several factors, including the existence of processes that produce equivalent performing materials. The percentage of post consumer content technically achievable depends on the chemistry of the material utilized, the performance requirements of its end use application, and the availability of usable post-consumer recycled feed stocks.

## 2.5 Packaging Testing

All packages for fragile parts must be qualified by lab testing. All the packaging tests must comply with the following specifications and procedures strictly:

Mass (Packaged Product)			Number of Shocks (Drops)	Typical Design Drop Height**					
Class	kg	lbs*		Boxed Without Pallet		Palletized		Minimum Pack (No Box)	
	Above - Including	Above - Including		mm	in*	mm	in*	mm	in*
Manual	0-10	0-23	10	910	36	600	24		
Manual	10-30	23-67	10	760	30	450	18		
Manual	30-40	67-89	10	600	24	450	18		
Manual									
Manual	40-60	89-133	(1 bottom) 5 (4 sides)			450	18		
			(2 bottom) 12 (10 bottom)			300	12		
							300	12	100
Non-manual	60-90	133-199	(1 bottom) 5 (4 sides)	450	18				
			(2 bottom) 12 (10 bottom)			300	12	250	10
							100	4	50
Non-manual	90-120	199-265	(2 bottom) 12 (10 bottom)			250	10	200	8
							100	4	50
Non-manual	120-240	265-530	(2 bottom) 12 (10 bottom)			200	8	150	6
							50	2	25
Non-manual	240-450	530-993	(2 bottom) 12 (10 bottom)			150	6	100	4
							50	2	25
Non-manual	450 - Above	993 - Above	(2 bottom) 12 (10 bottom)			100	4	75	3
							50	2	25

## 2.6 Security Seals

2.6.1 FRU packages must be Security Sealed by the shipper. Lenovo requires the usage of following tape and labels to properly secure productions. It is very important for Lenovo to maintain authenticity and overall security from tampering throughout Lenovo's entire supply chain, manufacturing to final destination. The label and tape must be purchased from Lenovo assigned supplier.

PN 41A0615	REV: A4	Release Date:			
Page 6 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.

Seal Type	Part Number	Description
Label	SP10K38391	Security seal for tuck style box
Tape	SP10K38392	Think tape,50meters long,50mm in width(by hand)
Tape	SP10F77539	Think tape,50meters long,72mm in width (by hand)

2.6.2. Optional – The parts shown in the below table do not require security seals mandatorily, but need to be submitted to lenovo PKG engineer for approval.

List	Definition	Examples
1	Non-Fragile items including hardware items which require little, if any physical protection.	Nuts, bolts, screws, caps, buttons, grommets, spacers, gears, knobs, and similar items.
2	Parts which are individually packaged by the original shipper in flexible materials (bags, pouches, envelopes, and so on).	Cables, power cords, and similar items.

## 2.7 Consistency

Once the packaging method is determined for a particular item it is essential to consistently apply that same packaging specification at all sources for that part number(plants, suppliers, vendors, etc.).

## 2.8 FRU Marking and Labeling

For all labeling requirements related to identification of the contents, country of origin, and similar information provided on the package label refer to Global Labeling Implementation Guide, Volume 6, FRU Package Labels, found at Internet:  
[http://www.lenovo.com/global\\_procurement/us/en/Guidelines/Global\\_Labeling.html](http://www.lenovo.com/global_procurement/us/en/Guidelines/Global_Labeling.html)

PN 41A0615	REV: A4	Release Date:			
Page 7 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.

### 3.0 Special Requirements

#### 3.1 Fragile Parts

Any parts which requires special packaging to prevent damage is considered fragile. All fragile parts regardless of value must be individually packaged by the shipper in rigid containers (usually in plain Kraft unprinted corrugated cartons) by the shipping location. The parts must be packaged in a manner suitable for reshipment and multiple redistribution's in the field network without additional packing. The fragile parts include but are not limited to Cards, boards, modules, power supplies, disk drives, LCD panel, and similar items.

For example, the following EPE cushion and corrugated box are necessary.



HDD packaging



Power supply packaging.

#### 3.2 Electronic Parts

Many electronic components are susceptible to damage due to electrostatic discharge (ESD) and must be packaged individually by the shipper in ESD protective packaging. All packaging materials for ESD-sensitive items must be Lenovo-approved. Generally, there must be a static dissipative materials closest to the ESD sensitive part, one conductive or shielding layer used to surround the ESD sensitive item and an ESD warning label in the package structure. There must not be any static generating materials in the package, even if they are outside of the shielding layer.

For example, the following ESD bag and ESD box are necessary.

PN 41A0615	REV: A4	Release Date:			
Page 8 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.





ESD bag



ESD box

### 3.3 Moisture Sensitive

Components or assemblies which are subject to corrosion due to moisture must be packaged in barrier bags(metal lined) with desiccant hermetically sealed inside.

### 3.4 Heavy Parts

Packages which exceed 12kg are considered heavy. Special design, marking, and palletization requirements apply to all heavy packages to ensure safe handling in the field.

PN 41A0615	REV: A4	Release Date:			
Page 9 of 9		20NOV2018			

This document is property of Lenovo. Its use is authorized only for responding to a request for quotation or for the performance of work for Lenovo. All questions must be referred to Lenovo WW Packaging Team.