

PACKAGING SPECIFICATION FOR SUMITOMO SCOTTSVILLE COMPONENTS DIVISION

All packaging must comply with the requirements set forth.

No alternative packaging will be accepted without prior written approval.

Any requests for alternative packaging should be submitted using the Sumitomo Packaging Specification Data Sheet

See the following attachments for Sumitomo Packaging Specification Data Sheet:

- 1) Packing Specification Data Sheet
- 2) Packing Specification Data Sheet Sample

1) Specification of bags

Structure:

- 1) All product must be bagged inside of external container.
- 2) Bag size shall be product variable except where specified (example: seal production)
- 3) Bags to be clear in color
- 4) Bag Mil thickness must comply with the following (unless otherwise specified):
 - * Bag Pack = 1.5mil minimum
 - * Bulk Pack = 2.0mil minimum

2) Specification of Boxes:

Structure:

- 1) Boxes must comply with either the B-Carton or J-Carton Specifications unless otherwise specified.
- 2) Box identification marking:
 - a) Pass through product - Box exterior must display Sumitomo name/emblem per B/J-carton drawing
 - b) Consumable parts - Box exterior must display Supplier Name/Markings
- 3) Box construction must comply with a minimum of 44 ECT requirements (or equivalent)
- 4) See the following attachments for Finished good box specifications.
 - a) B-Carton box dwg
 - b) J-Carton box dwg

3) Box Packing

Unit Weight:

Maximum allowable shipping weight of each box & product must not exceed 22lbs (unless otherwise specified)

Packing Method

- 1) Product shall be packed in the box in a manner to prevent damage to product while in transit and warehousing. Quantity of product per unit shall take into consideration sufficient space to prevent compression of parts due to overfilling the box.

4) Specification of Pallets:

Structure:

- Pallets must comply with the pallet specifications included here:
- 1) Pallets must be ISPM 15 certified and be visibly marked to show compliance.
 - 2) Pallets must utilize spiral nails.
 - 3) Pallet style and dimensions must comply with the attached pallet drawing. :
 - 4) See the following attachment for pallet specifications:
 - a) Wood pallet dwg

5) Palletized box configuration

Packaging:

- 1) Maximum packaged skid height is 65" - measured from floor to top of load
- 2) All box labels must be visible from the exterior of pallet to allow scanning without removing boxes.
- 3) All pallets must be packaged in a manner to prevent damage to product and container while in transit and/or storage
- 4) Double stacking of pallets is acceptable if sufficient protection (sturdy divider) is secured in place between top of bottom load and bottom of top pallet.

Securing of boxes/loads to pallet:

Boxes/loads must be secured to pallets by one of two methods:

- 1) Stretch wrap
 - * 70 gage wrap minimum
 - * Number of wraps: 3 wraps on bottom / 2 wraps on top (minimum)
 - * Wrap must be secured to the pallet with minimum of 3 wraps
- 2) Banding
 - * Plastic banding required

Note: Corner protectors should be used in the case that any box deformation occurs due to the application of the wrap or banding.

6) Specification of Raw Material Resin Container:

All resin shall be received in one of two methods:

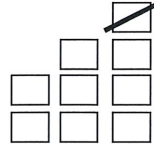
- 1) Silo
- 2) Gaylord

Silo Transfers:

Silo transfer requires in-line magnets (with screen) from truck to silo
Supplier must establish controls to prevent the creation of "strings" due to material transfer at excessive speed.
Dense phase offloading is required.

Gaylord specification:

- 1) Size:
* 48"x45"x40" tall
- 2) Strength:
* 350lbs bursting test No. 2317
- 3) Stacking:
* Stacking method must be identified on Gaylord
Example: 3 high max stacking
2 high max stacking if over 1800lbs



7) Specification for Seal packaging:

All seal packaging must comply with the enclosed Seal Packaging Specification.

- 1) See the following attachment for seal packing specifications:
 - a) Seal Box / Bag Packaging Specifications

8) Specification for Terminal Reel Packaging:

Any terminal product packaged on terminal reels must comply with the specifications included here.

Non-returnable packaging

- 1) Terminal reels must comply with the enclosed terminal reel specification unless otherwise specified.
- 2) Reel construction must comply with a minimum of 44 ECT requirements (or equivalent).
 - a) See the following attachment for terminal reel specifications
 - 1) A1, A2, and A3 Reel Dimension Specifications
- 3) Terminal reel splicing:
 - a) Maximum of three (3) spliced joints allowed per reel
 - 1) Splice qty per reel must be indicated on reel label
 - b) Splices must be made using copper wire
 - c) Splice length should not exceed 50mm in length
- 4) Terminal reel packaging
 - a) Terminal reels must be shipped in boxes that comply with the Terminal Reel Box specification below:
 - b) Box construction must comply with a minimum of 44 ECT requirements (or equivalent).
 - 1) Bursting Test: 200lbs/sq inch
 - 2) Min Comb WT Plies: 84 lbs/M sq ft
 - 3) Size limit: 75 inches
 - 4) Gross WT LT: 65 lbs
 - 5) See the following attachment for terminal box specifications
 - a) Terminal Box dwg
 - c) Terminal reel qty/box will vary depending on reel specification
 - d) Labeling is required on each boxes and reel to ensure traceability.

Returnable Packaging.

Returnable packaging specifications are currently being developed.

At this time any supplier seeking to provide returnable shipping containers for terminal products must submit packaging proposals to SV5 for approval. Proposals should be submitted per the Packaging Specification Data Sheet included in the header of this document. Any/all packaging proposals must receive SV5 mgmt approval prior to shipment.

9) Specification for Metal Raw Material:

All metals (Raw Material) must comply with the enclosed Raw Material Specification.

See the following attachment for Metal Raw Material specifications

- 1) Terminal Manufacturing Group, Raw Material Specifications

10) Specification for Resin Raw Material:

All pelletized resin material must comply with the enclosed Resin Specification.

- 1) See the following attachment for Resin Material Pellet specifications
 - a) Specification of Pelletized Alloy Resins

- 2) Chemical composition
 - a) Must comply with design requirements established during product development.

- 3) Mil cert requirements
 - a) Material certs are required to be submitted as follows:
 - 1) Each raw material shipment
 - 2) Each raw material lot
 - b) Material cert minimum required information::

1) Supplier Information	11) Pellet Appearance
2) Material Grade	12) Melt Flow
3) Material Part Number	13) Tensile Strength
4) Lot Number	14) Tensile Elongation
5) Production/Cert Print Date	15) Tensile Strain
6) Order date	16) Notched Charpy
7) Ship Date	17) Izod Impact V-Notched
8) Qty Shipped	18) Flexural Strength
9) PO Number	19) Flexural Modulus
10) Material Color	

- 4) Sample requirements
 - a) Silo shipments require material samples to be submitted with material certs:

- 5) Additional requirements
 - a) Meets FMVSS 302 (Supplier maintains records)
 - b) Meets SOCELV (IMDS registration required by supplier)

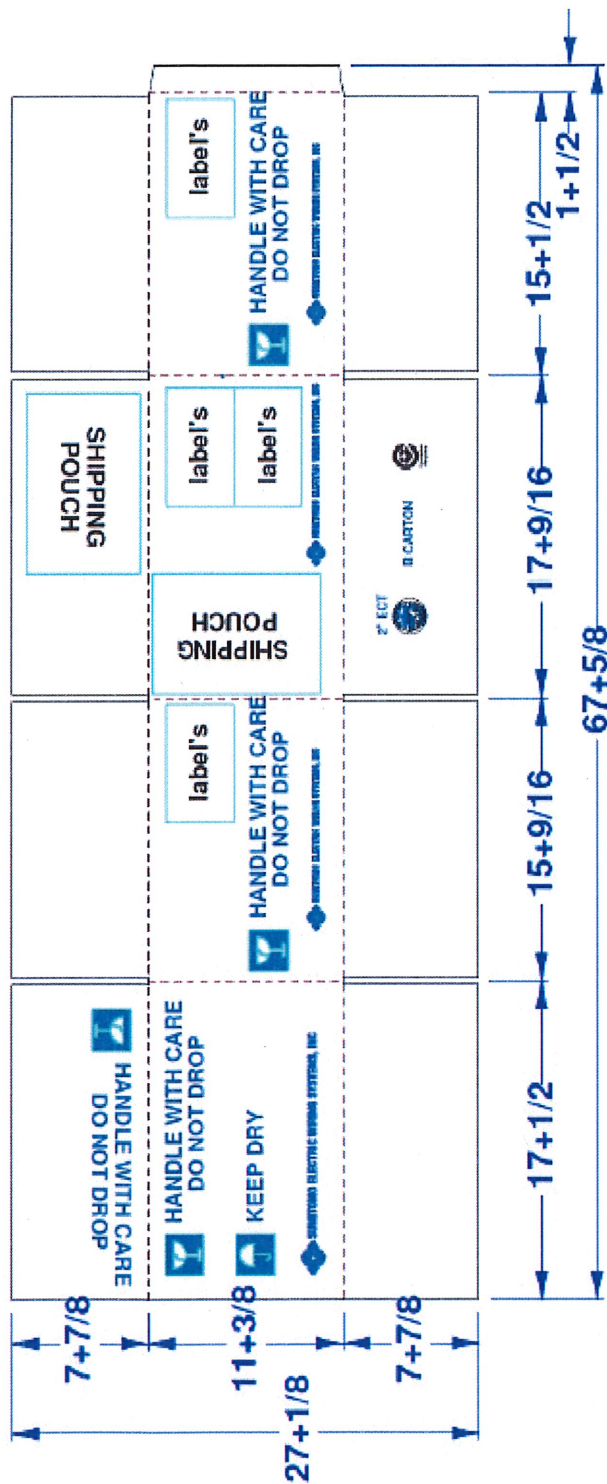
11) Box label layout:

- 1) Molding subcontractors labels must follow the enclosed Box Label Layout specification
- 2) See the following attachment for Box Label specifications
 - a) Box Label Specification

PACKAGING SPECIFICATION DATA SHEET

PART INFORMATION PHOTO (or Sketch)		WEIGHT PER PIECE (G)	0.17	FINISHED P/N:	69181000
DIMENSIONS (cm)	L W H	10.4		OEM PROGRAM:	69181000
BOX PHOTO (or Sketch)			DESTINATION PLANT(S):		
BOX TYPE	<input checked="" type="checkbox"/> Carton Box <input type="checkbox"/> Carton Box with dividers <input type="checkbox"/> Returnable Plastic Container		QTY/Bag 3000		
SKID PHOTO (or Sketch)			Qty/Box 3000		
PALLET DIMENSIONS	DIMENSIONS (cm) L W H 132 81.2 11.4		NAME B-Carton		
HEAT TREAT PER ISPM REQUIREMENTS	Boxes secured to pallet with shrink wrap.		MATERIALS Cardboard		
FULL PALLET DIMENSIONS	DIMENSIONS (cm) L W H 132 81.2 189.2		Preventive Degradation (if Applied)		
CONTAINERS PER PALLET	MIN: 6 Boxes MAX: 36 Boxes		<input type="checkbox"/> Oiling <input type="checkbox"/> Silica-Gel (Desiccant) <input checked="" type="checkbox"/> Sealed bags <input type="checkbox"/> Sealed bags w/water		
Additional Details:			DEVIATION DETAILS FROM SV STANDARD PACK SPECIFICATIONS:		
1 bag/box			Request deviated box size Requested size: 10x12x14 Dimensions in inches		
SUMITOMO PART NUMBERS WITH SIMILAR PACKAGING:			APPROVED / NOT APPROVED WITH THE FOLLOWING REQUESTED CHANGES AND COMMENTS:		
1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					
9.)					
10.)					
PART NAME: 11245W503F-NA			SUMITOMO USE ONLY		
SUPPLIER NAME: 1 Molding Corporation			CONCEPT PKG APPROVAL		
SUMITOMO SUPPLIER CODE: 123456			MATERIAL FLOW ENGINEERING		
SUPPLIER ADDRESS: 1 Molding Rd, Google, Ky 12345			<input type="checkbox"/> Approved as is <input type="checkbox"/> Approved with changes <input type="checkbox"/> Not Approved		
PHONE: 555-555-9955			SIGNATURE:		
FAX: 555-555-2755			DATE:		
CONTACT: John Doe			FINAL PKG APPROVAL		
TITLE: Quality Engineer			PLANT		
EMAIL: johndoe@here.com			<input type="checkbox"/> Approved as is <input type="checkbox"/> Approved with changes <input type="checkbox"/> Not Approved		
DATE: 4/25/2018			SIGNATURE:		
Wrapped Yes No Strapped No No Pallet Stackable No No			DATE:		

REMARK 1: REMEMBER, THE RESPONSIBILITY FOR ENSURING COMPONENT QUALITY FROM YOUR PLANT TO THE POINT OF USE REMAINS WITH YOU - THE SUPPLIER OF THE PRODUCT.



PROPERTY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SUMITOMO ELECTRIC WIRING SYSTEMS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SUMITOMO ELECTRIC WIRING SYSTEMS IS PROHIBITED.

PART NUMBER		B-CARTON		UNLESS OTHERWISE SPECIFIED:		NAME		DATE		Sumitomo Electric Wiring Systems	
STYLE		PSC		DIMENSIONS ARE IN INCHES		BT		07/13		TITLE	
BOARD CONSTRUCTION		44 ECT C		TOLERANCES:		DRAWN				B-Carton	
				FRACTIONAL ± 1/8"		CHECKED				SIZE DWG. NO.	
						ENG. APPR.				A	
										REV	
NEXT ASSY		USED ON		MATERIAL		COMMENTS:				SCALE: 1:1	
APPLICATION				RIBBON						WEIGHT:	
				DO NOT SCALE DRAWING						SHEET 1 OF 1	

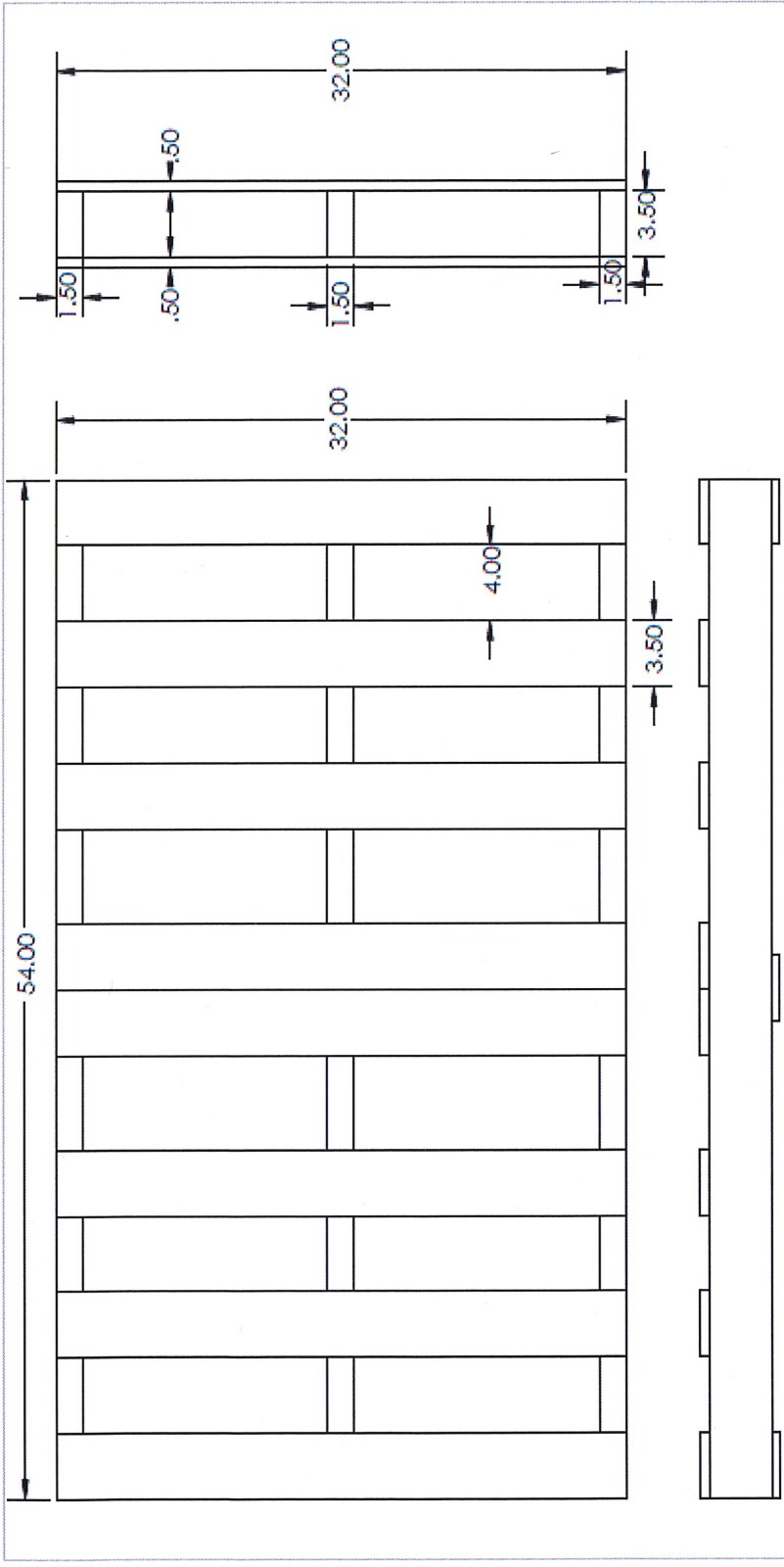
5

4

3

2

1



		Sumitomo Electric Wiring Systems		Wood Pallet		SIZE DWG. NO. REV A Wood Pallet
		TITLE:		SCALE: 1:16 WEIGHT:		SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR MATCH ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN CHECKED ENG. APPR.	NAME BT JS	DATE 05/12 05/12	COMMENTS: Pallet shall be heat treated.		DO NOT SCALE DRAWING
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SUMITOMO ELECTRIC WIRING SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SUMITOMO ELECTRIC WIRING SYSTEMS IS PROHIBITED.	INSURE GEOMETRIC TOLERANCING PER MATERIAL FINISH	APPLICATION USED ON NEXT ASSY	USED ON NEXT ASSY	5	4	3
				2	1	1

WORK INSTRUCTION

AREA:	Supplier Quality Assurance
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TITLE: Seal Box / Bag Packaging Specifications

Purpose:

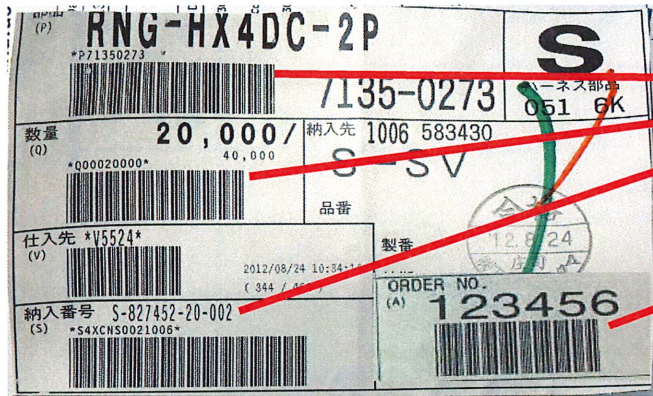
This instruction details seal box and seal bag labels and packaging requirements. This document provides additional information to be used in conjunction with the SEWS Part Identification and Labeling Requirements document.

Seals

Maximum seal box weight:	22 lbs.
Maximum seal box size:	L -17.5", W - 16", H - 11"
Maximum seal bag volume:	.134 cubic foot (One US Gallon)
Bag Quantity (increments of 500) must not exceed size of bag specified above	
*Every seal bag label must contain part number and quantity (See example of format below)	

No Seal Bulk Pack Allowed

Seal Box label Format Example: SEWS Part Identification and Labeling Requirements (section 4.7, 5.0, 5.1, 5.3)



*Critical parts of the label

Barcode Reads (example)

P71350273

Q00020000

S4XCNS0021006

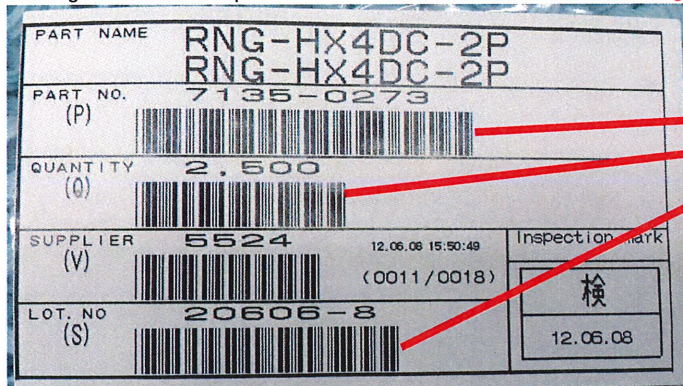
In addition to section 5.1 no dash (-) allowed in barcode

Barcode Reads (example)

A123456

Order number to be designated by SEWS and informed to supplier

Seal Bag Label Format Example: SEWS Part Identification and Labeling Requirements (section 5.0, 5.1, 5.3)



*Critical parts of the label

Barcode Reads (example)

P71350273

Q02500

S206068

In addition to section 5.1 no dash (-) allowed in barcode

Addendum:

Sumitomo Electric Wiring Systems, Inc.

Part Identification and Labeling Requirements

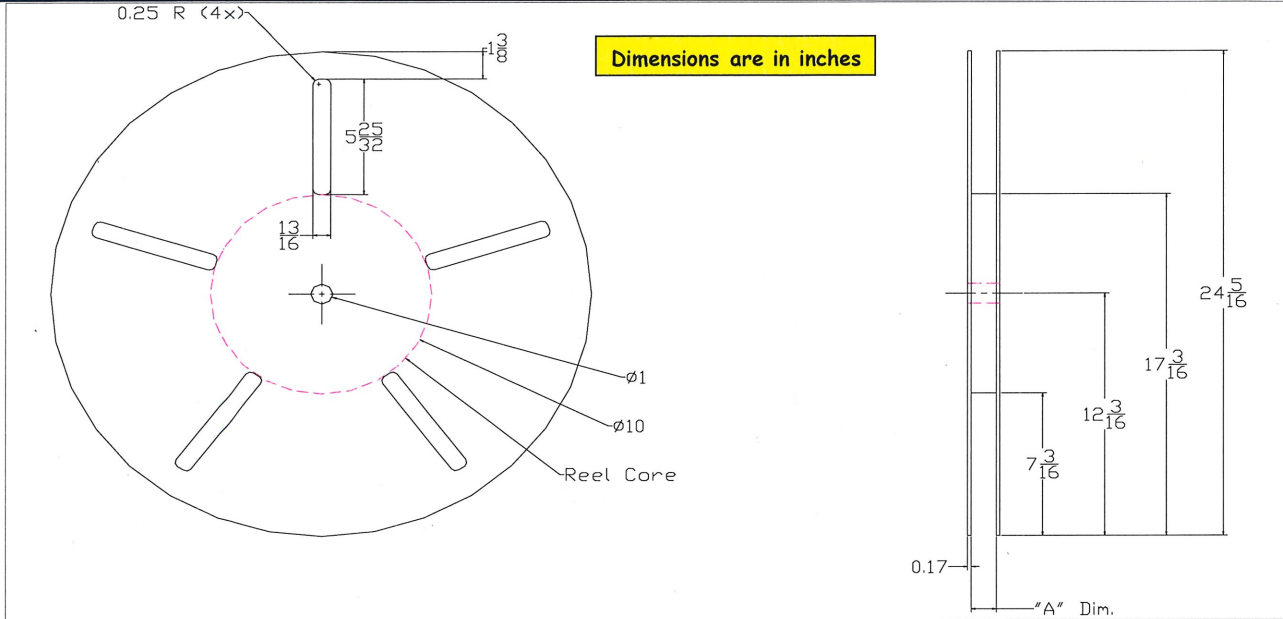
Section 4.6 Serial Number Area: Each shipping container and bag must bear a label with a unique serial number. In this way each container, regardless of content or destination, can be differentiated from others.

WORK INSTRUCTION

AREA:	TERMINAL MANUFACTURING GROUP
TITLE:	A1, A2, and A3 Reel Dimension Specifications

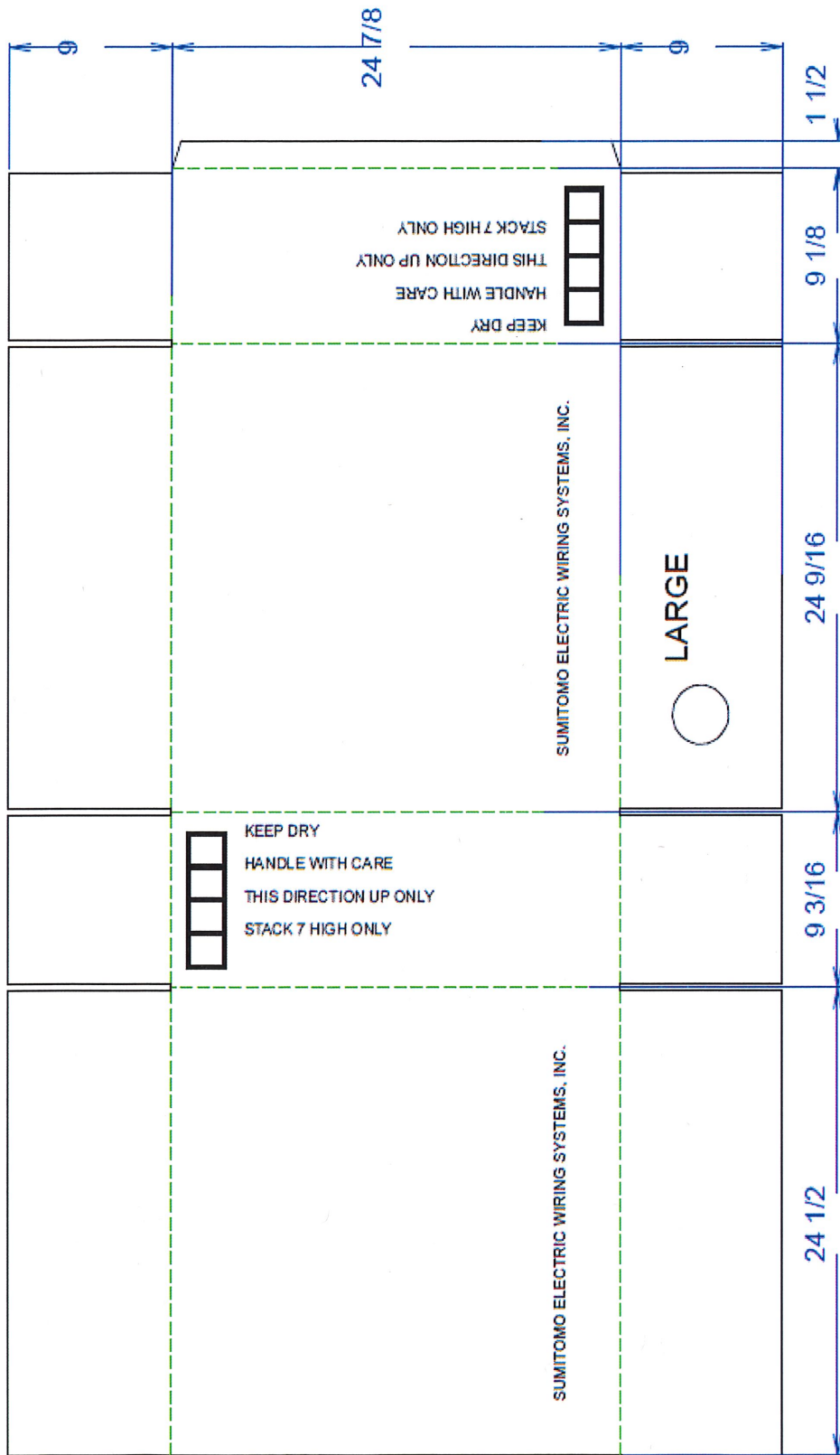
Purpose: This Work Instruction covers the scope of A1, A2, and A3 reel dimension specifications for purchasing and production requirements.

Reel Frame



Reel Width		
Reel Type	"A" Dimension	
A1	1.125"	±0.0625" (+1.59 mm)
	(28.58 mm)	∞0.0000" (-0.00 mm)
A2	1.400"	±0.0800" (+2.03 mm)
	(35.56 mm)	∞0.0000" (-0.00 mm)
A3	0.763"	±0.0800" (+2.03 mm)
	(19.38 mm)	∞0.0000" (-0.00 mm)

Reel Construction	
Item	Material
Reel Frame	Corrugated Paper (Cardboard)
Reel Core	Styrofoam



4 PANEL - 1 COLOR / PRINTING DIE # 62 / INK: 33 BLUE

WORK INSTRUCTION

AREA:	TERMINAL MANUFACTURING GROUP
TITLE	Raw Material Specifications

PURPOSE:

THIS SPECIFICATION IS APPLIED TO THE METAL STRIP THAT IS SUPPLIED FOR SUMITOMO ELECTRIC WIRING SYSTEMS, INC SV#5

1. QUALITY:

1 CHEMICAL COMPOSITION:

SEE TABLE 1A

2 SURFACE CONDITION:

THE SURFACE MUST BE SMOOTH AND SHALL BE FREE FROM SCRATCHES, MARKS, MECHANICAL DAMAGE, DISCOLORATION, FOREIGN MATERIAL AND OTHER INJURIOUS DEFECTS. GRAIN SIZE WILL BE .010 NOMINAL AT RF (READY FINISH).

3 SURFACE ROUGHNESS:

0.50 um MAXIMUM.

4 SURFACE EDGE:

TO BE FREE FROM BURRS.

2. DIMENSIONAL TOLERANCES:

TABLE - 2

Alloy	THICKNESS INCH (MM)	WIDTH INCH (MM)
260 / 268	+ .0004, -.0004 (+.010, -.010)	+0.0, -.006 (+0.0, -.15)
C194	+ .0003, -.0003 (+.008, -.008)	+ .002, -.002(+.05, -.05)
KLF-5	+ .0004, -.0004 (+.010, -.010)	+ .002, -.002(+.05, -.05)
MSP1 / MAX251	+ .0004, -.0004 (+.010, -.010)	+0.0, -.004 (+0.0, -.010)

3. PLATING THICKNESS:

TABLE - 3

PLATING	THICKNESS INCH (MM)
COPPER/BRASS SUBSTRATE	.000020 MIN. (.0005 MIN.)
T.I.N.	.00004 TO .00008 (.0010 TO .0020)

1 PEELING TEST:

AFTER 180 DEGREE BENDING (INSIDE RADIUS 0.5 t), THERE IS NO FLAKING ON TIN PLATE (BOTH PARALLEL AND TRANSVERSE).

2 ANTI - HEAT TEST: (RE-FLOW ONLY)

AFTER HEAT TREATMENT (356 DEGREE F X 2 HOURS), THERE ARE NO DISCOLORATION AND BLISTER ON THE TIN PLATE.

WORK INSTRUCTION

AREA:	TERMINAL MANUFACTURING GROUP
TITLE	Raw Material Specifications

6. STATISTICALLY CONTROLLED ITEMS:

- 1) TIN PLATING THICKNESS
- 2) COPPER SUBSTRATE THICKNESS

7. CONTROLLED ITEMS:

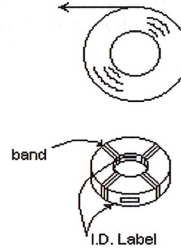
- 1) OVERALL DIMENSIONS
- 2) BATH TEMPERATURE
- 3) BATH CHEMISTRY
- 4) PLATING CURRENT (amps)

SURFACE ROUGHNESS SHALL BE MEASURED AND GUARANTEED BY THE VENDOR.

8. PACKING:

1. SPECIFICATION OF COIL SIZE:

- | | |
|---------------------|------------------------------|
| A) COIL DIRECTION | COUNTER CLOCKWISE |
| B) OUTSIDE DIAMETER | 36.0" MINIMUM AND 46.0" MAX. |
| C) INSIDE DIAMETER | 16.0" MINIMUM AND 18.0" MAX. |
| D) INTERNAL PAPER | NONE |
| E) COIL END TAPE | NO TAPING |
| F) BANDING | PRE APPROVED BANDING ONLY |
| G) LAPPING | NONE |
| H) LABEL | ID AND OD EACH COIL |



2. SPECIFICATION OF TRANSPORTATION SKID:

MATERIAL TO BE PACKED ON A WOODEN PALLET, USING A VAPOR BARRIER. DO NOT MIX ROUND NUMBERS ON THE SAME PALLET, THEN USE STRAPPING 4 TIMES EQUALLY SPACED FROM THE INSIDE DIAMETER TO THE OUTSIDE DIAMETER OF THE SKID. STRETCH WRAP MATERIAL ADD TOP AND STRAP

3. SPECIFICATION OF MATERIAL SPACERS:

A QUANTITY OF (6) APPROVED RADIAL SPACERS, SPACED 60 DEGREES APART ARE TO SEPARATE EACH RAW MATERIAL PANCAKE. THE LENGTH IS TO EXTEND INTO THE INSIDE DIAMETER, AND BEYOND THE OUTSIDE DIAMETER A MINIMUM OF 1" AND A MAXIMUM OF 3". SPACER THICKNESS NOT TO EXCEED 3/4".

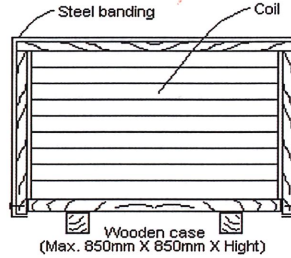
WORK INSTRUCTION

AREA:	TERMINAL MANUFACTURING GROUP
TITLE	Raw Material Specifications

2. SPECIFICATION OF WOODEN CRATE:

THE CONTENTS OF THE SHIPPING MARK SHOULD BE PRINTED ON THE OUTSIDE

A) UPPER PALLET	WOODEN CASE
B) NUMBER OF COILS	NO REGULATION
C) SPACER BETWEEN COILS	NOT USED
D) SPACER UNDER COILS	NOT USED
E) DESICCANT	OZ. 15g X 2pcs.
F) BOTTOM PALLET	850 X 850mm MAX
G) GROSS WEIGHT	500 KG. MAX.
H) GROSS HEIGHT	NO REGULATION



9. LABEL MARKING:

THIS LABEL DESCRIPTION IS FOR BOTH , MATERIAL AND SKID LABELS

- | | |
|--|-------------------------|
| 1. ALLOY DESCRIPTION | 6. LOT / TRACE NUMBER |
| 2. TEMPER. (Ksi or n/mm ²) | 7. MANUFACTURER'S DATE. |
| 3. DIMENSIONS, STANDARD AND METRIC. | 8. MANUFACTURER'S NAME. |
| 4. COIL NUMBER | 9. SEWS RM NUMBER. |
| 5. COIL WEIGHT. | |

WORK INSTRUCTION

AREA:	Supplier Quality Assurance
TITLE:	Specification of Pelletized Alloy Resins

PURPOSE:

THIS SPECIFICATION IS FOR PELLETIZED PLASTIC RESIN SUPPLIED BY AN OUTSIDE VENDOR/SUPPLIER.

1. QUALITY:

- MATERIAL PROPERTIES REQUIREMENTS:
MUST MEET PHYSICAL PROPERTIES REQUIRED PER MATERIAL SPECIFICATION.
- PELLET CUT AND QUALITY
PELLET CUT MUST BE IN SPECIFICATION WITH NO LONGS OR FINES AS DESCRIBED BELOW.

2. MATERIAL SIZE SPECIFICATIONS:

TEST METHOD	TEST NAME	UNITS	SPECIFICATION
CALIPER	PELLET SIZE	mm	Ø3.5 MAX, 6mm MAX LENGTH

3. OTHER SPECIFICATIONS:

- SHALL BE FREE OF METAL OR OTHER NON-PLASTIC CONTAMINATION
- SHALL NOT HAVE EXCESS DUST OR FINES AFTER EXTRUSION
- SHALL NOT HAVE MISCUTS, STRINGS, LONGS OR OTHER ABNORMAL DEFECTS
- NO ADDITIVES (COLORANTS, LUBRICANTS, PLASTICIZERS, ETC.) SHALL BE ADDED DURING EXTRUSION.

4. FREQUENCY OF CHECKS:

- PHYSICAL PROPERTIES
PROPERTIES SHOWN IN ITEM 2 ABOVE WILL BE CONFIRMED AND REPORTED ONCE PER PRODUCTION RUN.
- VISUAL AND OTHER SPECIFICATIONS
EACH GAYLORD SHALL BE VISUALLY INSPECTED FOR POSSIBLE CONTAMINATION AND MISCUTS
- A DOCUMENT SHOWING THE RESULTS SHALL BE INCLUDED WITH SHIPMENT

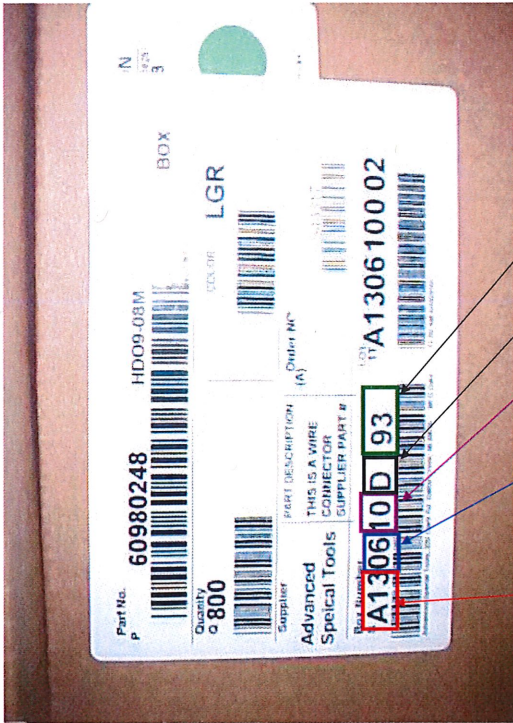
5. RECORDS RETENTION

- RECORDS OF TEST RESULTS SHALL BE MAINTAINED FOR A MINIMUM OF 1 YEAR.
- RECORDS OF PROCESS SETPOINTS SHALL BE MAINTAINED FOR A MINIMUM OF 1 YEAR.

6. CONTROLLED ITEMS:

- DATA POINTS OF THE FOLLOWING ITEMS SHOULD BE MAINTAINED TO TRACK THE STABILITY OF THE PROCESS.
 - PELLET DIMENSIONS
 - PELLET COLOR
 - MELT FLOW
 - FLEXURAL MODULUS
 - TENSILE STRENGTH
 - TENSILE ELOGATION
 - IZOD IMPACT STRENGTH

Box Label Specification



Serial number example

Year Code	Mold #	Month	Date	Yr	Box Ct
N 2000	1	2	3	4	5
O 2021	6	8	0	1	0
P 2022	A	1	4	0	1
Q 2023					
R 2024					
S 2025					
T 2026					
U 2027					
V 2028					
W 2029					
X 2030					
Y 2031					
Z 2032					

Year Code

A	2007
B	2008
C	2009
D	2010
E	2011
F	2012
G	2013
H	2014
I	2015
J	2016
K	2017
L	2018
M	2019

← Example 3 digit Mold #
 ← Example 4 digit Mold #

Mold #

If 4 digit Mold use
 Letter for 1st 2 digits

- 10=A
- 11=B
- 12=C
- 13=D
- 14=E
- 15=F
- 16=G

month

date

year

Box #

The serial number is required to start with a supplier identification letter/number.
 The supplier identification letter/number should be confirmed through SEWS SV PC.
 The following identification letter/numbers are currently in use:

Begin Serial With:

- A
- CT
- DA
- DT
- E
- I
- L
- MI
- M
- P
- PL
- PS
- Q
- R
- S
- T
- DTR
- FC
- BC
- AD
- BB
- CP
- SW
- TP
- Y
- SE