



莫仕连接器（成都）有限公司
MOLEX INTERCONNECT (CHENGDU) CO., LTD
Commercial Products Division

文件编号: STQ-260

Rev.A

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Version	Change Content	Date	Author	Document title
A	New Release	8/25/2017	WeiBo	Molex(ChengDu)METAL STRIP PACKAGING STANDARD

1.0 Scope

This standard covers the Cheng Du suppliers' general packaging requirements for traverse wound and pancake coiled metal strip materials.

2.0 Purpose

The purpose of this standard is to clearly define to all vendors the preferred packaging requirements for Molex (Cheng Du) metal strip raw materials.

3.0 Reference Documents

3.1 ES-4000-5008 Metal Strip Packaging Standard

Molex LINCOLN Metal Strip Packaging Standard

3.2 Order of precedence

In the event of a conflict between this standard and selected reference documents above, the order of precedence shall be as follows:

1. Purchase Order
2. Individual Strip or Wire Specification
3. This standard

4.0 Definitions

Runner: This applies to 4" x 4" construction lumber that the pallet platform is built on.

The runners support the weight of the pallet on the floor, and allow the package to be transported by a fork-lift device.

Spooling: This term is utilized when wire, which has a cast drawn into it, is wound onto a flanged drum (the spool). The terminology is such that: *Wire is spooled.*

Reeling: The term is utilized when flat wire or slit strip is traverse wound onto a flanged drum (the reel) with the appropriate tension and inter-spacing. The terminology is such that: *Flat wire and strip are reeled.*

Coiling: This term is utilized when a single element of strip or flat wire is layer wound on its self in the same plane with a specific starting inside diameter. This process yields a product that when observed laying flat in a horizontal plane resembles a pancake. Hence the terminology, "Pancake Coil".

Payoff Direction: This term indicates the direction in which the material travels when the package is unwound.

Weld Dogleg: This term refers to butt-welding two strips together. Two strips are welded together at an included angle, resulting in strip camber.

Label Slitting Map: The label slitting map describes what element of the slitter head is located in the master coil. The purpose is for containment and problem solving.



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5.0 Procedures

5.1 General packaging

This document contains the standard minimum requirements for packaging metal strip products supplied to Lincoln, but is not all inclusive. The ultimate responsibility for the integrity and suitability of all packaging remains with the supplier. In the event of processing issues, the Molex plant and supplier will work together to document and implement any necessary changes.

Refer to the appendices for additional plant requirements and deviations from the General Standard.

5.1.1 Traverse Wound Packaging requirements

1. Pallet size – Length:1219mm Max (48"); Width: 1000mm Max (39.4")
2. Minimum width between outside runners - 600mm (23.7")
3. Minimum runner height - 100mm (4")
4. Maximum center runner width - 80mm
5. Maximum of two reels per pallet
6. Two bands around each reel
7. Minimum of one band through tracked label
8. Critical Safety - Outside flanges must be separated between two reels a minimum of 38mm (1-1/2").If two spools on the one pallet. The wooden spacer between two spools is 60mm min.
9. The minimum distance between the material and the inside surface of the flange must be 3.2mm (1/8")
10. Shrink wrap, then paper cover with payoff direction clearly marked
11. Maximum gross skid weight: 1100 kg (2426 lbs.)
12. Maximum gross spool weight: 500kg (1102 lbs.)
13. Maximum package height: 950mm (37.4")
14. Every reel must stick traceability label and 2D label is stuck on spool directly.
15. Attach a 380mm (15") sample in envelope on each reel
16. Reel I.D. card with peel-off backing
17. Stencil supplier name and tare weight by difference on packing slip for each pallet
 - a. Material weight alone
 - b. Pallet weight (Optional)
 - c. Reel weight
18. Each reel must be slit and welded in the same direction (i.e. burr down/up on both sides of weld)
19. No metal protrusions are allowed on bottoms of runners.
20. There must be a 76 mm (3") minimum gap between the material and the pallet
21. The format of the 2-D barcode is PDF417, and the total length of the 2-D barcode string is 99

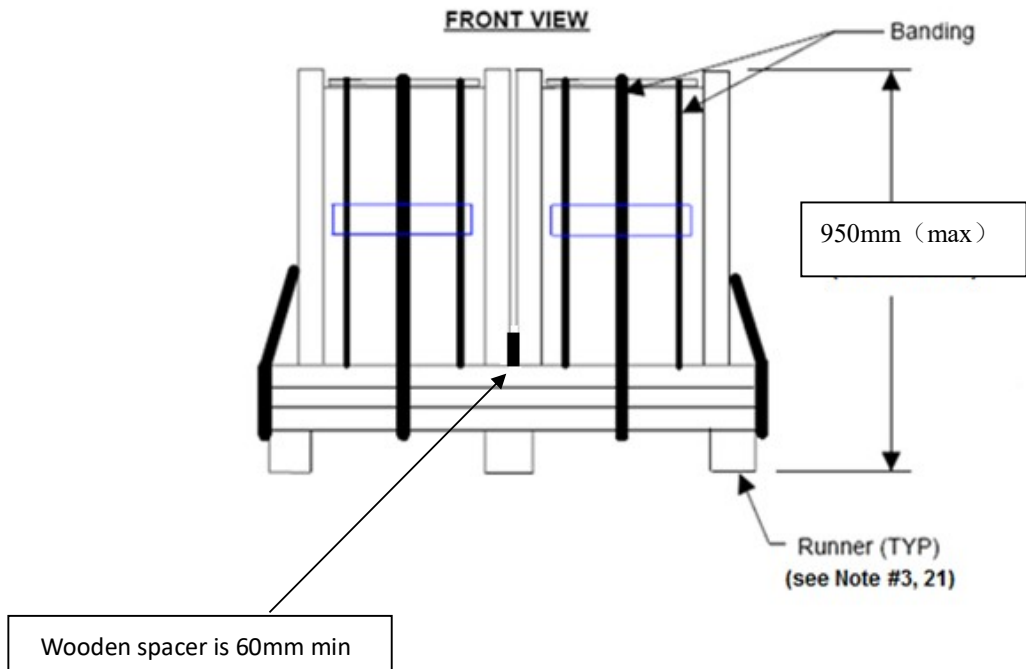
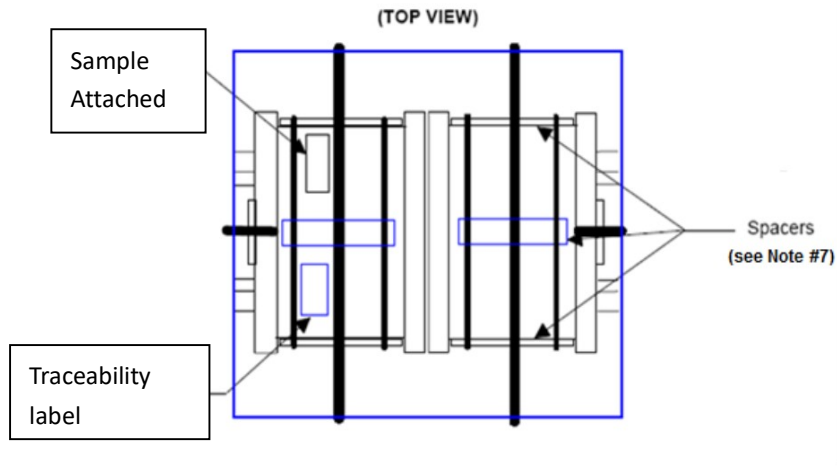


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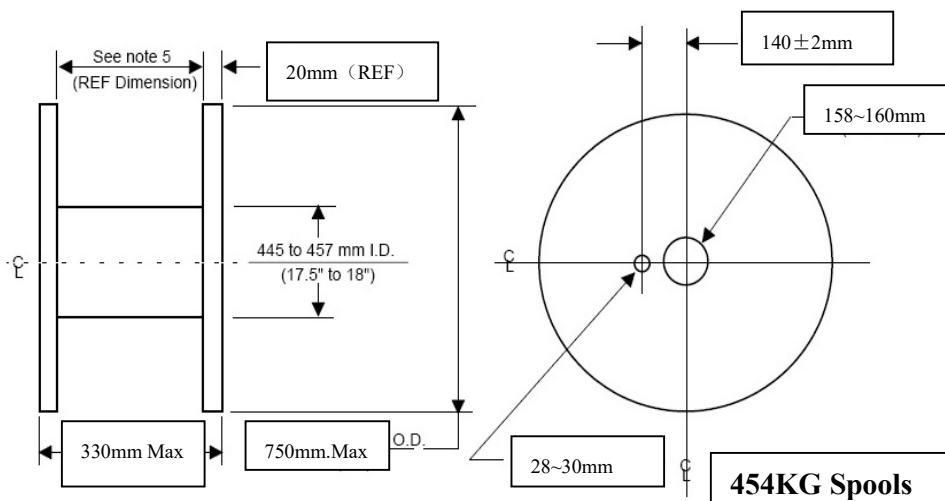
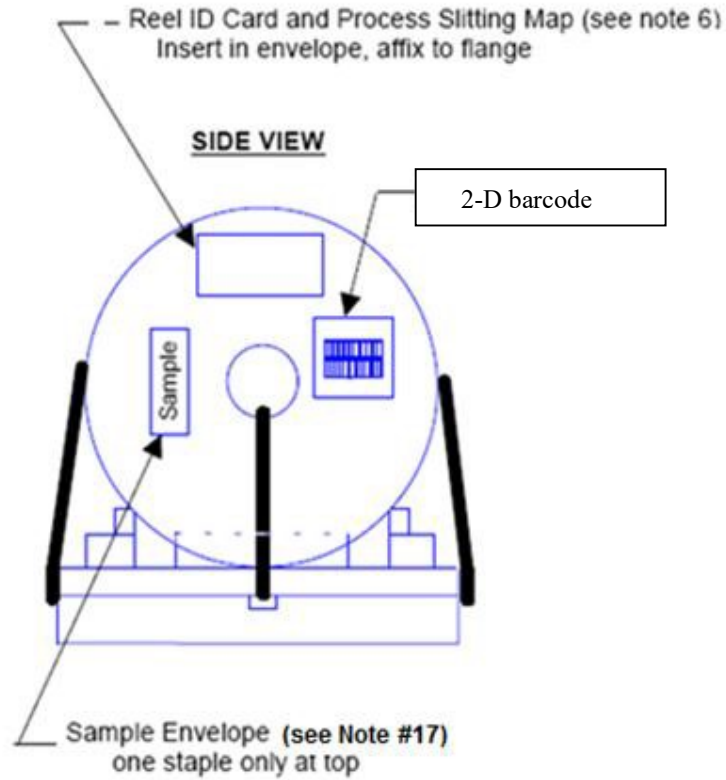


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- Spool requirements
1. Spool flanges must be the same diameter to within $\pm 1.6\text{mm}$ ($\pm 1/16''$) each other;
 2. Spool flanges must be concentric, with no detectable flat spots;
 3. Wooden spool must be steel rimmed;
 4. Flange to core must be perpendicular to each other ; (optional)
 5. For 454kg spool ,dimension to be 290mm max;

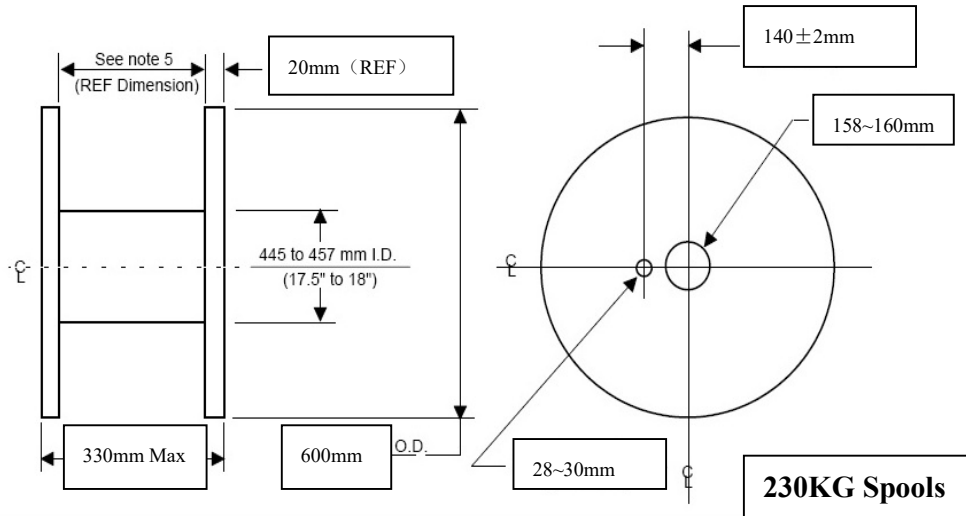


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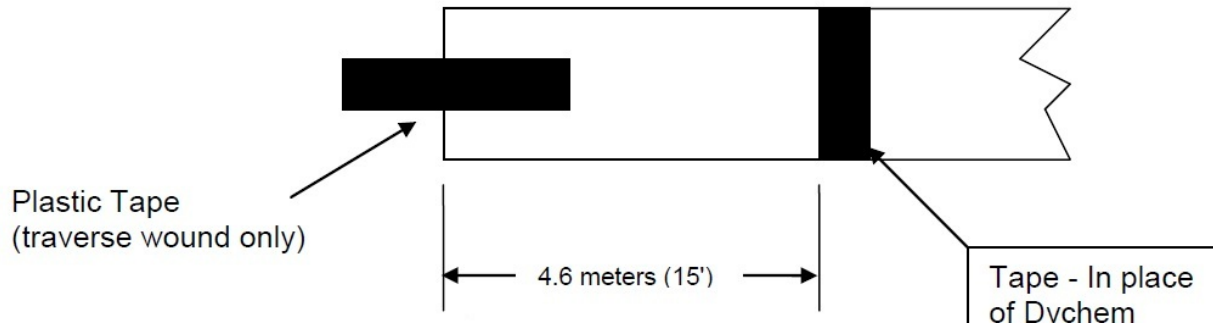
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TRAVERSE WOUND STRIP MARKING INSTRUCTIONS

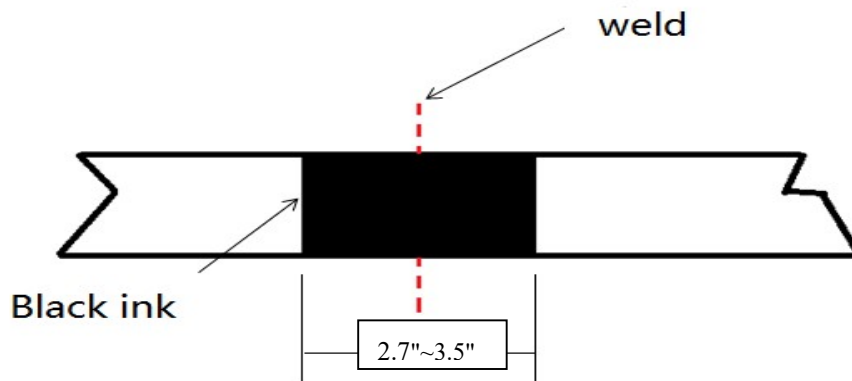
END OF REEL IDENTIFICATION



Use rule: Black non-residue tape (TESA 4288) for taping the strip to the reel, end of reel marking, welds, and taping the tails when the reel is completed.

This mark is not needed for Molex Cheng Du if there is no any special requirement.

Weld identification



Black ink - In place of Dychem - Black ink to span 1.2" MINIMUM on both side of weld joint. Black ink width needs to equal the strip width.



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5.1.2 Minimum Packaging Requirements - Pancake Coils

Pallet:

1. Pallet size - Length:1000mm ~1200mm (39.4"~47.3");Width:1000mm~1200mm(39.4"~47.3")
 - a. Square – O.D. must be 50mm (2") greater than coil O.D. (25mm (1") clearance per side) and corners of pallet must be chamfered so not to exceed 57" diagonally ,and the distance between the corners 1612mm max

Note: Molex CD advise suppliers to make sure at least one side size 1000mm.
2. Minimum width between outside runners must be 600mm (23.7")
3. Maximum center runner width must be 80mm
4. Minimum runner height must be 100mm (4")
5. Wooden pallet shall not be constructed of "green lumber". Preferred fastening method with screws or bolts No metal protrusions on the bottom of the runners are allowed
6. Cover material using 19mm (3/4") wood secured to pallet;
7. Stencil supplier name and tare weight by difference on packaging slip for each pallet:
 - a. Material weight alone
 - b. Pallet weight (optional)
 - c. Coil weight
8. Certification required each pallet and a packing slip on each coil
9. 380mm (15") sample in envelope – Must be included in shrink wrap that is around skid so that sample can be easily retrieved without breaking down the entire skid to locate
10. Do not mix heats from pallet to pallet; one heat per pallet. Pallets must be individually labeled and numbered for each shipment (i.e. pallet 1 of 4, pallet 2 of 4, etc.). The pallet number shall be located on an end pallet runner with the material supplier's name, location where manufactured and tare weight of the pallet
11. Packing slip must specify net weight of each pallet tag
12. Wooden block spacers shall be moisture barrier wrapped
13. Maximum packaging height – 700mm (27.6")
14. Maximum gross weight – 1360kg (3000 lbs.)
15. 4mm (.157") or .125" (3.1mm) cardboard strips are acceptable between coils and must be equally positioned in four places and extend minimum 25mm (1") beyond ID and OD of coil
16. Homosote spacers must be used for huge coil OD material

Coils:

17. Coil Outer Diameters:
 - a. Minimum coil OD – 800mm (31")
 - b. Maximum coil OD – 1100mm (43.3")
18. Coil Inner Diameters:
 - a. Minimum - 300mm (11.8")
 - b. Maximum – 410mm (17")
19. When supplying multiple coils, payoff to be in same direction.

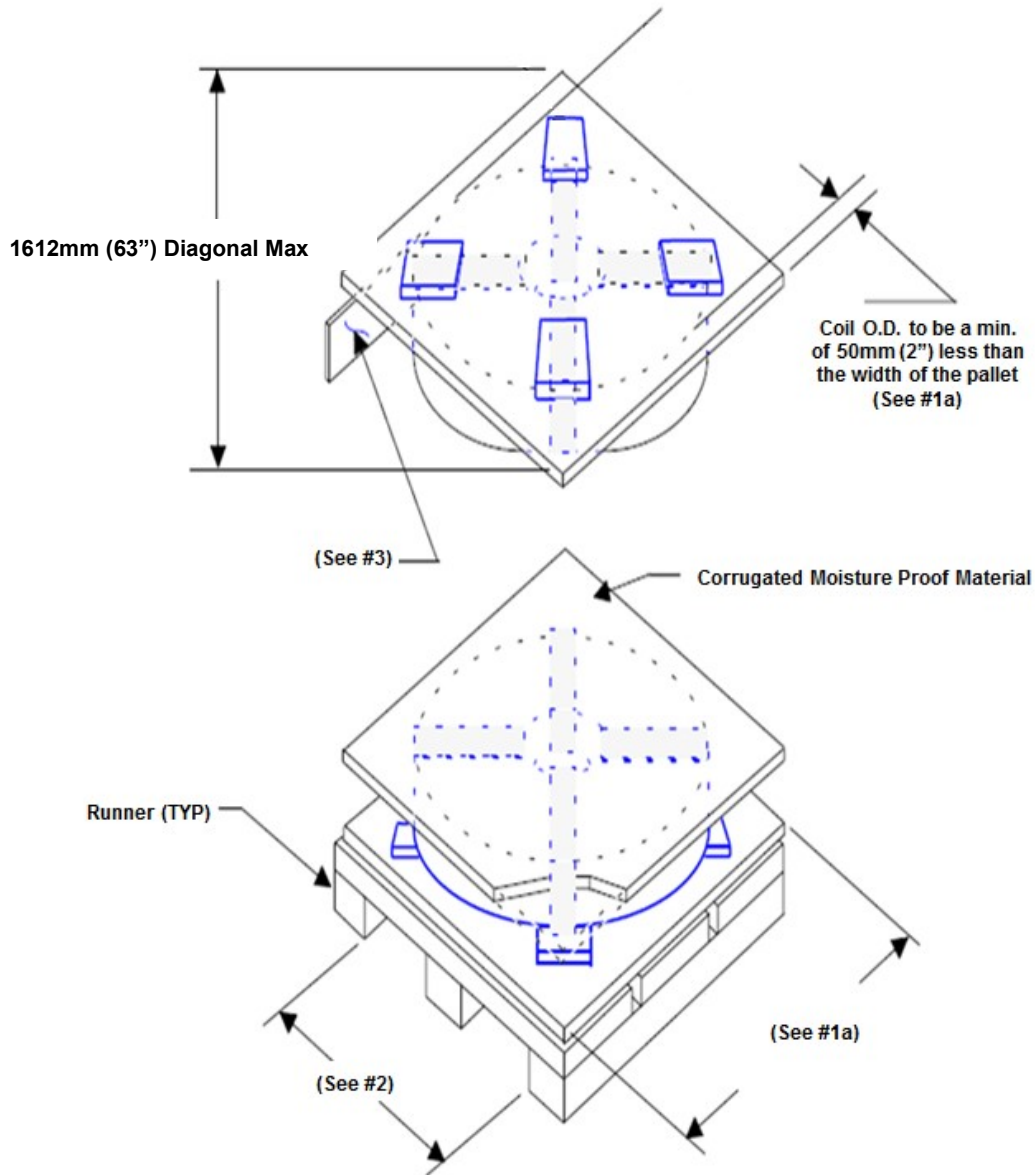


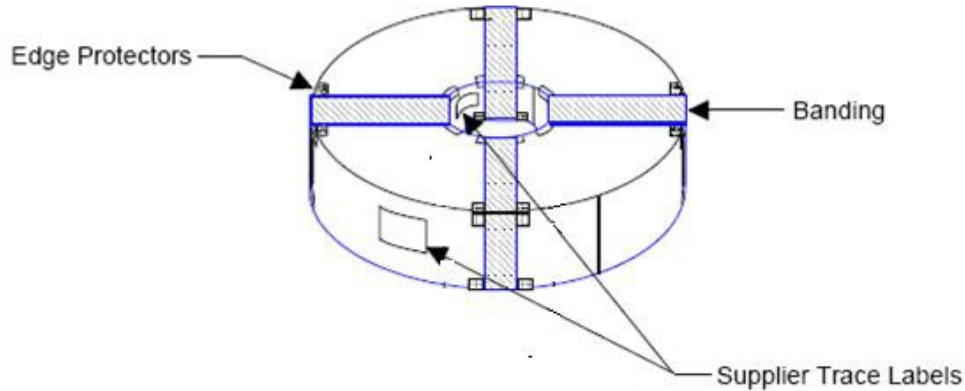
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5.1.3 MULTI-COIL PROCESS

1. Maximum coil O.D. – Maximum diameter that can be achieved by master coil up to 43.3". Coil O.D. shall be a minimum of 50mm (2") less than width of pallet.
2. Minimum coil O.D.:
 - A. 12" I.D. – 33"
 - B. 16" I.D. – 38"
3. Coil Inner Diameters:
 - A. Minimum - 300mm (11.8")
 - B. Maximum – 410mm (17")
4. No center cardboard core if feasible.
5. The "burr" will be down or to the inside of the coil.
6. Round or square cardboard spacers are preferred as this allows us to remove one sheet during processing.
7. Minimum amount of bands to ensure coils are secure.
8. Maximum gross weight of 1360kg (3000 lbs.)



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5.2 LABELING AND IDENTIFICATION

5.2.1 END-OF REEL IDENTIFICATION : TRAVERSE WOUND

5.2.2 LABELING AND IDENTIFICATION : TRAVERSE WOUND AND PANCAKE COILS

Each reel or coil shall have the following information stated on a label(s). Refer to ES-40000-7012 section 5.3 for label application requirements. (See section 5.1.1 & 5.1.2)

- a) Label Slitting Map (master coil number, weld number, winder number, reel/coil number)
- b) Molex Material Number (also referred to as Molex EDP #, Molex P/N)
- c) Molex Purchase Order number.
- d) Actual net weight of the material.
- e) For pancake coils only, each coil must reference the Molex P/N, supplier master coil number, and supplier cut number, located on the I.D. and O.D. tails of the material strip.

5.2.3 PACKING SLIP: TRAVERSE WOUND AND PANCAKE COILS

A packing slip is required for each shipment, identifying the net weight (kg) of each pallet. (See sections 5.1.1 & 5.1.2)

5.2.4 CERTIFICATION: TRAVERSE WOUND AND PANCAKE COILS

Certification is required for each shipment, and must include.

- a) Molex drawing Document Number and Revision
- b) Molex Material Number(Molex P/N)
- c) Molex Purchase Order number
- d) Lot number
- e) Quantity (net weight)
- f) Date shipped
- g) Metal strip width and thickness dimensions
- h) Alloy type and chemical composition
- i) Mechanical properties (actuals) including
 - ❖ Tensile
 - ❖ Yield
 - ❖ % Elongation
 - ❖ Grain size (if applicable)
 - ❖ Plating finish thickness
 - ❖ Bends "OK"
 - Roughness
 - Hardness (Optional)



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6.3 WELD

DIMENSIONS AND NUMBER OF WELDS

The following table specifies the maximum number of welds for traverse wound reels based on specific width categories.

Strip Width (mm)	230 kg Reel	454 kg Reel
6.35-12.69	4 Welds	8Welds
12.70-18.99	4Welds	4Welds
19.00-25.39	3 Welds	3 Welds
25.40-37.99	2Welds	2Welds
38.00-50.79	1Welds	1Welds
>/= 50.80	1Welds	1Welds

6.4 WELD CRITERIA

- a) Weld thickness will equal the strip thickness at the specified tolerance on the Molex material specification.
- b) Weld width will equal the strip width at the specified tolerance on the Molex material spec.
- c) There shall be no visible voids.
- d) Weld dogleg equals the strip camber to the specified tolerance on the Molex material spec.
- e) Welding process must produce material that bends around a 76 mm (3") dia. mandrel without any visible cracking.



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Sign and date:

Created By: _____ Wei Bo _____

Checked By: Zhou Suhua; Ji Deli; Wan Sunny; Ran CongWei; Yuan YuCai

Approved By: _____ Yao LiMin _____

To:

IQC (1) CBU Assembly () EBU Assembly () TBU Assembly () Molding ()

Insert molding () Plating () Stamping (1) Other ()